

KEEPING TALENT IN AMERICA

BY STUART ANDERSON

EXECUTIVE SUMMARY

After years of arguing over how to restrict high skill immigration a consensus may be emerging to establish an easier path to immigration for foreign nationals with advanced degrees from U.S. universities. Members of Congress and even a major presidential candidate have argued America should, in effect, “staple” a green card to the diploma of international students who graduate from a U.S. university with an advanced degree in science, technology, engineering or mathematics (STEM). Such a change in policy would likely reap significant benefits to the competitiveness of U.S. companies and to the economy overall.

The new policy would address the significant problem in our immigration system of waits for employment-based green cards that today can last 5 years or even decades, depending on the category and country of origin. An exemption from green card quotas for at least 50,000 advanced degree STEM graduates annually from U.S. universities would make green cards immediately available to many highly skilled foreign nationals that U.S. employers – and the country – would like to retain. That is compared to currently projected waits for Indian nationals of 8 years or more in the employment-based second preference (EB-2) category and up to 70 years for Indians in the EB-3 (employment-based third preference) category if sponsored today for an employment-based green card. A Chinese immigrant sponsored today in the EB-3 category could wait two decades.

In addition, an exemption of at least 50,000 for advanced degree STEM graduates would eliminate the backlog in the employment-based second preference (EB-2) and make the category current within three years. It would also eliminate the employment-based third preference (EB-3) backlog and potentially make the category current within 10 years. This is a conservative estimate that assumes the annual flow of sponsored individuals and dependents matches the current quota for EB-2 (50,000) and EB-3 (35,040). To the extent the annual flow is higher or lower, that would change the impact of a STEM exemption on backlogs and wait times.

Foreign nationals with masters degrees or higher in science and technology fields are important contributors to product development, patent filings, startups and company expansions in America. Today’s legislative proposals are being driven by concern that skilled foreign nationals faced with other options are deciding America is no longer the land of opportunity. Current legislation proposes requiring a valid job offer at a salary comparable to an American professional to qualify for the employment-based green card. Wise decisions made on how to structure legislation, including who would qualify, could help achieve a political consensus and result in a landmark policy change that would benefit the United States for years to come. A grant from the Ewing Marion Kauffman Foundation funded the research for this NFAP paper. The contents of this publication are solely the responsibility of the National Foundation for American Policy.

THE DILEMMA: OUTSTANDING IMMIGRANTS, ENDLESS WAITS FOR EMPLOYMENT-BASED GREEN CARDS

The dilemma facing the United States is that outstanding individuals from all over the world want to study, work and make their careers in America but, in many cases, our immigration system makes this impossible. Changes in the law will be necessary if America is to reap the rewards offered by outstanding international students.

Our system for allowing employers to sponsor skilled foreign nationals for permanent residence (a green card) is plagued by inadequate quotas that result in years of waiting and frustration. An October 2011 NFAP study analyzed the employment-based green card backlog and produced findings that should give pause to policymakers. The study concluded: “A highly skilled Indian national sponsored today for an employment-based immigrant visa in the 3rd preference could wait potentially 70 years to receive a green card . . . Many skilled foreign nationals from China have been waiting 6 to 7 years and can expect to wait additional years. . . In the EB-2 category, second employment-based preference, skilled foreign nationals from India and China may wait 6 years or more.”¹

Table 1
Estimated Wait for Indian Professional Filing for an Employment-Based Green Card (EB-3)

Estimated Number of Indians in EB-3 (employment preference third) Backlog	Indians Granted Permanent Residence Per Year (average of 2009 and 2010)	Estimated Wait Time to Receive Employment-Based Green Card in EB-3 Category if Indian Professional Sponsored Today
210,000	2,860	70 years

Source: National Foundation for American Policy; Department of Homeland Security, State Department. The per country limit generally restricts the number of individuals from one country to 2,800 a year in the EB-3 category.

The two factors that have caused the long waits for employment-based green cards are 1) the 140,000 annual quota, which is too low, and 2) the per country limit on employment-based preference categories, which restricts the annual number of green cards for immigrants from one country to 7 percent of the total. As the NFAP analysis noted, “That means skilled foreign nationals from India and China, who make up most of the applications, wait years longer than nationals of other countries.”²

¹ Stuart Anderson, *Waiting and More Waiting: America’s Family and Employment-Based Immigration System*, NFAP Policy Brief, September 2011, pp. 1-2.

² Ibid.

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U.S. employers possess limited options for hiring skilled foreign nationals to work long-term in the United States. H-1B status is often the only option for hiring an outstanding international student or professional overseas long-term. However, the annual H-1B quota has been exhausted every year prior to the end of the fiscal year since FY 2003, meaning the visa can be an unreliable method of securing needed talent. A nine-month gap may exist between when an employer recruits a foreign national on a campus and the date any newly hired individual could start working in H-1B status.

Table 2
Projected Wait Times for EB-2 With No Change in Law

India	China	All Other Countries
Many Indians in EB-2 have been waiting more than 4 years for a green card and, depending when they applied, will wait another 1 to 5 years with no change in the law	Many Chinese in EB-2 have been waiting more than 4 years for a green card and, depending when they applied, will wait another 1 to 5 years with no change in the law	0 years, no waiting, category is current

Source: National Foundation for American Policy; Visa Bulletin, September 2011, U.S. Department of State; Office of Immigration Statistics, Department of Homeland Security. Note: Wait times are estimated for the typical person in that category/filing date; those who filed most recently in those categories would come in after those who filed the latest.

While waiting for a green card, an individual is often already in the United States in another status, such as H-1B status, which is a temporary visa generally limited to 6 years total (with a renewal after the first 3 years). Those with pending green card applications can receive annual extensions to their H-1B status. However, such individuals may hesitate to be promoted or change jobs if it would affect their green card applications and cause them to begin the long process again. In addition, those waiting for their green cards face the risk of a layoff or company closure, are unlikely to have the opportunity to start a business without permanent residence, and their spouses generally cannot work.

Table 3
Ph.D.s Earned By Foreign Nationals from U.S. Universities in STEM Fields (2009)

Academic Discipline	Number Of Foreign Nationals Earning Degrees	Percent Foreign Nationals Earning Degrees In Discipline
Industrial Engineering	221	66.4%
Electrical Engineering	1,381	65.7%
Economics	764	65.2%
Civil Engineering	554	61.4%
Mechanical Engineering	714	60.2%
Materials Engineering	380	57.5%
Computer Science	845	53.2%
Chemical Engineering	449	50.7%
Physics	799	50.5%
Other Science and Engin. Tech.	1	50.0%
Other Physical Sciences	20	48.8%
Mathematics and Statistics	748	48.7%
Engineering Technologies	14	48.3%
Other Engineering	724	45.1%
Aerospace Engineering	120	44.9%
Architecture and Environ. Design	89	41.8%
Chemistry	1,066	40.2%
Atmospheric Sciences	42	38.2%
Agricultural Sciences	428	37.5%
History of Science	7	36.8%
Earth Sciences	170	33.8%
Astronomy	45	31.5%
Oceanography	35	31.5%
Biological Sciences	2,132	28.6%
Interdisciplinary/Other Sciences	38	26.0%
Mathematics Education	12	23.5%
Health Technologies	26	18.7%
Science Education	7	17.5%
Other Science/Tech. Education	18	12.2%
Medical Sciences	839	4.6%
Other Life Sciences	368	2.9%
TOTAL	13,056	22.7%

Source: Data from the National Center for Education Statistics obtained from the National Science Foundation's Webcaspar data system; National Foundation for American Policy.

Table 4
Masters Degrees Earned By Foreign Nationals from U.S. Universities in STEM Fields (2009)

Academic Discipline	Number Of Foreign Nationals Earning Degrees	Percent Foreign Nationals Earning Degrees In Discipline
Electrical Engineering	7,128	59.8%
Chemical Engineering	659	51.3%
Computer Science	8,332	48.2%
Industrial Engineering	2,050	47.3%
Materials Engineering	384	45.6%
Economics	1,659	45.3%
Mathematics and Statistics	2,216	40.6%
Mechanical Engineering	1,798	38.3%
Engineering Technologies	649	36.3%
Physics	610	35.7%
Chemistry	695	32.6%
Civil Engineering	1,337	29.2%
Other Engineering	1,974	27.3%
Oceanography	29	21.2%
Aerospace Engineering	244	20.8%
Astronomy	25	18.0%
Biological Sciences	1,706	17.4%
Science Technologies	5	16.7%
History of Science	5	15.2%
Earth Sciences	185	15.1%
Architecture and Environ. Design	1,013	14.8%
Agricultural Sciences	574	13.3%
Medical Sciences	1,405	12.7%
Other Physical Sciences	21	12.1%
Other Science and Engin. Tech.	52	11.9%
Interdisciplinary/Other Sciences	149	11.7%
Atmospheric Sciences	23	9.2%
Other Science/Tech Education	97	3.6%
Other Life Sciences	1,282	3.2%
Health Technologies	226	2.7%
Mathematics Education	42	2.7%
Science Education	32	2.5%
TOTAL	36,606	23.2%

Source: Data from the National Center for Education Statistics obtained from the National Science Foundation's Webcaspar data system; National Foundation for American Policy.

IMPORTANT CONTRIBUTIONS TO AMERICA BY ADVANCED DEGREE HOLDERS

Foreign nationals with masters degrees or higher in technology fields make vital contributions to America in such areas as product development, patent filings, startups and company expansions. Tables 3 and 4 show the extraordinary percentage of international students who earned Ph.D.s and masters degrees in key fields on U.S. campuses in 2009. The key question for policymakers: Do we want to educate these individuals and then, in effect, push them out the door to use their talents in other countries, and likely for non-U.S. companies?

Nearly 66 percent of the Ph.D.s in electrical engineering in the United States are earned by foreign nationals, along with 60 percent of masters degrees. Additionally, international students earned between half and two-thirds of the Ph.D.s awarded from U.S. universities in 2009 in the following fields: industrial engineering, civil engineering, mechanical engineering, materials engineering, chemical engineering, economics, physics and computer science.

As Table 4 shows, at the masters level, international students earned between one-third and one-half of the degrees at U.S. universities in computer science, physics, chemistry, economics, mathematics and statistics, chemical engineering, industrial engineering, materials engineering, and mechanical engineering.

In a paper for the Washington, D.C.-based Immigration Policy Center, economist Giovanni Peri, explains, “The United States has the enormous international advantage of being able to attract talent in science, technology, and engineering from all over the world to its most prestigious institutions . . . The country is certainly better off by having the whole world as a potential supplier of highly talented individuals rather than only the native-born.”³

Peri describes why his research shows a gain from immigration to native-born Americans with a college degree:

The relatively large positive effect of immigrants on the wages of native-born workers with a college degree or more is driven by the fact that creative, innovative, and complex professions benefit particularly from the complementarities brought by foreign-born scientists, engineers, and other highly skilled workers. A team of engineers may have greater productivity than an engineer working in isolation, implying that a foreign-born engineer may increase the productivity of native-born team members. Moreover, the analysis in this paper probably does not capture the largest share of the positive effects brought by foreign-born professionals. Technological and scientific innovation is the acknowledged engine of U.S. economic growth and human talent is the main input in generating this growth.⁴

³ Giovanni Peri, *Immigrants, Skills, and Wages: Measuring the Economic Gains from Immigration*, (Washington, DC: Immigration Policy Center, March 2006), 7.

⁴ *Ibid.*

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In testimony before the Senate Judiciary Committee, Microsoft General Counsel Brad Smith made the case for reforming the process for admitting highly skilled foreign nationals. “Our U.S. workforce is made up overwhelmingly of U.S. workers, but as part of our talent recipe, we have also relied on our ability to attract an essential complement of the best minds from other countries,” Smith testified. He cited the example of Alex Kipman, a native of Brazil who studied at the Rochester Institute of Technology, as an “impact talent.” Smith said that Kipman has been the primary inventor for 60 patent filings, including 14 granted in 2011. “Alex is one of the fathers of Kinect, and is the director of the team responsible for ‘incubating’ the project: he and his team took the vision and drove it through proof and execution,” said Smith. “Kinect, if you are not yet familiar with it, is the device that enables a person to control through voices and gestures the software and games for Microsoft’s Xbox.” Kinect has generated more than \$1.2 billion in revenue, has been “an important job creator at Microsoft . . . and there is also an important downstream economic effect for the creation of a product like Kinect: packaging; transportation; buyers and stock clerks and salespersons in the stores that sell it; the list goes on.”⁵

Foreign graduate students, particularly those who study science or engineering, are a boon to the U.S. economy and education system. They are critical to America’s technological leadership in the world economy. “Foreign students, skilled immigrants, and doctorates in science and engineering play a major role in driving scientific innovation in the United States,” according to a study by Keith Maskus, an economist at the University of Colorado, Aaditya Mattoo, lead economist at the World Bank’s Development Economics Group, and Gnanaraj Chellaraj, a consultant to the World Bank. Their research found that for every 100 international students who receive science or engineering Ph.D.’s from American universities, the nation gains 62 future patent applications.⁶

In conducting their research, Maskus, Mattoo, and Chellaraj found that “increases in the presence of foreign graduate students have a positive and significant impact on future U.S. patent applications and grants awarded to both firms and universities.”⁷ One of the issues the economists examined, which they answered in the affirmative, is “the possibility that skilled migrants may generate dynamic gains through increasing innovation.” One reason this issue is important to policy discussions is such gains would aid future productivity and increase real wages for natives. “Put differently, in a dynamic context, immigration of skilled workers would be complementary to local skills, rather than substitutes for them,” note Maskus, Mattoo, and Chellaraj. “Thus, more realistic theory suggests that skilled migration would support rising aggregate real incomes in the long run.”⁸ The bottom line conclusion,

⁵ Statement of Brad Smith, General Counsel and Senior Vice President, Legal and Corporate Affairs, Microsoft Corporation, before the U.S. Senate Committee on the Judiciary, Subcommittee on Immigration, Refugees and Border Security, on “The Economic Imperative for Immigration Reform – High-Skilled Immigration as a Driver of Economic Growth,” July 26, 2011, pp. 6-7.

⁶ Gnanaraj Chellaraj, Keith E. Maskus, and Aaditya Mattoo, “The Contribution of Skilled Immigration and International Graduate Students to U.S. Innovation,” March 17, 2005; Stuart Anderson, “America’s Future is Stuck Overseas,” *The New York Times*, December 1, 2006.

⁷ Chellaraj, Maskus, and Mattoo, p. 5.

⁸ *Ibid.*, 6-7.

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the researchers note, is that “reducing foreign students by tighter enforcement of visa restraints could reduce innovative activity significantly” in the United States.

Paula Stephan (Georgia State University) and Sharon G. Levin (University of Missouri-St. Louis) performed extensive research on the contributions of the foreign-born in 6 areas of scientific achievement. Those areas included election to the National Academy of Sciences/National Academy of Engineering, the launching of biotechnology companies and authors of scientific publications. After examining a study group of more than 4,500 scientists and engineers, Stephan and Levin wrote, “Individuals making exceptional contributions to science and engineering in the U.S. are disproportionately drawn from the foreign-born. We conclude that immigrants have been a source of strength and vitality for U.S. science and, on balance, the U.S. appears to have benefitted from the educational investments made by other countries.”⁹

Among the findings in the Stephan-Levin research:

- 19.2 percent of the engineers elected to the National Academy of Engineering are foreign-born, compared to the 13.9 percent of the engineers who were foreign-born in 1980.
- Members of the National Academy of Sciences are “disproportionately foreign-born;” 23.8 percent of the scientists and engineers elected to the National Academy of Sciences (NAS) are foreign-born, compared to 18.3 percent non-natives in the U.S. workforce.¹⁰
- “We find the foreign-born to be disproportionately represented among those making exceptional contributions in the physical sciences . . . more than half of the “outstanding” authors in the physical sciences are foreign-born compared to just 20.4 percent of physical scientists who are foreign-born in the scientific labor force as of 1980.”¹¹

THE NEXT GENERATION OF SCIENTISTS

The children of international students are leaders in the next generation of scientists and engineers, according to research by the National Foundation for American Policy.¹² At the 2011 Intel Science Talent Search, the primary distinction between the students was not intelligence or creativity but the immigration status of their parents. While all of the students were remarkable young people, 28 of the 40 finalists, or 70 percent, had parents who immigrated to America, compared to 12, or 30 percent, whose parents were born in the United States. (See Table

⁹ Paula E. Stephan and Sharon G. Levin, “Exceptional contributions to U.S. Science by the foreign-born and foreign-educated,” *Population Research and Policy Review*, 2001, 20: 59.

¹⁰ *Ibid.*, 70.

¹¹ *Ibid.*, 70.

¹² Stuart Anderson, *The Impact of the Children of Immigrants on Scientific Achievement in America*, NFAP Policy Brief, May 2011.

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5.) Note that only 12 percent of the U.S. population is foreign-born, and less than 1 percent entered on H-1B visas.¹³

According to the interviews conducted with finalists, 24 of the 28 immigrant parents started working in the United States on H-1B visas and later received an employer-sponsored green card. Fourteen of those 24 were first international students.¹⁴ Many of the students in the Intel Science Talent Search are motivated to cure diseases. For example, Jonathan F. Li, whose parents came from China to study at the University of Southern California, conducted a two-year project on destroying cancer cells. He developed a computer model on the growth of tumor cell clusters and delivered a paper on his findings in Rio de Janeiro at a meeting of the Society for Mathematical Biology.¹⁵

Table 5
Immigration Category for Immigrant Parents of
2011 Intel Science Talent Search Finalists

Employment (H-1B and Later Employer-Sponsorship)	24
International Student*	14
Family-Sponsored	3
Refugee	1

Source: National Foundation for American Policy. Based on interviews conducted with finalists and parents. *Note: International students who stayed in the United States after graduation did so on H-1 or H-1B visas.

THE SOLUTION TO THE GREEN CARD PROBLEM: AN EXEMPTION FROM THE EMPLOYMENT-BASED IMMIGRANT QUOTAS FOR U.S.-EDUCATED GRADUATE STUDENTS IN SCIENCE AND RELATED FIELDS

To help retain skilled foreign nationals long-term in the United States, Congress should consider establishing an exemption from the employment-based green card quotas for individuals who earn a masters degree or higher from a U.S. university in a science, technology, engineering or math (STEM) field. Changing the law requires Congress to make decisions about a variety of issues. However, these issues are straightforward and can be addressed if there is a will to pass legislation in this area.

¹³ U.S. Census Bureau, March 2009. <http://www.census.gov/compendia/statab/2011/tables/11s0040.pdf>.

¹⁴ Daniel Hackman also studied in America, then returned to Iran and later came to America seeking asylum.

¹⁵ Intel Science Talent Search, *Finalists* booklet for 2011, Society for Science & the Public; website for Society for Science & the Public.

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H.R. 2161, a bill authored by Rep. Zoe Lofgren (D-CA), would establish an exemption from the 140,000 annual employment-based green cards for aliens who possess, “a graduate degree at the level of master’s or higher in a field of science, technology, engineering, or mathematics from a United States institution of higher education that has been designated by the Director of the National Science Foundation as a research institution or as otherwise excelling at instruction in such fields.” There are two other requirements listed in the bill: First, “the alien has an offer of employment from a United States employer in a field related to such degree.” Second, “the employer is offering and will offer wages that are at least – (I) the actual wage level paid by the employer to all other individuals with similar experience and qualifications in the same occupational classification; or (II) the prevailing wage level for the occupational classification in the area of employment; whichever is greater, based on the best information available as of the time of filing the petition.”¹⁶

Mitt Romney, a leading contender for the Republican Party’s presidential nomination, has spoken out favorably on such legislation. His campaign policy book states, “As president, Mitt Romney will also work to establish a policy that staples a green card to the diploma of every eligible student visa holder who graduates from one of our universities with an advanced degree in math, science, or engineering.” The book goes on to note, “These graduates are highly skilled, motivated, English-speaking, and integrated into their American communities. Permanent residency would offer them the certainty required to start businesses and drive American innovation. As with the highly skilled visa holders, these new Americans would generate economic ripples that redounded to the benefit of all.”¹⁷

AN EXEMPTION FOR A MASTERS DEGREE AND ABOVE IN A STEM FIELD WOULD MAXIMIZE COMPETITIVE ADVANTAGE TO U.S. COMPANIES

In today’s global economy, attracting and retaining the best talent is key to competing successfully. In any legislation to provide an exemption to highly skilled foreign nationals sponsored for green cards, an important policy question is whether to include masters degrees or only Ph.D.s in such an exemption. Rep. Lofgren’s legislation, earlier bills and Mitt Romney’s policy pronouncements, as well as testimony of leading technology companies, favors a masters degree as the appropriate level for the exemption.

If the purpose is to increase the competitiveness of U.S. employers and prevent talented individuals from leaving the United States to pursue other opportunities, then setting the exemption at masters and above would accomplish that goal. There are a number of reasons why including masters degrees is the best policy.

¹⁶ Section 101 of H.R. 2161.

¹⁷ *Believe in America: Mitt Romney’s Plan for Jobs and Economic Growth*, Romney for President, Inc., 2011, p. 128.

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First, in general, Ph.D.s are not experiencing the long waits for green cards endured by other foreign nationals. “If an employee has a Ph.D. we automatically evaluate the person and position for the Outstanding Researcher (EB-1) category, and many qualify,” according to Warren Leiden, partner, Berry Appleman and Leiden. “But the numbers of Ph.D.s are not great, so the benefit would be minimum, compared with the larger number of professionals with Master’s degrees in STEM.”¹⁸ The EB-1 (employment first preference category) does not have a backlog. However, the EB-2 and EB-3 categories (second and third preferences for employment-based immigrants) are experiencing significant backlogs, generating waits for masters degree holders and others.

Second, the number of Ph.D.s awarded in STEM (science, technology, engineering or mathematics) fields to international students was approximately 13,000 in 2009, compared to 36,606 at the masters level, according to the National Science Foundation (see Tables 3 and 4); about 500 foreign nationals received professional degrees in the medical or other life sciences. These numbers suggest that including only Ph.D.s is likely to have a much smaller impact on the backlogs than including those who earn masters degree as well.

Third, Ph.D.s tend to be oriented more toward working in academia than private sector employment. While it is beneficial for foreign-born Ph.D.s to be employed in university settings, most of the interest in an exemption for science and technology graduates has been in helping U.S. companies become more competitive. “Ph.D.s are generally sought out by those pursuing academic careers but individuals seeking to work in the private sector often pursue masters degrees because that is what industry expects,” said Greg Siskind, partner, Siskind Susser. “In the long run, we will lose the tremendous job creation benefits that come when we welcome masters degree holding STEM professionals.” Siskind argues physicians who receive their graduate medical education in the U.S. should be included in STEM and entitled to the exemption.¹⁹

Fourth, legislative precedent favors a masters degree exemption. A provision of immigration law on H-1B visas, established in 2004, provides for a 20,000 exemption from the annual H-1B quota for foreign nationals who received a masters degree or higher from a U.S. university.²⁰ Legislation that passed the U.S. Senate in 2006 (S. 2611) contained an exemption from employment-based green card quotas for international students with a masters degree or higher from a U.S. university. In FY 2009, about 40 percent of H-1B petitions went to foreign nationals who earned a masters degree, compared to about 13 percent for Ph.D.s.²¹

¹⁸ Interview with Warren Leiden.

¹⁹ Interview with Greg Siskind.

²⁰ L-1 Visa and H-1B Visa Reform Act of 2004.

²¹ *Characteristics of Specialty Occupational Workers (H-1B): Fiscal Year 2009*, Department of Homeland Security, April 15, 2010.

*Keeping the Talent in America***ADDRESSING CONCERNS ABOUT “DIPLOMA MILLS”**

A potentially contentious issue in the debate over an exemption from the employment-based green card cap for international students is from which university advanced degrees would be permitted. Some members of Congress have expressed concern about institutions that would use the change in the law to attract students. Such institutions have been labeled as potential “diploma mills.”

This concern can be addressed in two ways. First, degrees acceptable for the purposes of any new legislation can be limited to educational institutions accredited under the Higher Education Act. Section 101(a) of the Higher Education Act of 1965 (20 U.S.C 1001(a)), which lays out specific definitions for institutions of higher education and addresses accreditation. Rep. Lofgren’s bill also addressed this issue by designating a role for the National Science Foundation in selecting eligible universities.

Second, a provision could be added to any legislation that would limit the exemption to degrees received from U.S. universities that had been in existence during the previous 5 or 7 years. That would thwart any attempt by a “diploma mill” to come into existence simply to take advantage of the new law. In fact, a new entrant to the education field would be placed at a disadvantage, since their graduates would be ineligible for the exemption. There can be a waiver or appeals process if an established university believes it is being unfairly excluded under the law.

FIELDS ELIGIBLE FOR THE EXEMPTION

A way to keep any legislation in this policy area narrow is to restrict the fields eligible for the exemption. One decision is what to do about “social sciences.” Social science fields include psychology, political science, sociology, history, and literature. Removing such fields from the degrees eligible for the exemption would reduce the scope of any legislation and restrict the number of people eligible. In 2009, 23,491 foreign nationals received a professional degree in business and management fields. Excluding this large class of individuals from the exemption to the employment-based green card quotas would keep the numbers eligible within a range likely more palatable to policymakers, even if individuals with such degrees would make for valuable employees.

THE NUMBER OF INDIVIDUALS LIKELY ELIGIBLE FOR EXEMPTION ANNUALLY

Data obtained from the National Science Foundation show in 2009 approximately 50,000 foreign nationals received a masters degree, PhD or professional degree from a U.S. university under the definition of STEM (science, technology, engineering and math). The majority of the degrees were at the masters level. This STEM definition excluded social sciences (history, psychology, literature). If one assumes one dependent for each foreign national, then that would mean an upper bound estimate of about 100,000. One dependent each could be

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a high estimate for a group mostly comprising individuals in their twenties. However, it is likely not all would receive a green card due to a) the requirement of a valid job offer and b) desire to return to their home country. That would reduce the likely annual flow from the STEM exemption to 50,000 to 75,000 (including dependents). The legislation could exclude the dependents of STEM graduates from any count.

OTHER ISSUES

Exempting individuals from the green card quota but insisting they still endure labor certification through the Department of Labor would be a questionable policy decision. It is likely to defeat the intention of the legislation to ensure highly skilled individuals stay in the United States and are processed in a timely manner. Requiring labor certification would likely make it unrealistic for employers to avoid first using an H-1B visa for an international student, given the length of time and uncertainty of the labor certification process. The labor certification process, which requires employers to “test” the labor market in what many businesses consider unrealistic ways mandated by the Department of Labor, can often take one to two years.

“A one-sentence provision of the immigration statute requires, prior to an immigrant being admitted for employment purposes, that the Department of Labor (DOL) certify that there are insufficient workers willing, able, qualified and available for the job, and that the employment will not adversely affect wages and working conditions in the United States,” notes Crystal Williams, executive director, American Immigration Lawyers Association. “The result is that, on top of the realistic recruiting that took place when the company found and hired the foreign national for whom a green card is sought, an expensive and futile new recruitment must be held.”²² Rep. Lofgren’s bill would exempt eligible advanced degree holders in STEM fields from the labor certification requirement. Instead, her bill would require a valid job offer and a wage level equal to or above the prevailing or actual wage paid to similar American professionals, whichever is higher.

Another issue is dual intent for international students. Currently, a prospective international student must establish to a consular officer that the student intends to return to his or her home country after completing academic work in the United States. However, if the law changes to make it easier for international students to be sponsored for green cards, then it would not make sense to deny a visa if a student may intend to work in America after completing school. This conflict in the law is addressed in Rep. Lofgren’s bill by establishing dual intent for international students, similar to H-1B temporary visa holders.

²² *Reforming America’s Regulations and Policies on Employment-Based Immigration*, NFAP Policy Brief, August 2011, pp. 7-8.

IMPACT OF A STEM EXEMPTION ON IMMIGRANT BACKLOGS

A STEM exemption, if done in conjunction with eliminating the per country limit, would have a significant impact on employment-based green card backlogs, depending on the size of the exemption. It would help those with advanced degrees with U.S. universities but also – because of the way visas “fall down” from higher categories – would help other employment-based immigrants as well.

The new policy would address the significant problem in our immigration system of waits for employment-based green cards that today can last 5 years or even decades, depending on the category and country of origin. An exemption from green card quotas for at least 50,000 STEM graduates annually from U.S. universities would make green cards immediately available to many highly skilled foreign nationals. That is compared to currently projected waits for Indian nationals of 6 years or more in the employment-based second preference (EB-2) category and up to 70 years for Indians in the EB-3 (employment-based third preference) category if sponsored today for an employment-based green card.

**Table 6
Impact of a STEM Exemption on Employment-Based Immigrant Wait Times**

	Eliminating Per Country Limit and Creating 50K STEM Exemption	Eliminating Per Country and Creating 25K STEM Exemption
EB-2 Category	Would eliminate backlog and make category current within 3 years	Would eliminate backlog and make category current within 4 years
EB-3 Category	Would eliminate backlog and make category current within 10 years	Would eliminate backlog and make category current within 20 years

Source: National Foundation for American Policy; U.S. Department of State; Office of Immigration Statistics, U.S. Department of Homeland Security.

In addition, an exemption of at least 50,000 for STEM graduates would eliminate the backlog in the employment-based second preference (EB-2) and make the category current within three years. It would also eliminate the employment-based third preference (EB-3) backlog and potentially make the category current within 10 years. This is a conservative estimate that assumes the annual flow of sponsored individuals and dependents matches the current quota for EB-2 (50,000) and EB-3 (35,040). To the extent the annual flow is higher, then the impact of a STEM exemption on backlogs and wait times could be less.

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An exemption of 25,000 a year would help STEM graduates directly and likely also eliminate the backlog and make the EB-2 category current in 4 years. In the EB-3 (employment-based third preference) category, an exemption of 25,000 would likely eliminate the backlog and make the EB-3 category current in 20 years. Wait times would lessen over the years under both a 25,000 or 50,000 exemption. A caveat to these estimates is that if demand rises whether because of the economy or the exemption itself, then the reduction in the backlogs and wait times would be less.²³

ADDRESSING CONCERNS ABOUT U.S. STUDENTS

Some may argue against an exemption from green card quotas for international students with a graduate degree in STEM fields out of concern for U.S. students. Such concerns would be misplaced. Research shows there is no evidence that U.S. students are not able to attend engineering or other graduate-level programs in the United States due to the presence of international students. While the enrollment of international students has increased over the past few decades, so has the enrollment of U.S. citizens and permanent residents.

Examining all U.S. graduate programs from 1982 through 1995, Mark Regets of the National Science Foundation found no sign that U.S. citizens were displaced in graduate programs by international students. Increases in the number of international students in a graduate department were associated with increases, not decreases, in the enrollment of U.S. citizens and permanent residents – about one extra U.S. student for every three extra international students. A rise in enrollment for one group that is associated with enrollment increases for all groups is “a result inconsistent with displacement,” notes Regets.²⁴

Other research has produced similar conclusions. Examining degrees granted over a period of years (1965-2001), economists Keith Maskus, Aaditya Mattoo, and Granaraj Chellaraj found, “The number of Ph.D.s granted to undergraduates of U.S. institutions, most of whom were U.S. citizens, did not change much during this period, while there was a substantial growth in the number of foreign bachelor’s graduates obtaining U.S. doctorates. Thus the change in proportion is mostly due to the expansion of Ph.D. programs, with a majority of the new slots being taken for foreign students rather than through substitution.”²⁵

²³ For more information on immigration backlogs see Stuart Anderson, *Waiting and More Waiting: America’s Family and Employment-Based Immigration System*, NFAP Policy Brief, October 2011.

²⁴ Mark Regets, “Research Issues in the International Migration of Highly Skilled Workers: A Perspective with Data from the United States,” Working Paper, SRS 07-203, June 2007, p. 11.

²⁵ Chellaraj, Maskus, and Mattoo, p. 9.

CONCLUSION

Many international students would like the opportunity to use the knowledge obtained at U.S. universities to work for America's leading companies. A Duke University and University of California, Berkeley survey of 1,200 international students found a significant percentage were concerned about obtaining temporary work visas and green cards. "The vast majority of foreign students, and 85 percent of Indians and Chinese and 72 percent of Europeans are concerned about obtaining work visas" in America, according to the survey. A surprisingly high percentage were both aware of and concerned about the difficulties in obtaining green cards to stay permanently in America – 55 percent of Chinese, 53 percent of Europeans and 38 percent of Indian students expressed concern about obtaining permanent residence.²⁶ The question is whether U.S. policy will match both the aspirations of such individuals to live the American Dream, and the desire of U.S. companies to combine the best American talent with the best foreign-born talent to compete in the 21st century global economy.

²⁶ Vivek Wadhwa, AnnaLee Saxenian, Richard Freeman, and Alex Salkever, *Losing the World's Best and Brightest: America's New Immigrant Entrepreneurs, Part V*, Duke University, U.C.-Berkeley, and Ewing Marion Kauffman Foundation, March 2009, p. 3. The research is available at: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1362012.

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