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"STEM" THE TIDE: SHOULD AMERICA TRY TO PREVENT AN EXODUS OF FOREIGN GRADUATES OF U.S. UNIVERSITIES WITH ADVANCED SCIENCE DEGREES?

HEARING

BEFORE THE

SUBCOMMITTEE ON
IMMIGRATION POLICY AND ENFORCEMENT

OF THE

COMMITTEE ON THE JUDICIARY
HOUSE OF REPRESENTATIVES

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"STEM" THE TIDE: SHOULD AMERICA TRY TO PREVENT AN EXODUS OF FOREIGN GRADUATES OF U.S. UNIVERSITIES WITH ADVANCED SCIENCE DEGREES?

WEDNESDAY, OCTOBER 5, 2011

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON IMMIGRATION
POLICY AND ENFORCEMENT,
COMMITTEE ON THE JUDICIARY,
Washington, DC.

The Subcommittee met, pursuant to call, at 1:52 p.m., in room 2141, Rayburn House Office Building, the Honorable Elton Gallegly (Chairman of the Subcommittee) presiding.

Present: Representatives Gallegly, Smith, King, Poe, Gowdy, Ross, Lofgren, Conyers, Jackson Lee, and Waters.

Also Present: Representative Griffin.

Staff Present: (Majority) George Fishman, Subcommittee Chief Counsel; Marian White, Clerk; and (Minority) Hunter Hammill, USCIS Detailee.

Mr. GALLEGLY. The hearing will come to order.

America has many of the finest universities in the world. Talented students from around the globe seek to come here to pursue their studies. The State Department issued an all-time high of over 400,000 new student visas in the year 2010. Foreign students can enrich our universities, and after they graduate many stay here as workers to help American businesses grow.

Among the cream of the crop are those foreign students who receive advanced degrees in what are known as STEM fields: science, technology, engineering, and math. One of our witnesses today, Darla Whitaker of Texas Instruments, will testify as to how these foreign STEM graduates keep American companies on the cutting edge. They can also give America a competitive advantage. A number of studies have found a remarkable level of entrepreneurship among immigrant scientists and engineers.

When foreign STEM students graduate, many want to stay in the U.S., at least temporarily. However, according to a survey by Vivek Wadhwa, who will be testifying today, most students who would like to stay are concerned about finding jobs in the U.S. and obtaining work visas. Their anxiety is surely due to our depressed economy, the shortage of H-1B visas during boom times, and the waiting list for employment-based green cards, which seems to grow during good times and bad.

This issue raises some important questions, including: Should we desire that all these foreign graduates remain in the U.S.? Should we encourage them to stay by enacting visa reform? These are the subjects of today's hearings.

Mr. Wadhwa worries that the departure of these foreign graduates would represent a significant loss for the U.S. science and engineering workforce, in which immigrants have played increasingly larger roles over the last three decades.

However, one thing to keep in mind is how American students are impacted by our immigration policies. Another of our witnesses today, Lindsay Lowell, worries that depressed wages and discouraged workers result if supply outstrips demand. He writes that "highly qualified American students may choose a non-STEM job because it pays better and offers a more stable professional career."

And another of today's witnesses, Barmak Nassirian, worries that a systemic threat to academic integrity has emerged in the form of questionable schools that have managed to establish eligibility for participation in Federal student aid as collegiate institutions. Could such schools take advantage of any decision by Congress to increase the availability of visas or foreign students graduating with STEM degrees?

I look forward to hearing from our witnesses today and their diverse and valuable perspectives in today's hearing.

And, with that, I would yield to the Ranking Member, my friend from California, Ms. Lofgren.

Ms. LOFGREN. Thank you, Mr. Chairman.

Without a doubt, our country came to be the greatest on the planet in less than 200 years due to its unique ability to attract the best and brightest minds from around the world and have them become Americans. The fact that we became the strongest economic and military power on Earth was not fate; it wasn't an entitlement; it wasn't just given to us. It was earned. It was earned by opening our arms to the world's political and intellectual refugees, by giving them the freedom to take risks and to own their own accomplishments, and by having a national identity that welcomed the "other" to quickly see himself or herself as one of us, as American.

These national qualities ensured that we were on the right side of the global brain drain that has been occurring for the last two centuries. But today we find ourselves on the other side of the drain. While we once asked the brightest minds in the world to come and make their homes here, we now turn them away. Having educated and trained the world's best students in our universities, we no longer welcome them to enrich this Nation.

To those immigrants who want to start businesses in the United States and create jobs here, we tell you to go home. Our system has no visas for you; you are not welcome, so please start your business someplace else.

To the growing number of immigrants with advanced degrees from U.S. universities in science, technology, engineering, and mathematics who want to innovate and incubate new ideas here, we say that you, too, are not welcome. Our system is out of green cards for the next 10 to 70 years; you will have to wait a long time if you want to make a life here.

The result has been a reverse brain drain, and we have reason to fear it.

Over the last 30 years, advanced degrees issued by U.S. universities in STEM fields have been increasingly earned by foreign students. In 2009, half to two-thirds of all Ph.D.s in physics, computer science, electrical engineering, mechanical engineering, and chemical engineering were earned by foreign students. And at the master's degree level, the numbers are similar, with almost half of all engineering and computer science degrees earned by foreign students.

And, until recently, the foreign students I just mentioned have had a profound impact on the U.S. economy and job creation in America. Immigrants were responsible for one-quarter of all engineering and technology startups created in the United States between 1995 and 2005. The vast majority of these immigrants had advanced STEM degrees, mainly from United States universities. More than half of the startups in Silicon Valley, my home, had immigrant founders.

Immigrants were named as inventors or co-inventors in one-quarter of international patent applications filed from our country in 2006. Due partly to immigration, our country, with just 5 percent of world's population, employs nearly one-third of the world's scientific and engineering researchers, accounts for 40 percent of all R&D spending, and publishes 35 percent of all science and engineering articles.

This leadership in science and technology, according to the National Academies, has translated into rising standards of living for all Americans, with technology improvements accounting for up to half of GDP growth and at least two-thirds of productivity growth since 1946. This is because, according to the Academies, "while only 4 percent of the Nation's workforce is composed of scientists and engineers, this group disproportionately creates jobs for the other 96 percent."

Let's throw another statistic into the mix. A recent report by the Partnership for a New American Economy, a bipartisan group of businesses founded by New York City Mayor Michael Bloomberg and the News Corporation's CEO, Rupert Murdoch, found that more than 40 percent of Fortune 500 companies were founded by immigrants or their children. These companies currently generate $4.2 trillion in revenues each year.

Now, all these statistics make clear that we must find a way to keep more of these minds in America. In 2005, at the request of Congress, the National Academies issued a very sobering report on the country's eroding economic leadership in science and technology. The Academies reviewed trends across the globe and found that, due in part to restrictive immigration policies, the scientific and technological building blocks critical to our economic leadership are eroding at a time when many other nations are gathering strength. According to the report, although many people assume that the U.S. will always be a world leader in science and technology, this may not continue to be the case, inasmuch as great minds and ideas exist throughout the world. "We fear the abruptness," they said, "with which a lead in science and technology can

be lost and the difficulty of recovering the lead, once lost—if, indeed, it can be regained at all."

Earlier this year, I introduced H.R. 2161, the IDEA Act of 2011, to attempt to solve these problems in a holistic fashion. The bill seeks to find the right balance of increasing and improving the education of American students in STEM fields and providing green cards to foreign-born innovators, entrepreneurs, and job creators who will help keep America at the top of the heap in science and technology. I only raise the IDEA Act to show that we can solve these problems in a way that creates jobs in America, protects American students and workers, and incentivizes them to increasingly enter STEM fields for the jobs of tomorrow.

America's great advantage in the global economy has long been our extraordinary ability to innovate and incubate new ideas and technologies. And this history of innovation was built both by harnessing native-born, homegrown talent and fostering and welcoming the best and brightest immigrants from around the world who want to come and be Americans here. We must find a way to regain that balance.

And I yield back the balance of my time, Mr. Chairman.

Mr. GALLEGLY. I thank the gentlelady.

The gentleman from Texas, the Chairman of the full Committee, Mr. Smith.

Mr. SMITH. Thank you, Mr. Chairman.

When it comes to STEM fields—science, technology, engineering, and math—American universities truly set the gold standard. STEM graduates of our universities are behind many of the innovations and new businesses that are part of our present and future economic growth.

Talented students from around the world contribute to the graduate STEM programs of our universities. In 2009, foreign students received nearly 4 out of every 10 master's degrees awarded in STEM fields and about the same percentage of all doctorates.

These students have the potential to come up with an invention that could save thousands of lives or jump-start a whole new industry. They also have the ability to start a company that could provide jobs to tens of thousands of American workers.

But what happens to these foreign students after they graduate? They are in great demand by the universities themselves and by American industries. That is why more than 6 out of every 10 science and engineering doctoral graduates from 2002 were still here in 2007.

However, our immigration system does not always put American interests first. We have the most generous level of legal immigration in the world. Yet we select only 5 percent of our immigrants based on the skills and education they bring to America.

Many people make a compelling argument: Why don't we simply offer a green card to any foreign student who graduates from a U.S. university with an advanced STEM degree and wants to stay in the U.S.? After all, why would we want to educate scientists and engineers here and then send them home to work for our competitors?

But we should keep several points in mind. First, all graduate degrees are not the same. It takes an average of over 7 years in

graduate school for STEM students to receive a doctorate. A master's can be earned in 2 years.

And when it comes to the proportion of persons who have applied for patents, those with doctorates far outpace those with bachelor's and master's degrees. Sixteen percent of scientists and engineers with doctorates working in STEM fields have applied for patents, compared to only 2 percent with bachelor's degrees and 5 percent with master's degrees.

Second, a visa "pot of gold" could create an incentive for schools to aim solely to attract tuition-paying foreign students with the lure of a green card.

As the former Deputy Assistant Secretary for Visa Services at the State Department has warned, "A school in the United States can be found for even the poorest academic achiever. Unfortunately, schools that actively recruit foreign students for primarily economic reasons and without regard to their qualifications or intentions, may encourage such high-risk underachievers to seek student-visa status as a ticket into the United States."

And the Center for Technology Innovation at Brookings warns against, "inducing the enrollment of poor-quality foreign students in U.S. higher education institutions simply to obtain green cards."

However, the choice between sending all graduates home and automatically issuing visas to students are not the only options available. In 2009, foreign students earned about 11,000 doctorate degrees in STEM fields from U.S universities. With tweaks to our immigration system, we can accommodate those graduates whom American universities and businesses most desire and who are most able to contribute to our economy.

Thank you, Mr. Chairman. I yield back.

Mr. GALLEGLY. I thank the gentleman.

We have a very distinguished panel of witnesses today.

Each of the witnesses' written statements will be entered into the record in its entirety. I would respectfully request that each of the witnesses summarize his or her testimony in 5 minutes so we can get on with the questions and answers.

Sorry that we got a little bit late start. We had an overlap with a markup in another Committee, and that is unavoidable sometimes, unfortunately.

Our first witness today is Darla Whitaker. Ms. Whitaker is senior vice president responsible for worldwide human resources at Texas Instruments, whose incorporated headquarters are in Dallas, Texas. Ms. Whitaker has held various positions in human resources for Texas Instruments. Prior to her current assignment, Ms. Whitaker was vice president and manager of compensation and human resource systems and services for the company. She is a graduate of Southern Methodist University and earned an MBA from the University of Dallas.

Our second witness is Mr. Vivek Wadhwa. He is a visiting scholar at the University of California-Berkley, a senior research associate at Harvard Law School, and director of research at the Center for Entrepreneurship and Research Commercialization at Duke University. He is also a faculty member and advisor for Singularity University and columnist for The Washington Post and Bloomberg Business Week. He received his bachelor's degree from the Univer-

sity of Canberra in Australia and received his MBA from New York University's Stern School of Business.

Our third witness, Dr. Lindsay Lowell, is director of policy studies for the Institute for the Study of International Migration at Georgetown University. He was previously director of research at the congressionally appointed Commission on Immigration Reform. He was also assistant director for the Mexico/U.S. Binational Study of Migration. His research interests center on immigration policy, labor force, economic development, and the global mobility of the highly skilled. He received his Ph.D. In sociology as a demographer for Brown University.

And our fourth witness, Mr. Barmak Nassirian, is associate executive director of the American Association of Collegiate Registrars and Admissions Officers, a nonprofit association of more than 2,300 institutions of higher education. Mr. Nassirian has been active in higher education policy for nearly two decades, focusing on access and financing issues, educational privacy, and Federal regulations.

So, with that, we will start our testimony from our distinguished witnesses with Ms. Whitaker.

Welcome.

TESTIMONY OF DARLA WHITAKER, SENIOR VICE PRESIDENT FOR WORLDWIDE HUMAN RESOURCES, TEXAS INSTRUMENTS

Ms. WHITAKER. Thank you, Chairman Gallegly, Ranking Member Lofgren, Chairman Smith, and Members of the Subcommittee. I am Darla Whitaker. I am senior vice president of human resources for Texas Instruments. Thank you for inviting me to speak today about how best to retain the talent of U.S. university graduates holding advanced degrees in science, technology, engineering, and math—the STEM fields.

While many people think of calculators when they think of TI, our primary business is to design and manufacture semiconductors or chips. We are, in fact, the world's third-largest semiconductor company. Texas Instruments is a global company with operations in more than 30 countries and approximately 34,500 employees worldwide and 10,400 in Texas. And with our recent acquisition of National Semiconductor, we now have a bigger footprint in the Silicon Valley as well.

Innovation is the cornerstone of our company. Over the last 3 years alone, we have invested $5 billion in research and development. Texas Instruments has over 60,000 products and releases approximately 900 new products each year. And our engineers have developed more than 38,000 patents issued worldwide.

TI is fundamentally a company of engineers and scientists. Electrical engineers, in particular, are the lifeblood of our industry; they are our innovators. To find those innovators, TI recruits heavily at top U.S. universities, and our goal is to hire and retain the best engineers and innovators from U.S. universities. We choose the best, the brightest, and the most creative engineering graduates.

In the past two decades, we have seen some alarming trends. While the vast majority of BSEEs graduating from U.S. universities are American citizens, the numbers are significantly different at the graduate level. The majority of those graduating from U.S.

universities with advanced degrees in electrical engineering are foreign nationals. Of EEs graduating from U.S. universities with master's degrees, 55 percent are foreign nationals, and with Ph.D.s it is 63 percent.

TI doesn't choose this pool of graduates, but we do recruit from it. And we have also provided you some charts so you can see with this information just the breadth of the challenge that we face.

We want innovators to join our company, not on a temporary basis, but as permanent employees to provide long-term value to our shareholders, our customers, and the community. The immigration system allocates insufficient numbers to allow engineers and innovators to secure green cards in a reasonable amount of time. Some of our employees have to wait a decade to get their green cards.

This is not sustainable. It hurts our company and our industry, and it places burdens and stresses on our employees. It harms American competitiveness, as other countries move to provide easier paths to permanent residents for STEM graduates.

But it is also easily fixable. By modestly increasing green card numbers to allow employers to sponsor graduates of U.S. universities holding advanced degrees in STEM fields, Congress would vastly improve American competitiveness and secure our place as the world's innovation leader. This view is also shared by the IEEE-USA, the Institute of Electrical and Electronic Engineers.

It is imperative that the increase not only include Ph.D. graduates but master's STEM graduates as well. Among our foreign nationals who would qualify under a STEM bill, the ratio of master's level engineers to Ph.D. engineers is more than four to one. While more Ph.D.s may have their names on our 38,000 patents, much of the work is done in collaboration with our engineers with master's degrees.

And many master's degrees holders generate patents on their own. For example, Sameer Pendharkar, a fellow in our Analog Technology Development group, has a master's in electrical engineering, and he has contributed 50 patents to TI. A few years ago, he was recognized by The Academy of Medicine, Engineering, and Science of Texas as a recipient of the prestigious Edith and Peter O'Donnell Award, established to acknowledge achievements by young researchers in these disciplines. And we have many other examples.

TI is focused on increasing the pipeline of American-born students receiving engineering degrees. That is why we are so passionate about university funding and STEM education. STEM education is our top philanthropic priority. In the past 5 years, we have invested more than $150 million through TI and the TI Foundation to support education in the K-through-12 and university levels. Our focus is on improving student achievement, teacher effectiveness, and attracting more and under-represented groups to STEM fields. I have submitted a more comprehensive summary of our activities in this area for the record.

At TI, we know that having the best innovators is the foundation of our success and the success of the entire semiconductor industry. Thank you for your time and your attention and for the oppor-

tunity to speak today on this important subject, and I look forward to answering any questions that you have.

[The prepared statement of Ms. Whitaker follows:]

Testimony of Darla Whitaker, Senior Vice President, Worldwide Human Resources, Texas Instruments

on behalf of the

Semiconductor Industry Association

before the

US House of Representatives Committee on the Judiciary, Subcommittee on Immigration
Hearing on:

"STEM the Tide: Should America Try to Prevent an Exodus of Foreign Graduates of U.S. Universities with Advanced Science Degrees?"

Chairman Gallegly, Ranking Member Lofgren, Chairman Smith, Ranking Member Conyers, Members of the subcommittee, I am Darla Whitaker, Senior Vice President for Worldwide Human Resources at Texas Instruments. I am also representing the views of the Semiconductor Industry Association which is a member of Compete America. Thank you for inviting me to speak to you today about how best to retain the talent of U.S. university graduates holding advanced degrees in Science, Technology, Engineering and Math (STEM) fields.

Over the course of my testimony I plan to tell you a bit about TI, our hiring practices and needs and suggest some ways in which Congress can help ensure that companies like TI can have access to the best minds emerging from US universities.

About Texas Instruments

While many people think of calculators when they think of TI, our primary business is to design and manufacture semiconductors –or chips. We are, in fact, the world's 3rd largest semiconductor company. Chips are the engines, "the building blocks" if you will, of all electronic devices and machines. Semiconductors have fundamentally changed the way people around the globe work, learn and play. They have driven unprecedented productivity across every sector of the economy and have enabled the development of numerous new industries over the last 50 years.

Chips are in every electronic product, including computers, appliances and automobiles, agricultural machinery and aircraft. They are the "smart" in smart grids, appliances, and smart phones. We are driving solutions to some of the world's most pressing challenges in energy efficiency, heath care and national and homeland security.

in more than 30 countries and approximately 34,500 employees worldwide. In Texas, we have 10,400 employees. And with our recent acquisition of National Semiconductor, we now have a bigger footprint in Silicon Valley, as well.

Innovation is the cornerstone of our company. Founded in the 1930s as a geophysical exploration company that took used seismic signal processing technology to detect oil deposits, we have reinvented ourselves numerous times over the course of our history.

Over the last three years alone, we've invested $5 billion in research and development. TI's comprehensive innovation strategy includes funding and collaborating with universities and industry consortia, incubating breakthrough ideas in our own Kilby Labs, executing competitive roadmaps within TI's business units and specialized labs, and developing world-class manufacturing technologies.

Texas Instruments has over 60,000 products and releases about 900 new products per year. Our engineers have developed more than 38,000 patents issued worldwide. More than 1,200 of those patents were issued in 2010.

Hiring at Texas Instruments

Innovation requires innovators. TI is fundamentally a company of engineers and scientists. Electrical engineers, in particular, are the life blood of our industry whether they are designing, manufacturing or selling our products.

To find those innovators, TI recruits heavily at top US engineering universities. We recruit the best engineering students, looking not only at their grades, but also to their creativity, community involvement and leadership skills.

have other job offers, often from our competitors.

To find the best students, we work hard to develop relationships with top engineering universities. We build ties with student organizations, attend campus career fairs, and offer highly competitive internships, and support university research in partnership with Federal and State funding. We have an active co-op program that provides summer jobs to engineering students to help us identify top talent early.

TI has recently increased the number of engineering interns by nearly 60 percent. These candidates get to stand side-by-side with TI's best engineers and innovators and do hands-on, real world engineering. Our internship program also gives TI the chance to evaluate these rising talents and see if they have the creativity to be TI innovators. Currently about 40 percent of our new engineering hires now come from our internship program and we hope to move that up to 60-75 percent.

Texas Instruments' goal is to hire the best engineers and innovators from U.S. universities and to retain them. We do not choose where those engineers were born or what their citizenship is. We choose the best, the brightest and the most creative engineering graduates.

But as this Committee knows, in the past two decades we have seen some alarming trends. While the vast majority of BSEEs graduating from U.S. universities are American citizens, the numbers are significantly different at the graduate level.

The majority of those graduating from U.S. universities with advanced degrees in electrical engineering (EE) are foreign nationals. Of EEs graduating from U.S. universities with Master's degrees, 55% are foreign nationals. Of PhDs, 63% are.

TI doesn't choose the pool of graduates, we recruit from it.

engineering, it is not. Recent Labor Department statistics place the unemployment rate for electrical and electronics engineers at 3.7%. The competition for STEM talent is tight.

What Congress Can Do

TI hires at all spectrums of the university engineering education continuum – from associates at community colleges to PhDs. It is for these upper level degrees that we have regularly found ourselves coming to Congress to seek help in enabling us to hire this highly educated talent.

We want these individuals to join our company, not on a temporary basis, but as permanent employees to provide long term value to our shareholders, customers and community. The current system in which they must first obtain an H-1B visa and then wait for years – sometimes up to a decade for a green card is frustrating for them, limits employer flexibility, and diminishes productivity. While our employees wait – and wait – for their green cards, their ability to be promoted or change jobs is limited.

The current immigration system allocates insufficient numbers to allow engineers and innovators to get green cards in a reasonable amount of time.

The current system also places an arbitrary cap that limits the number of immigrants from any one country to seven percent of the total number of immigrant visas issued each year. This "per country limit" has led to long wait times for our employees – reaching to more than nine years for Indian nationals in the third employment preference.

This is not sustainable. It hurts our company and our industry. It places unnecessary burdens and stresses on our employees. It harms American competiveness, even as other countries move to provide easier paths to permanent residence for STEM graduates.

We believe that a more direct path to obtaining a green card is optimal for these advanced degree innovators. A bill to increase the number of green cards available to graduates of U.S. universities holding advanced degrees in STEM would alleviate the long backlogs our innovators are stuck in, and would allow TI and the semiconductor industry to recruit and retain top talent more competitively.

It is imperative that the increase include not only PhD graduates, but Master's STEM graduates, as well. MSEE's are critical to innovation. While more PhDs may have their names on our 38,000 patents, much of the work is done in collaboration with our engineers with Master's degrees. And others are producing patents on their own.

For example, Sameer Pendharkar, a TI Fellow in our Analog Technology Development group has a Masters in electrical engineering and has produced over 50 patents for TI. Two years ago, he was recognized by The Academy of Medicine, Engineering, and Science of Texas (TAMEST) as the recipient of their prestigious Edith and Peter O'Donnell Award, established to acknowledge achievements by young researchers in these disciplines. We have many other examples.

Among our foreign nationals who would qualify under a STEM bill for employees who graduate from U.S. universities with advanced degrees, the ratio of Master's level engineers to PhD engineers is at least four to one.

By modestly increasing green card numbers to allow employers to sponsor graduates of U.S. universities holding advanced degrees in STEM fields, Congress would vastly improve American competitiveness and secure our place as the world's innovation leader. This narrowly drawn, targeted approach will give employers like TI a more effective, timely way to sponsor

and creating a better future.

We also support H.R. 3012, the Fairness for High-Skilled Immigrants Act, which was recently introduced by Representative Chaffetz. That bill would eliminate the per country limit over a three year period and help rationalize the green card system.

We strongly encourage the Congress to urgently take up and pass legislation that would allow employers like Texas Instruments to more competitively recruit and retain graduates of U.S. universities holding advanced STEM degrees.

While we seek these changes, TI is very focused on increasing the pipeline of American born students receiving engineering degrees. That is why we are so passionate about university research funding and STEM education.

STEM education is our top philanthropic priority. In the past five years we've invested more than $150 million through TI and the TI foundation to support education at the K-12 and university levels. In addition, TI's employees invested countless volunteer hours in advancing STEM education in local schools and civic organizations. Our aim is to build an ecosystem of innovation by supporting student achievement, teacher effectiveness, and diversity, in STEM.

Among the initiatives we've undertaken is "Visioneering," a unique, annual event held at Southern Methodist University (SMU) during National Engineers Week. Since 2001, Visioneering has brought together approximately 9,000 middle school students and teachers, working engineers and innovators to explore how and why engineering makes a difference in the world around us.

We've also supported The Advanced Placement Incentive program that has had extraordinary results in increasing the number of underrepresented students taking and passing

the National Society of Black Engineers (NSBE), the Urban League, and, through the Women of TI Fund, High-Tech High Heels, to support and increase gender equity and diversity, along with innovation in STEM fields.

The point is this, engineering, math and science skills are critical to innovating and competing globally, and we need a well-educated technical workforce. I have provided a more complete listing of our activities in this area for the record.

At TI, we know that, to be successful and compete in our global market, we need the best, brightest and most innovative engineers. It's the foundation of our success and the success of the entire semiconductor industry.

Thank you for your time and attention, and for the opportunity to speak today on this important subject. I look forward to answering any questions you may have.

ATTACHMENT

K-12 Education

TEXAS INSTRUMENTS

About TI's and the TI Foundation's support of education:

K-12 to university
In the past five years alone, TI and the TI Foundation have invested more than $150 million to support education. Higher education received about 80% of these funds, with approximately 70% focused on research. TI's support extends beyond funding but also leverages our employees as volunteers. In 2010, TI employees invested volunteer hours, as well as personal funds totaling $900,000 that was matched by the TI Foundation. These combined investments drive the long-term innovation required to create new, life-changing technologies. By educating students and equipping educators, TI is enabling their use of the latest technology and bringing their innovations to reality.

TI is building an ecosystem of innovation through support of STEM education because:
- The future depends on it
- Math and science skills are critical to innovating and competing globally
- Educators need resources to teach and students to learn
- We need a well-educated technical workforce

TI is building an ecosystem of innovation by supporting student achievement, teacher effectiveness, and diversity, in science, technology, engineering and math (STEM).

Student Achievement
TI focuses on piquing student interest and building excitement for technology-related degrees and careers. We support programs and collaborate with organizations that impact the most students. The primary programs TI and the TI Foundation supported in 2010 include:

Advanced Placement Incentive Program(APIP)
The APIP is a national model for the National Math and Science Initiative and encourages students to take more rigorous, college-level coursework in high school. The TI Foundation funds incentives for both teachers and students in the Dallas Independent School District (Dallas ISD) and in 2010, they posted the largest annual increase in qualifying math, science and English scores (up 16 percent) over 2009. Since the program began in 1996, there has been almost 1000% increase in the number of students passing the exams. The TI Foundation gave a three-year $1.5 million grant to help expand the program to all 32 Dallas high schools and helped the district pass a milestone of 10,000 student participants.

Robotics competitions
Robotics competitions excite students about engineering and TI supports two of the top programs thru funding, in-kind donations and volunteers. Texas BEST (Boosting Engineering, Science and Technology) was founded 18 years ago by two TI employees. To date, TI has invested $530,000 in Texas BEST and reached about 100,000 students. TI is one of 12 crown suppliers who contribute more than $500,000 in donated goods and services annually to FIRST® (For Inspiration and Recognition of Science and Technology) robotics competition, reaching more than 45,000 students worldwide.

TI-Math Forward™
TI-Math Forward has grown to help thousands of middle and high school students nationwide build confidence and achievement in math. Created in 2005 and launched at a junior high in the Richardson Independent School District, today it has grown to more than 40 schools across eight states to help thousands of middle and high school students. The program combines instruction, professional development, curriculum integration and classroom technology.

Visioneering
TI sponsors this unique, one-day event at Southern Methodist University (SMU) during National Engineers Week, which brings together middle school students and teachers, working engineers and innovators to explore the ways engineering makes a difference in the world around us. Since 2001, approximately 9,000 students, teachers, mentors and industry volunteers have participated. More than 1,110 students, teachers and volunteers attended Visioneering in 2010.

Teacher effectiveness
Increasing the number of math- and science-capable students equipped to succeed in STEM disciplines and careers begins with prepared teachers. The primary programs TI and the TI Foundation supported in 2010 include:

Innovations in STEM Teaching Awards
The TI Foundation has invested $500,000 since 2006, to back effective teaching and help retain excellent teachers in Dallas, Plano and Richardson ISDs. The Innovations in STEM Teaching Awards recognize 10 instructors annually at the secondary level who enhance student achievement and increase interest in high school classrooms. Each principal-nominated honoree receives a $10,000 award ($5,000 cash and $5,000 for education technology and/or professional development).

Laying the Foundation (LTF)
Through the TI Foundation's $1.5 million multiyear grant to LTF, 159 teachers were trained in 2010 in the Dallas, Garland and Richardson (Texas) school districts. The training is designed to improve strategies for teaching pre-AP-level coursework and ensuring students are prepared for the rigor of AP courses.

TI Support in the U.S.

- TI joins the Change the Equation (CTEq) national network to support effective, replicable STEM programs that can drive systemic change
- Junior League of Dallas Grants for Innovative Teaching: to encourage and support excellence in teaching by awarding grants up to $1,500 to Dallas-area teachers for special and innovative projects that otherwise would not be provided for in school budgets
- National Archives Experience DocsTeach to train teachers on using the Archives' documents in the classroom to engage students not only in history and civics lessons but also in using technology.
- Dallas Museum of Nature and Science and Sci-Tech Discovery Center, Math Midway exhibit to bring hands-on math to students and families

Last updated June 2011

Teach For America
The TI Foundation granted $750,000 to Teach For America from 2010-2012, to expand educational opportunities in math and science in North Texas public schools. The program recruits, trains and supports top college graduates who commit to teach for two years in underserved public schools and become lifelong leaders in the movement for educational equity. With TI's support, 11 new math and science teachers impacted more than 1,000 students each day in 2010.

Teachers Teaching with Technology (T^3)
TI's Education Technology business sponsors the T^3 program which includes both face-to-face and online professional development institutes. Each year, TI convenes a conference that brings math and science educators, who share best practices and how to integrate technology into the classroom to increase student achievement. In 2010, the 22nd annual TI teacher conference attracted more than 2,000 educators. Since 1986, T^3 has reached more than 100,000 teachers worldwide

UTeach
The TI Foundation has awarded $1.5M for existing UTeach programs at the University of North Texas, the University of Texas at Dallas and the University of Texas at Arlington in 2010, to continue preparing college undergraduates to become secondary math and science teachers. In 2010, 192 students enrolled in the program and nearly 250 are expected to begin in 2011. At UT Dallas the number of students seeking math and science certification has increased 200%.

Ethnic and gender equity
TI supports educational opportunities for underrepresented women and minorities to foster success in engineering and science. The primary programs we supported in 2010 include:

National Society of Black Engineers (NSBE)
In addition to providing nearly $450,000 to NSBE over the past seven years, TI has supported tutorial programs, group study sessions, junior high/high school outreach programs, technical seminars and workshops, and professional chapters. We also have contributed to the NSBE national magazine and participated in NSBE national and regional conventions for more than 20 years.

Texas Prefreshman Engineering Program (TexPREP)
The TI Foundation completed a three-year $310,000 grant to the Dallas-based (TexPREP) which identifies achieving middle and high school students (>80% under-represented minorities) with an interest in STEM and strengthens their potential for related careers and engages them in summer learning programs. To date, 99.9% graduate from high school, 99% attend college and 84% graduate from collage.

Urban League
TI's investments of the Urban League of Greater Dallas sponsored a youth leadership conference for high school students interested in STEM degrees or careers, helped transport nearly 100 Dallas-area youth to three college campuses in Georgia to learn about admissions, financial aid, campus living and diversity on college campuses, and developed a career exploration/college preparatory symposium for high school students held at the TI headquarters.

High-Tech High Heels
A decade ago, a group of TI women pooled their personal contributions to create the Women of TI Fund to increase the number of girls graduating from high school and pursuing STEM degree programs. The group developed programs to deliver gender equity training programs, dispel STEM stereotypes through counselor workshops grow girls' confidence through summer physics camps and increase enrollment in Advanced Placement (AP) courses and passage rate on AP tests.

On-line resources
PursueEngineering.com offers high school students and teachers information about engineering pathways and the importance of math and science.

UnleashTI.com targets college students, includes TI videos, career information, and student testimonials about the types of degrees needed to pursue engineering as a career.

Visit ti.com/education for a complete inventory of our education support.

Mr. GALLEGLY. Thank you, Ms. Whitaker.
Mr. Wadhwa?

TESTIMONY OF VIVEK WADHWA, DIRECTOR OF RESEARCH, CENTER FOR ENTREPRENEURSHIP AND RESEARCH COMMERCIALIZATION

Mr. WADHWA. Thank you for the opportunity to be here.

I am an Indian immigrant who arrived to the United States in 1980. I came here to study; that is what my motivation was to come to America. Eventually, I ended up catching the entrepreneurial bug that infects many Americans and became an entrepreneur. I founded two companies which employed hundreds of Americans and made American industry more productive.

Later in my career, I decided to switch gears and become an academic. This was my way of giving back to this great country.

Mr. GALLEGLY. I am sorry, Mr. Wadhwa, could you pull the microphone a little closer?

Mr. WADHWA. All right. Should I start again, or did you hear what I——

Mr. GALLEGLY. And the light is on. Okay. That is fine. Thank you.

Mr. WADHWA. Thank you.

So, anyway, after having been an entrepreneur, I became an academic. That was my way of giving back to America. This country had done so much for me that I wanted to contribute back.

And as an academic at Duke University, I started researching globalization, what is happening abroad. In a nutshell, my research has shown me that we are totally out of touch with the realities of the world; that America relies upon academics to do research studies. What do academics do? They look at data that the government puts out and analyze them in 50 different ways and put out academic studies. And they publish more academic studies based on what other academics have done.

That is not the reality. If you want to know what is happening abroad, you have to go to other countries, you have to go to India and China, you have to hang out with students, you have to hang out with entrepreneurs, you have to hang out and understand what is happening there. And that is what I have been doing most recently.

I was at Tsinghua University 2 weeks ago teaching Chinese students about entrepreneurship. I went there on behalf of U.C.-Berkeley. And I have been going to China for the last 5 or 6 years quite regularly. And I have been going to India, as well. I was blown away with how much has changed over the last 5 years. These students were just like the students I teach at Stanford, Berkeley, Duke, and the other universities I give lectures at. They are exactly the same as we are. They are not burdened by the past. They think like we do. They want to be like us.

I asked the students how many of them wanted to come and study in America. The majority of them do. I asked them how many of them wanted to stay in America. None of them did. And when I asked them why, it was all of them have heard horror stories from their friends who came back from America about the fact that they couldn't get visas and that employers wouldn't look at them because they couldn't—so they couldn't get jobs. They have gone back and have changed the mindset of students over there.

It is the same in the USA. I teach at the Duke Master of Engineering Management program, some of the finest in the country. I used to ask students, when I joined Duke University, what their intention was about staying here. When I would ask them, how many of you plan to stay, nearly everyone would raise their hands.

I ask the same questions to these students every time I visit Duke now, and they ask me, well, what do you mean, Professor, "stay"? I said, well, do you want to become an American? They sort of laugh at me, and they wonder what I am talking about. And they also ask why, when the opportunities are so much greater for them back home, that they can get better jobs, they feel wanted, and there are great opportunities for them back in their home countries.

So while we sit here and debate whether we want these kids, they are sort of wondering, you know, why should they even stay, because there are so many great opportunities back for them at home.

If you read academic reports, they talk about all the hurdles to entrepreneurship in India and China—again, totally out of touch with reality. You have to go to Beijing or Bangalore or Shanghai and hang out in the Internet cafes over there, hang out in the coffee shops, and see what happens over there. It is the same vitality, the same energy you see in Silicon Valley. These kids are buzzing with activity. They want to change the world. They have learned from us our best—the way we think, the way we do business, and they are trying to be like us.

Now, the big thing that happened in India and China over the last 5 years is that there was a flood of returnees going back home. Tens of thousands of really bright Americans—sorry, American immigrants who went back because they had to. They were stuck in limbo or they saw greater opportunities back home. They have gone back to India and China and changed the culture over there. They have now taught the locals all about the American ways, and they built the ecosystem so that entrepreneurship is flourishing in those countries. So we are losing out here.

My research team has documented a lot of the stats that Representative Lofgren cited. For example, we documented that 52 percent of startups in Silicon Valley are founded by immigrants. We also looked at the backlog in the visa system. You know, we keep focusing on the illegal, undocumented workers that came to America, the 12 million, 10 million, whatever the number might be. We don't seem to be aware of the fact that there are 1 million skilled immigrants in the United States who are here legally—doctors, scientists, researchers, academics, who are here legally, who are stuck in limbo. There are no visas for them.

Indeed, Stuart Anderson published a report today which shows that the backlog for Indians right now is 70 years. So my Duke Master of Engineering Management students who graduate today, if they file for a green card, it will take them 70 years, the rest of their lives, to get residence. So why should they even consider staying over here?

So what is happening is that we have a massive reverse outflow. The government data does not show it. In fact, there was a joke of a paper by the National Science Foundation which compared the stay rates of Ph.D.s in 2002 to 2004, and they said, hey, there is no problem, we are in great shape. But what they don't seem to realize is that we are looking at the batch of 1994, people who came in 1994 when America was the land of opportunity. I came here in 1990, when this was the only land of opportunity. There

was nothing else in the world but America. So we are looking back 20 years and saying, everything is okay.

We keep looking at all these numbers, as my colleague is going to do, and we say, you know, we are in great shape, just close the doors, we don't need more engineers and scientists. We are out of touch. We are in a knowledge economy. It is all about competition. If we don't keep these people, if we don't compete, we are going to lose. We are going to become a Third World country, and they are going to become like us. That, in a nutshell, is what I want to say.

I can prescribe fixes here, but it is really a numbers game. We have to increase the number of visas available. We have to admit students to stay. Not that if we gave all these students visas, they would stay; they would still want to go back home. But it becomes harder once you have worked in America for a few years to go back home because you fall in love with this great country.

We have to fix the obvious problems, and we will fix the system.

[The prepared statement of Mr. Wadhwa follows:]

STATEMENT OF VIVEK WADHWA

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SENIOR RESEARCH ASSOCIATE, LABOR AND WORKLIFE PROGRAM, HARVARD LAW SCHOOL

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DISTINGUISHED VISITING SCHOLAR, HALLE INSTITUTE OF GLOBAL LEARNING, EMORY UNIVERSITY

FACULTY MEMBER AND ADVISOR, SINGULARITY UNIVERSITY

COLUMNIST, *WASHINGTON POST* AND *BLOOMBERG BUSINESSWEEK*

COMMITTEE ON THE JUDICIARY

OF THE

UNITED STATES HOUSE OF REPRESENTATIVES

SUBCOMMITTEE ON IMMIGRATION POLICY AND ENFORCEMENT

OCTOBER 5, 2011

Subcommittee Chairman Elton Gallegly and ranking member Zoe Lofgren, Committee Chairman Lamar Smith and ranking member John Conyers, and distinguished members of the subcommittee, thank you for the opportunity to testify today.

I am an immigrant who came to the U.S. in 1980, to study. I ended up founding two software companies that created jobs for hundreds of American workers and that helped improve the productivity of many American businesses. Then, as a way of giving back to this great country for the opportunities it has given me, I became an academic. I now teach at several universities, conduct academic research on U.S. competitiveness, and share my ideas through my *Washington Post* and *Bloomberg BusinessWeek* columns.

What I learned since becoming an academic is that the world has changed much faster than academics and policy makers understand.

Foreign students' beliefs and intentions

The week of September 19, I taught classes at Tsinghua University, in Beijing, China, for an entrepreneurship program run by UC-Berkeley's Center for Entrepreneurship, and I met local entrepreneurs at a local technology incubator.

The students there were very much like my students here—smart, ambitious, and open minded—but even more hungry for knowledge, more passionate about completing advanced degrees, and more motivated to become entrepreneurs. They were very eager to come to the United States to study. They saw education as the best path from poverty to prosperity. Entrepreneurship, for these students, was a way to rise above "the system" and be their own bosses. It is an opportunity to customize a path to success. The reason Tsinghua University, which is considered to be China's Harvard, spends hundreds of thousands of dollars to bring in lecturers from UC-Berkeley is that they know that American education is the best in the world—that it is what gives America its superior advantage in innovation and competitiveness.

But, unlike previous generations of Chinese students, the Tsinghua students didn't plan to come and stay in the U.S. They planned to take their knowledge back to China—where they are wanted. Most would readily start their companies in Silicon Valley or work in the U.S. after they graduate. But all have heard horror stories from their friends about the challenges that foreign students in the U.S. face in getting visas and jobs, so they won't even try. They know that many of America's leading companies have stopped interviewing foreign students because it's hard to obtain visas and because they may face a backlash for hiring foreigners. Given this, they see better opportunities in China and have no reason to consider staying in America.

This is consistent with the trend in the U.S.

I joined the Masters of Engineering Management program in the Pratt School of Engineering at Duke University in 2005. When I asked foreign students in the graduating class whether they planned to stay permanently in the U.S., the vast majority said they did. A few said they wanted to work in the U.S. for a few years before deciding whether to

make America their home. I have been asking the same question of my students every year since then. Now students ask what I mean by "permanently," or they ask why. It is now customary for students to seek a one- or two-year internship to gain U.S. work experience before heading home. Students here have heard horror stories from their predecessors similar to the ones told to the students I taught in China. They start looking for opportunities in their home countries well before they graduate.

To validate the anecdotal data we had gathered, my research team at Duke, Harvard, and UC-Berkeley surveyed 1,224 foreign nationals who were studying in U.S. institutions of higher learning or who had graduated by the end of the 2008 academic school year. We published our findings through the Kauffman Foundation, in a report titled *Losing the World's Best and Brightest: America's New Immigrant Entrepreneurs, Part V*. We confirmed that very few foreign students now plan to stay in the United States permanently—only six percent of Indian, 10 percent of Chinese, and 15 percent of European students. Here are the most important findings:

- A leading reason for students' intentions to depart is the fear that they will not be able to find a job in the United States upon graduation —a fear fuelled by their growing belief that the U.S. economy will lag behind average global growth rates.
- A significant majority of foreign students—85 percent of Indian and Chinese and 72 percent of European—are concerned about obtaining work visas. And 74 percent of Indian, 76 percent of Chinese, and 58 percent of European students are worried about obtaining jobs in their fields.
- Chinese students, in particular, strongly feel that the best employment prospects lie in their home country. Fifty-two percent (in comparison with 32 percent of Indian and 26 percent of Europeans) said that their home country offered the best job opportunities. This contrasts starkly with the belief held by a majority of skilled immigrants in the '80s and '90s that the best opportunities were in the U.S.
- Most foreign students are more optimistic about their home countries' economic future than the United States'. Whereas 7 percent of Chinese students, nine percent of European students, and 25 percent of Indian students stated that they believe the best days of the U.S. economy lie ahead, 74 percent of Chinese students and 86 percent of Indian students felt that the best days for their home countries' economy lie ahead.
- Most have entrepreneurial hopes: 64 percent of Indian, 66 percent of European, and 68 percent of Chinese students indicated that they want to start a business within the next decade. For Indian and Chinese students, the majority (53 percent and 55 percent respectively) hope to start businesses in their home countries. Only 35 percent of European students wish to open a business in their home country.

What does this mean? It means the world's best and brightest aren't begging to be let into the United States any more. They often have better opportunities in their home countries than they have in the U.S. We can't take it for granted that everyone wants to come here, we have to start competing for the best global talent.

Entrepreneurship in India and China: catalyzed by returnees

In China, I also met with local entrepreneurs in an effort to get an update on the local entrepreneurship scene. I have been travelling frequently to China and India over the past few years to research their education programs for engineers as well as their entrepreneurship ecosystems. I also observed the impact that returnees from the U.S. are having on the local economies. In a nutshell, I learned that entrepreneurship is exploding in both countries and that they are beginning to innovate like we do.

In technology entrepreneurship, success comes after several attempts at starting companies. In both China and India, there used to be such a strong taboo associated with failure and such low social esteem granted to start-ups that parents would discourage their children from becoming entrepreneurs. Failed entrepreneurs were considered outcasts and would not be given a second chance.

This is rapidly changing. Chinese and Indian youth now have role models as a result of success of the first generation of technology start-ups, a success that has encouraged acceptance by their parents of entrepreneurial risk. Prospective entrepreneurs are also much more ambitious and confident than their parents were, and they connect with each other and their counterparts in other parts of the world through social networks.

The most important catalyst of entrepreneurship in China and India is the tide of returnees from the West—particularly from the U.S. Tens of thousands of highly educated and experienced entrepreneurs, along with students from top universities, have been returning home over the past few years and teaching locals about the ways of the West. They have been causing a rapid change in local cultural values and fertilizing the entrepreneurship landscape. They are building bridges to the West via social networks.

If you visit the start-up incubators in Beijing or Bangalore or attend technology start-up events, you find that 30 percent to 40 percent of the start-ups have returnee founders. These returnees are teaching locals how to build world-class companies and how to innovate. In almost every high-growth tech company in China, you find returnees in senior management positions. In scientific research, top research labs have returnees in lead positions. And these scientists are beginning to make breakthroughs. They are acting as a catalyst for innovation and economic growth in China and India.

This is a good thing for India and China and will produce long-term dividends for America by creating a two-way "brain circulation." It will expand American markets and spread American values—both are also good things. But the greatest economic growth will be in India and China. There is a high likelihood that Google-class companies will emerge from those countries instead of from the U.S. and that Silicon Valley will, for the first time, face unprecedented competition.

Many people believe that America is the most entrepreneurial land in the world, that it provides better opportunities for entrepreneurs than can countries such as India and China. To learn more about the entrepreneurship scene and how returnees from the U.S. are faring once back home in China and India, my team at Duke, UC-Berkeley, and Harvard surveyed 153 skilled immigrants who had returned to India to start companies and 111

who had returned to China. The title of the paper (again published by Kauffman Foundation) tells the story: *The Grass is Indeed Greener in India and China for Returnee Entrepreneurs: America's New Immigrant Entrepreneurs, Part 6*. Here is what we learned:

- The most significant factors drawing both Indians and Chinese entrepreneurs home were economic opportunities, access to local markets, and family ties. More than 60 percent of Indian and 90 percent of Chinese entrepreneurs said that the availability of economic opportunities in their countries had been a major factor in their return. Seventy-eight percent of Chinese entrepreneurs, and 53 percent of Indian ones, had been lured by the attraction of local markets. And 76 percent of Indian entrepreneurs and 51 percent of Chinese entrepreneurs cited family ties as a factor that had brought them back home.

- Surprisingly, 72 percent of Indian and 81 percent of Chinese returnees said that the opportunities to start their own businesses were better in their home countries. The majority of entrepreneurs (54 percent of Indian, 68 percent of Chinese) found professional growth faster there than in the U.S. And for most (for 56 percent of Indian and 59 percent of Chinese) returnees, the quality of life was better than — or at least equal to — what they'd enjoyed in the United States.

What does this mean? It means the U.S. doesn't have the advantage in entrepreneurship that some people believe it does. We are going to have to compete to attract the world's best entrepreneurs—people such as the legendary venture capitalist Vinod Khosla and Google founder Sergey Brin.

The first American brain drain and effect of visa and per-country limits

The U.S. has always been a land of immigrants. It has historically benefitted from an outflow of talent from the rest of the world. America has never experienced a brain drain and does not even recognize its symptoms. But, just as there are millions of people around the world trying to come to the United States, there is an outflow of highly skilled talent in progress that is fuelling the economic growth of countries such as India and China.

In 2006, my research team at Duke and UC-Berkeley conducted a survey of 2,053 technology and engineering firms founded nationwide in the period from 1995 to 2005. We found that 25.3 percent had a chief executive or lead technologist who was foreign born. We estimated that in 2005, immigrant-founded tech companies generated $52 billion in revenue and employed 450,000 workers.

We learned that the majority of immigrant entrepreneurs—who start 52 percent of Silicon Valley's companies—came to the U.S. to study. On average, they started their companies 13 years after their arrival in the U.S.

We determined that, in 2006, foreign nationals residing in the U.S. were named as inventors or co-inventors in 25.6 percent of World Intellectual property Organization (WIPO) patent applications filed from the U.S., and immigrants had been critical to the success of some of America's largest companies. For example, they contributed to 72 percent of the total patent filings at Qualcomm, 65 percent of the total at Merck, 64 percent of the total at General Electric, and 60 percent at Cisco Systems. More than 40 percent of the international patent applications filed by the U.S. Government also had foreign national authors.

We were puzzled as to why foreign-national patent filings had increased so dramatically—by 337 percent in eight years. To explain this increase and understand the correlation with immigration trends, we developed a methodology to estimate the inventors' countries of origin. No such data are available from the U.S. State Department or the Citizenship and Immigration Services (USCIS).

What we found was shocking. As of September 30, 2006, there were 500,040 principals in the main employment-based categories and an additional 555,044 family members awaiting legal permanent-resident status in the United States. The backlog had been building since the mid '90s.

The reason for the increasing backlog is that only 120,000 visas are available per year in the key visa categories for skilled workers, with no more than 7 percent of them to be allocated to immigrants from any one country. So, immigrants from populous countries such as India and China have the same number of visas (8,400) available as those from low-population countries such as Iceland and or Costa Rica.

The "New Immigrant Survey" — a nationally representative longitudinal study of new legal immigrants — collected extensive data on the immigrant cohort of 2003. It found that the process of applying for permanent residence is so arduous that approximately 17.4 percent of new legal immigrants became depressed as a result of the visa process. Approximately

21.7 percent of new legal immigrants and 34.5 percent of "employment principals" either plan to leave the United States or are uncertain about remaining.

Based on the long and growing queue and the percentage of immigrants who felt aggrieved by the immigration process, we concluded that the potential exists for a sizeable reverse migration of skilled workers from the U.S. to their home countries or other countries, such as Canada, that welcome them. In August 2007, Kauffman Foundation published our paper titled "Intellectual Property, the Immigration Backlog, and a Reverse Brain-Drain: America's New Immigrant Entrepreneurs, Part III," which details these issues and our predictions.

Indeed, dozens of front page articles in major newspapers, CBS and NBC TV prime-time segments, reports by the Chinese government, and our visits to India and China have now substantiated our fears that students and skilled workers are returning home in record numbers, and the trend is accelerating.

A new research report by Stuart Anderson Executive Director of the National Foundation for American Policy, determines that the backlog is particularly severe for Indian nationals. According to this report, a highly skilled Indian national sponsored today for an employment-based immigrant visa in the third preference could wait for 70 years to receive a green card (this number is based on dividing an estimate of 210,000 or more Indians waiting for EB-3 visas by 2,800—the number of Indian professionals who receive permanent residence in this category each year).

What does this mean? This means the U.S. is giving an unintentional gift to China and India by causing highly educated and skilled workers, frustrated by long waits for visas, to return home. We are exporting our growth and competitiveness.

How can we reverse the tide?

There is no way to put the genie back in the bottle, but we can give Silicon Valley and America's hi-tech industries a fighting chance to compete globally by enabling them to retain the skilled immigrants that are working for them, and to hire the people that want to work for them. Students may say they want to return home, but once they have worked in American industry and founded their start-ups, it becomes increasingly difficult to do so. The million skilled workers and their families who are waiting for green cards have already made a decision that they want to stay in the U.S. permanently. The only thing holding them back is the U.S. government. Let's not force these doctors, scientists, engineers, and researchers to leave by delaying their visas.

1. The right solution is to significantly increase the numbers of visas that are offered to skilled workers in the EB1-through-3 categories. We also need to remove the per-country limits. If a move such as this proves politically untenable, then the conversion of temporary visas to permanent residencies could be tied to the purchase of a house, of say $250,000 or more in value.

2. We should provide permanent-resident visas for graduates of top U.S. colleges. Given that, among U.S. postgraduate engineering and science students, nearly half of masters and most PhD students are foreign nationals, it makes sense to encourage these students to stay in the U.S. after graduation. Though it will not guarantee that they will stay, it will certainly make it more likely.

   To limit abuse of this program, it should only apply to degree holders from research universities or universities with established and well-regarded science, technology, engineering and mathematics (STEM) programs. We should also require that students receive job offers from legitimate U.S. corporations.

3. Another solution is to allow skilled workers to get a green card if they start a company that employs Americans. As we noted from our research, the majority of the foreign-born entrepreneurs who started Silicon Valley companies entered the U.S. for education or work. They started companies 13 years, on average, after their arrival in the U.S. So, this was the cohort that had entered the U.S. in the '80s and early '90s. A sizeable proportion of the 2000 cohort is stuck in "immigration limbo." There are tens of thousands of such immigrants who are ready to start companies that create jobs if we let them.

Why does this matter? It matters because we are now in a knowledge economy—in which in skilled talent plays a vital role. We face brutal competition from all over the world. Other countries have learned to play our game and they have the advantage of larger populations. We want their best and brightest scientists and engineers playing on our team and making us more competitive.

Mr. GALLEGLY. Thank you very much, Mr. Wadhwa.
Mr. Lowell?

TESTIMONY OF B. LINDSAY LOWELL, Ph.D., DIRECTOR OF POLICY STUDIES, INSTITUTE FOR THE STUDY OF INTERNATIONAL MIGRATION, GEORGETOWN UNIVERSITY

Mr. LOWELL. I would like to thank the Chairman and the Members of the Subcommittee for inviting me to testify today.

Immigrants in science and engineering benefit the U.S. economy. I am third-generation and was raised by my Romanian grandmother. My father was a biochemist who started a laboratory and held several patents. His drive makes it easy for me to visualize how the immigrant experience benefits us and of the uniqueness of such individuals.

I was also raised in California during the NASA space race and saw how the industry's ups and downs affected the workforce. I believe that demand-side policies will be most successful in boosting the S&E workforce. I think the challenge of a competitive policy is regulations that admit the best and brightest.

First, the domestic student pipeline isn't broken. When my colleagues and I looked into concerns about the pipeline, we were surprised to find many were misplaced. We found that we have a large student body and a small S&E workforce. We average more domestic S&E graduates than past or projected annual S&E job openings.

International test averages can mislead. Individual U.S. states test better than smaller nations. National testing shows improvement. We are a large nation with a lot of students in the upper tails of test score performance.

Student interest in S&E has been steady for decades. Surveys of incoming college freshmen and my research shows a pretty steady flow through the pipeline. All together, these trends suggest a steady supply and improvement.

Next, the S&E labor market is not tight. Economists say if demand outstrips supply, wages escalate to address the shortage. That is a tight labor market. If there is a plentiful supply of labor, wages will be lower. That is a loose market. Consider these indicators: There is a poor retention of S&E workers. Workers in S&E jobs are about one-third of persons with an S&E degree. I have explored broader S&E-relevant jobs definitions and still find retention problems.

There has been a boomlet of S&E immigrants. The high percent of immigrants in S&E has many causes. What it clearly suggests is that policy provides a very significant addition to available labor.

S&E wages lag alternative professional jobs. I cite four studies in my written testimony that find S&E wage growth has slowed or is less than that of comparable professions. These indicators suggest that today's S&E market is loose.

The best and the brightest are not about more, and it is not easy. Of course, job supply is not a zero-sum game, and the supply of immigrants might boost the opportunities for domestic workers. But that is not the entire story. Less well understood is the nature of immigrant selectivity or those few who are the best. In a competitive, globalizing world, getting that certain X factor should be what policy is all about.

Globalization affects the selectivity of Nobel Prize winners. Globalization has led to a decreasing percent of immigrants among those prize winners. Globalization works against selectivity by flattening borders.

And it takes time to grow an entrepreneur. They have been here for decades, mostly. Some were previously students who became green-card holders. Selectivity operates here, as well. Consider the difficulties that Australia had with awarding permanency to for-

eign graduates. Still, data from 2008 show no decline in foreign student or U.S. worker stay rates, albeit we have no recent precise data on changes in the last couple of years.

How many inventors and entrepreneurs? Census data on the S&E workforce and immigrant entrepreneurs indicate that one has to admit many immigrants to get entrepreneurs in a few metropolitan areas. In short, selectivity is a chore.

In summary, a generous number of S&E migrants have been admitted, and, as the system is currently structured, that will continue. There is little evidence that our pipeline produces too few domestic students, and employment opportunities are not as strong as they could be.

Nevertheless, today's admission system clearly is faulty, and targeted changes should be made. I suggest three principles.

First, changes should be careful not to significantly increase admissions—not decrease, that is not in the cards, but not increase. America's competitive advantage is best served by spurring domestic demand. Expanded temporary programs inevitably crowd adjustments to permanent status, and that merry-go-round is a fundamental problem here.

Second, uniquely innovative people are not common, and policy should be selective. Keeping employers in the driver's seat but providing different mechanisms is a good idea for admission.

Third, policy should be fair while being selective. There are a lot of good candidates in the backlog. Time in temporary status is likely to impair while permanent status will improve migrant productivity. Working out the backlog with a preference for the S&E workers who are already here helps address bottlenecks while maintaining selectivity.

Again, I want to thank the Committee. It is well versed in many of these ideas, and my purpose here is not to detail specific recommendations but to provide information. Thank you.

[The prepared statement of Mr. Lowell follows:]

STATEMENT OF B. LINDSAY LOWELL
Director of Policy Studies, Institute for the Study of International Migration

"Immigration and the Science & Engineering Workforce:
Failing Pipelines, Restrictive Visas, and the 'Best and Brightest'"

For the hearing

"STEM the Tide: Should America Try to Prevent an Exodus of Foreign Graduates of U.S. Universities with Advanced Science Degrees?"

Presented to the

United State House of Representatives Committee on the Judiciary
Subcommittee on Immigration Policy and Enforcement

Washington, D.C.
October 5, 2011

I would like to thank Chairman Gallegly and the Members of the Subcommittee for inviting me to testify here today. I have studied the global mobility of highly skilled workers for two and a half decades from the vantage of policy, demography, and labor markets. Policy changes are needed to improve America's competitive advantages, but perhaps in different directions than those under current debate.

There is little doubt that immigrants benefit the U.S. economy, especially those in the S&E workforce which is the backbone of our information age economy. I am a third generation American and was raised with my Romanian grandmother, a nurse, who pushed her son to excel. My father was a Biochemist who started a private laboratory to develop new technologies to test for disease and he held several patents. His entrepreneurial drive makes it easy for me to visualize how the immigrant experience benefits us all and it makes me aware of the uniqueness of such individuals. I was also raised in southern California and during NASA's race to space and the effects of later downscaling of the aerospace industry. There is little disagreement about on the value of attracting S&E immigrants, but we should make a distinction between the supply and demand-side.

I believe that demand side policies will, in the long run, be more successful in building the American economy, and benefitting domestic workers, than finding ways to expand the immigration of S&E students and workers. I come to this conclusion, not only because it accords with my experience and logic, but because data supports that belief. Despite commonly held views about the declining abilities of ever fewer S&E students, I think the data shows that the S&E pipeline is far from broken. Despite the common assertion that there is a shortage of S&E workers, I think the data indicates a loose labor market with a ready labor supply. And despite the belief that more is better, or that streamlining visa processing is the best response to our cumbersome system, I think the challenge to constructing a competitive immigration policy is creating incentive-driven regulations to admit the best and brightest.

THE DOMESTIC STUDENT PIPELINE ISN'T BROKEN

The well-known "Rising Storm" reports from the National Academies investigate America's future competitiveness, raising a number of concerns, and offering several recommendations. They and others question the strength of the domestic S&E pipeline. By domestic I mean the native born and the already resident foreign born, both adults and those who arrive as children. By pipeline, I refer to the long pathway up through high school, to college, and ultimately along the S&E career path.

My colleague Hal Salzman and I decided to look into the strength of the S&E pipeline. We were somewhat surprised to find many concerns misplaced or wrong. We explore broad "core" S&E

occupations—the natural sciences, engineering and information technology—because they share aptitudes and skills. Here the issue is whether there is a problem that calls for demand side and government interventions. While there are specific fields in which we observe hiring (demand) outpacing supply, this tends to be short-lived as supply is surprisingly responsive: take the case of petro engineers where the number of *domestic* graduates more than doubled in a few years in response to increased salaries. Our research finds that the S&E pipeline is reasonably strong even if it can and likely should be improved. Professor Salzman presented our findings to the House Subcommittee on Technology and Innovation in 2007 and I update them here.

***Large student body, small S&E workforce*:** There pool of students with the ability to purse an S&E career is far larger than the S&E workforce. The S&E workforce is fairly small at roughly 5 percent of the U.S. labor force. The *number* of students who score high on math or science is large, and we graduate more S&E students that annual S&E workforce growth. The Bureau of Labor Statistics projects 190,000 annual S&E job openings due to growth *and* replacement needs between 2008 and 2018. Annually, between 1995 and 2007 there was an increasing number of *domestic* S&E graduates, averaging 408,000 bachelors; 78,000 master; and 21,000 doctoral graduates for a total of 507,000. The rate of growth of domestic graduates will lessen as our population ages, but there will be no sharp decline.

***International tests averages can mislead about U.S. performance*:** It is true that U.S. students regularly place mid-way in the international pack on math, albeit they perform better on science and reading. Yet, the age groups sampled internationally are not fully comparable and the ranking between countries is often not statistically significant. And as a separate sample in Massachusetts of the Trends in International Mathematics and Science Study (TIMSS) recently demonstrated, students in *individual* U.S. states test better than those in many of the smaller nations that rank above the *average* American. Furthermore, we are a large nation and we have a lot of students in the upper tail of test score performance.

***National tests show improved math scores*:** The SAT math scores of college bound high school seniors have increased steadily since 1980 after a marked dip in the 1970s. To be sure SAT math scores have recently stabilized at a level a little lower than their 2005 peak, but that is not yet a trend and may simply reflect an increase in the proportion of high school test takers. What is a trend are the smart improvements over the past two decades in the NAEP math scores of 8th graders and the steady trend upward of 12th grade NAEP math scores for all groups.

***Student interest in S&E has been steady for four decades*:** Surveys of incoming college freshman by the Higher Education Research Institute (HERI) since the early 1970s have found about one third express an interest in pursuing a S&E field of study. Additionally, Professor Salzman and I analyzed three decades of longitudinal data and found pretty much steady rates through the pipeline. That is to say there has been little change in the percent of entering high

school students who graduate with an S&E bachelor or advanced degree; or the percent who go on to an S&E job. We do not find evidence that the student pipeline is at imminent risk of failure, that it is grossly deficient across the board compared with other nations, or most importantly that it produces too few domestic students for the S&E workforce. Student interest in science and engineering has remained strong and leads to a substantial supply of S&E graduates.

THE S&E LABOR MARKET IS NOT "TIGHT"

Most Economists will not readily admit that anything like a shortage of labor exists. But that is not quite right; theory says that given strong demand an existing shortage will right itself with time. Richard Freeman has shown that engineering markets have oscillated as increasing wages induce an increased supply of students and, in turn, rebounding supply lowers wages and student enrollments again decline. That is, there are short term or cyclic shortages and longer-term, structural shortages. Cyclic shortages are what temporary visas might fill until the market rights itself, while permanent migration offsets longer run structural shortages. More to the point, wages settle to a level that reflects the relative balance of supply and demand. If demand outstrips supply, wages escalate to address the shortage of labor. If there is a plentiful supply of labor, wages will be lowered. There is evidence that there is a substantial supply in the S&E labor market and that it is best characterized as loose (not tight).

***Poor retention of S&E workers*:** Historically, the roughly 5 million S&E workforce is one third of the roughly 16 million workers who hold at least one S&E degree. There are far more S&E trained workers than the number employed in S&E occupations. Of course, S&E graduates may find related jobs outside of narrowly defined S&E occupations. My colleagues and I have explored a broader definition of "S&E jobs." We start with core S&E occupations but also include as related those "non-S&E" occupations in which S&E trained workers find themselves namely medical jobs, S&E management, and jobs workers report as closely related to their education. Even with this broadened definition, about one-fifth of early career S&E graduates are in jobs that do not use their training and that increases to one third by mid-career. It is important to ask why retention is poor.

***The boomlet of S&E immigrants*:** The Immigration Act of 1990 boosted the admission of highly skilled migrants. That shows up clearly as the foreign born today are roughly half of PhDs and about one fifth of master degree holders less than 45 years of age, but less than one-seventh of all older workers. We need not review the boom of immigrants in S&E fields of study, or as post-docs, or in S&E occupations. The high percent of immigrants, however, does not *ipso facto* signal a shortage of natives as some assert, the high percent may have a number of causes. Consider the independent demand for students by colleges or the dynamics of a globalized market for students and workers. In the worst scenario, immigrants may discourage the pursuit of S&E careers, for which there is limited evidence but evidence just the same. What we can clearly

say is that the immigration boomlet attests that policy is not *numerically* "restrictive" and that it reinforces an impression that immigration is a significant addition to available labor

***S&E wages lag "alternative" professional jobs*:** Some observers argue that S&E pays less, or that the wages increase slower, than "other" jobs. If S&E pays less, it suggests that other highly-skilled professionals are in greater demand and/or other factors such as a ready supply of labor are depressing S&E wages. Yet; the Department of Commerce reports that S&E occupations pay better than *all other* jobs, but that is not a comparison with jobs that compete with the S&E pipeline. Even so, *on average* S&E jobs pay more than the *average* paid to all other *professionals* in non-S&E jobs. What then is the right type of wage comparison?

Like a good researcher, I believe we need more studies; here is some of what we do know. Thomas Espenshade finds that the earnings of S&E occupations increased rapidly from 1970 to 1990 only to see wage growth fall sharply in the 1990s, which he speculates may be related to increasing immigration. Thomas Lemieux finds that core STEM occupations experienced slower wage growth than other professional jobs through the early 2000s, especially those of lawyers and medical practitioners, which he speculates may be due to outsourcing. Clair Brown's research echoes some of these speculations for computer engineering although she is cautious about predicting the future.

What specific "alternative" professional careers appeal to individuals in the S&E pipeline? In the HERI surveys, focusing on college freshman who intend to pursue S&E studies, we find these freshmen report their preferred non-S&E careers to be medical practitioner, veterinarian, teacher (secondary), business executive-manager-administrator, lab technician or hygienist, lawyer or judge, therapist, accountant, and pharmacist or architect. Using U.S. Census data I find that core S&E occupations paid better and had faster wage growth than these non-S&E alternatives after WWII through the Sputnik and cold war decades, but they increasingly paid less than these alternative jobs by 2000 and 2009. This is consistent with the impression that there is not a labor shortage in today's S&E market, but rather it is loose.

THE BEST AND BRIGHTEST ARE NOT ABOUT MORE AND IT'S NOT EASY

Of course, job supply is not a zero sum game and the supply of immigrants might boost innovation, productivity and the job prospects of domestic workers. Casually read most articles on this subject and they tell us that immigrants are more likely to be Nobel Prize winners and they start 25 percent or more of businesses in Silicon Valley or other high-tech ventures. William Kerr finds that H-1Bs boost patenting by Indian and Chinese inventors. Jennifer Hunt finds that the foreign born outperform natives on academic publishing, patents and their commercialization, wages, and in starting businesses. Others find that highly skilled immigrants are associated with favorable effects on economic growth.

These facts are sound, but they are not the entire story. We need to go beyond a handful of studies and, with additional data and research, ask what increasing the number of immigrants might achieve. In particular, let us consider the oft-cited study of immigrants and patents/citations which, as this committee knows, are a critical but not final harbinger of innovation in the marketplace. Moreover, empirical results at the margin do not readily extrapolate beyond the mean. In other words, if the measured impact of a 1 percent increase in skilled immigration increases patenting by 5 percent; it does not follow that a tenfold increase in immigration will generate 50 times the number of patents.

Most importantly, though less well understood, is the nature of "selectivity" in immigration patterns and flows. International mobility is always a story of selectivity, or the number of migrants who are actually the best and the brightest. Not all are. The OECD finds a mildly adverse impact of large numbers of immigrants on migrant selectivity. What is more, globalization by lowering the bar to mobility, and by creating new opportunities abroad, should lead to lower selectivity over time, i.e., a smaller and smaller proportion of migrants with that certain X-factor that generates innovation or entrepreneurial activity. In a competitive, globalizing world getting the immigrants with that X-factor should be what innovative admission policy is all about; not fighting yesterday's battles over more or less immigration.

***The effects of globalization on Nobel Prize winners*:** Hunter, Oswald and Charlton examine the mobility of world-class scientists. They find, encouragingly, that the U.S. is one of the world's top destinations. Yet, these migrants are no more productive than domestic scientists after they migrate. And over the past half century they have been a decreasing percentage of America's Nobel Prize winners. What is more, as the immigrant proportion of Nobel Prize winners has decreased, the proportion of immigrants with an S&E PhD has increased. Simply admitting more PhDs has no effect on getting this very special X-factor. Then Nobel Prize winners are, we all should acknowledge, a very tiny number. The point, nevertheless, is that globalization works against selectivity.

***It takes time to grow an entrepreneur*:** Immigrant entrepreneurs are a long term bet. Vivek Wadhwa reports from his specialized, high tech sample that immigrant entrepreneurs had been in the country at least 13 years. David Hart reports from his sample of fast-growth firms that immigrant entrepreneurs had been in the country 26 years on average. In other words, the selectivity process for entrepreneurs operates through drive and experience. What we know of the process suggests they came by their drive after establishing themselves and not before. Some were, indeed, previously students before becoming greencard holders. But selectivity operates here as well. Consider the difficulties that Australia has had with awarding permanent residency to foreign graduates: incentives are muddied when an award of permanency is added to the core purpose of getting a degree. The United States retains two-thirds of foreign PhD graduates and

we have no solid data at all on whether or not rates of retention are changing. Students who are primarily motivated by their field of study are those most likely to excel and become entrepreneurs.

***Innovation and entrepreneurship*:** Immigrants are rightly lauded for starting high tech companies. Individual examples abound, but as impressive as they are one should acknowledge they are individual anecdotes. The problem with the "immigrant as entrepreneur" story is that it relies on both anecdote and surveys provide a surprisingly limited basis for generalization. Impressively, Anna Lee Saxenian famously reported that Chinese and Indian computer scientists and engineers ran one-quarter of Silicon Valley's high-tech firms in 1998. Vivek Wadhwa found that at least one immigrant was a founder of one-quarter of all engineering and technology companies between 1995 and 2005 and up to half in Silicon Valley. Stuart Anderson finds that immigrants started one-quarter of venture-backed companies over the past 15 years. Yet, Hart et al. find that immigrants nationally were part of the founding team of a far smaller one-sixth of high-growth companies. Academics worry over what types of companies are included in these special-purpose samples and how comparable and representative they are.

Consider that Census data shows that no better than 5 percent of all workers in S&E occupations are self-employed, perhaps unsurprisingly, less than the percent of workers in other professional jobs. The S&E foreign-born, in turn, are less likely than S&E natives to be self-employed. On the other hand, in high technology industries nationally a little over one-sixth of the self-employed are immigrants, closer to Hart et al.'s figures. Again more impressively, close to three-tenths of the self-employed in IT industries are immigrants in Silicon Valley. Impressive, yes, but the valley's share of immigrants in the S&E workforce is roughly twice as large. In other words, one has to admit a rather large number of immigrants to generate what is evidently a very concentrated pattern of immigrant entrepreneurship in key metropolitan areas.

Furthermore, it is not clear that it is immigration that provides the most critical ingredients for innovation "hot spots." In *The Silicon Valley Edge*, Lee and his colleagues argue that there are 10 reinforcing factors behind the valley's success, of which immigrants are only one part. Success in innovation, in the final analysis, is about creating the right business, intellectual, regulatory and academic environments; not about supply-side economics.

SUMMARY

A generous number of S&E migrants has been admitted to the U.S. and, as the system/policy is currently structured, will continue to admit large numbers of immigrants. At the same time, there is little evidence that our educational pipeline produces too few domestic students able and willing to pursue an S&E career. And employment opportunities in most S&E occupations, particularly due to two recent recessions, are not as strong as they should be to attract more

domestic workers. Economists tell us that tighter labor markets induce wage gains and, in turn, more domestic residents would be retained all through the pipeline.

Today's admission system is faulty, however, and shy of a complete redesign, targeted changes should be made. I suggest three principles that should inform policy and regulatory changes.

First, changes should be careful not to artificially induce significantly increased admissions of foreign S&E workers. America's competitive advantage is best served by spurring domestic demand. It is not a good idea to create new visas or expanded caps, escalating caps, or cap exemptions. Nor is it a good idea to award automatic greencards which has the additional downside of creating the wrong incentives to, for example, pursue specialized education in the United States. Neither does it make sense to expand temporary programs, particularly those with long stays and no screening for intent to stay, without a corresponding capacity to permit adjustments to permanent status.

Second, uniquely innovative people are not common and policy should be selective; it should use incentives to admit immigrants who are the best and the brightest. Getting this formulation right is a difficult quest as we know so little about what works. Comparisons to systems in other countries are problematic not only because other countries are not first in skilled migrants preference queue as we are, but also because evidence does not support casual assumptions that point systems say work better than our system. A different system would keep employers in the driver's seat but provide different mechanisms for admitting migrants. For example, the Jordan Commission and, more recently, economists have weighed in favor of market-oriented admissions. One idea is to try truly temporary 2-3 year visas that are awarded in quarterly and spot auction markets on a pilot basis. Entrepreneur visas, that require benchmark investments for new graduates or temporary visaholders, are another good idea. And, given the evidence, we might want to target those with a track record than casting a wide, loose net for young graduates who might, someday, become successful entrepreneurs.

Third, policy should be as fair as possible. Today's system has put many good candidates in an admission backlog, while frustrating employers' need for timely resolution of workers' employment status. There is a sizeable backlog of greencard applicants for employment based visas. We and their employers have invested in these workers' skills and they desire to remain and work in the United States. Clearing that backlog, allocating unused employment visas from past years or by some other means, makes sense. There are many ideas on how to improve policy, in which the Committee is well versed, and my purpose here is not to detail specific recommendations but rather to present evidence for making informed decisions and a few principles to frame those decisions.

Mr. GALLEGLY. Thank you, Mr. Lowell.
Mr. Nassirian?

TESTIMONY OF BARMAK NASSIRIAN, ASSOCIATE EXECUTIVE DIRECTOR, AMERICAN ASSOCIATION OF COLLEGIATE REGISTRARS AND ADMISSIONS OFFICERS (AACRAO)

Mr. NASSIRIAN. Mr. Chairman, Ranking Member Lofgren, thank you for the opportunity to participate.

I am here in a purely ministerial and technical role. We are not participants in development of immigration policy at my organization. But to whatever extent the Subcommittee contemplates a credentials-driven set of immigration policy changes, we suddenly take notice and become very interested just because my membership is in the business of producing and consuming academic credentials. I represent registrars and admissions officers.

With regard to the conversation you are having today, we would only bring to your attention two cautionary notes: one having to do with the very distinct probability of abuse with regard to any system that ties such a rich reward as permanent residency in the United States to academic credentials; and, second, the very predictable unintended consequences of, again, tying something as marketable and as valuable as residency in the U.S. to credentials.

So let me very briefly touch on the two topics. This is not pro or con whatever the substantive judgment of the Subcommittee may be with regard to immigration policy. We hope you do pay some technical attention to some of the details.

Regarding abuse, we have a——

Mr. GALLEGLY. Could you pull it just a little closer? That is better.

Mr. NASSIRIAN. It is not going to get any closer than this, though. Okay.

With regard to abuse, we are very concerned about the terms and conditions of recognition for whatever credentials the Subcommittee decides to single out for any kind of preferential treatment. We talk about "STEM" fields with a certain kind of intuitive understanding of what we are talking about, but I want to make sure you realize—again, my folks think in almost computer-programmer precision when you say "major."

There are numerous groupings of academic disciplines that various governmental bodies have decided to include under the heading of "STEM." The National Science Foundation includes behavioral sciences under that heading. Even the tightest-drawn definition of science, technology, engineering, and math will group together extremely heterogenous fields. You know, I don't know how many more cosmologists we may need. It may be that we are very short of electrical engineers.

But some serious attention needs to be paid to what qualifies, because, again, the possibility of both abuse and unintended consequence will result. The more imprecision there is to the grouping of disciplines that the Subcommittee includes in its definition of "STEM," the more likely the probability of abuse and unintended consequence. So we urge you to pay some attention to that.

And, obviously, the primary motivation ought to be what drives the identification of the field. I want to make sure you are aware that we have a very technical classification system for identifying academic fields in this country called the Classification of Instructional Programs, CIP. This is they system we all use, including Homeland Security and ICE and all of higher ed. But even that precise system is highly susceptible to gaming, because all it takes to put a new CIP code on the books is three credentials offered across the United States. So it is very easy to segue from something that you and I and any reasonable person would include

under the heading of "STEM" to things that you may be horrified to find out someday have now been subsumed under that heading.

That is one area.

The issue of the kinds of practices that institutions are likely to engage in is something that the Subcommittee should pay very close attention to. We are very concerned about the use of commissioned agents overseas, even today, for purposes of providing temporary visas to foreign students. And you can only imagine what is going to happen overseas if something, again, as rich as American residency gets tied to credentials. So some attention has to be paid to the overseas practices of institutions.

Some attention has to be paid to what is an institution of higher education. There are multiple definitions. And, candidly, ICE has much broader definition than even Title IV, Department of Education. And, in candor, the Department of Education's list is nothing to write home about if you begin to dig into it. So you may want to pay some attention to what you have in mind for institutions.

And, finally, in terms of unintended consequence, be mindful of what happens to qualified American students in these fields. And be mindful of the very likely outcome of overproduction. That overproduction may sound like no big deal, but if you create a very rich freebie from the immigration policy side, you may inadvertently create cost-drivers that will continue the escalating tuition inflation that we have been battling for the last three decades.

Thank you very much for the opportunity.

[The prepared statement of Mr. Nassirian follows:]

House Committee on the Judiciary
Subcommittee on Immigration Policy and Enforcement

"STEM the Tide: Should America Try to Prevent an Exodus of Foreign Graduates of U.S. Universities with Advanced Science Degrees?"

October 5, 2011

Statement by Barmak Nassirian
Associate Executive Director
American Association of Collegiate Registrars and Admissions Officers
(AACRAO)

Mr. Chairman and Members of the Subcommittee,

My name is Barmak Nassirian and I am Associate Executive Director with the American Association of Collegiate Registrars and Admissions Officers. AACRAO is a non-profit association of more than 2,600 institutions of higher education and some 11,000 campus enrollment services officials. Our members play a central role in protecting and maintaining the academic integrity of their institutions as admissions gatekeepers and as enforcers of the institutional academic policies on the basis of which academic credits and credentials are earned. As key stakeholders on behalf of their own institutions, they also have a systemic interest in the academic integrity of other institutions.

I appreciate the opportunity to participate in today's hearing on possible changes to the nation's immigration policy toward foreign graduates of American universities with advanced degrees in science, technology, engineering and mathematics (STEM). I should emphasize at the outset that AACRAO has no position on the substantive question of whether certain categories of foreign students should be given an opportunity or various incentives to remain in the U.S. after graduation. There may well be national security, scientific, or economic reasons for Congress to consider such policies. The proper configuration of credentials-driven immigration policy changes, however, would be a major concern for our members because of the likely manner in which such policy changes could affect the quality and integrity of educational credentials.

With regard to preferential immigration treatment of advanced STEM graduates, several important issues merit the Subcommittee's careful consideration. These certainly include the unintended ways in which individuals may seek to manipulate the new policy to their advantage, the threat posed by unscrupulous providers of credentials, and the manner in which even legitimate institutions may be induced to take advantage of the new immigration incentives. As the Subcommittee works to create improvements to credentials-based immigration policy for advanced STEM graduates, it may wish to pay particular attention to the following brief observations.

First, it is important to clarify which academic fields are included under the generic heading of STEM. There is no consensus on the definition of STEM fields within academia or, for that matter, federal agencies. While the label "STEM" is intuitively understandable in context, tying significant immigration benefits to it would require precision and specificity. Arriving at a workable definition will, however, prove challenging. Clearly, the broader the term is defined, the more likely that no intended discipline would be left out. A broad definition, however, would also be more susceptible to gaming because it would include a larger number of disciplines that might not have been intended to qualify for immigration benefits. It is important to point out that even the narrowest definition would include widely heterogeneous disciplines with widely varied employment/unemployment rates and other characteristics. Clarifying the policy motivations for any immigration benefits, and assigning the task of enumerating eligible fields to an agency or inter-agency work-group, would be one way of addressing this problem.

Second, institutional eligibility should be carefully defined to prevent diploma mills and unscrupulous schools from cashing in on the new benefits. Legal U.S. residency is an exceptionally valuable benefit, and awarding it on the basis of credentials would predictably attract questionable schools. There is already ample evidence of this in the student visa arena, where unaccredited institutions are authorized to cater to international students seeking only temporary residence in the U.S. The likelihood of sub-par institutions attempting to gain recognition for their credentials under a STEM permanent residency policy is extremely high and very troubling. To safeguard against abuse, a number of important restrictions could be spelled out in legislation.

- **Eligibility should be restricted to established non-profit institutions that participate in Title IV federal student assistance programs.** Participation in Title IV programs would significantly reduce the risk of outright diploma mills gaining recognition, but would not entirely eliminate the possibility of abuse. Indeed, there is growing concern that a large number of for-profit providers have gained access to the federal educational financing system over the past decade and that there is significant waste, fraud and abuse associated with their participation in Title IV. Given the power of the profit motive and the high market value of the immigration benefits in question, it would be wise to limit any benefits to well established non-profit institutions that participate in Title IV.

- **Eligible institutions should have significant federal research funding.** This would further ensure the legitimacy and integrity of the credentials on the basis of which immigration benefits would be awarded.

- **Eligible institutions should be barred from hiring commissioned agents for recruitment of foreign students.** A predictable outcome of basing immigration benefits on particular credentials would be the heavy marketing of programs solely for their immigration value. While legitimate programs that carry immigration benefits should certainly not be barred from clearly identifying their eligibility, safeguards are needed against abuse. Accordingly, eligible institutions should be barred from hiring commissioned-based agents for recruitment of foreign students. To avoid overseas profiteering from U.S. immigration benefits, eligible institutions should also be barred from partnering with for-profit entities providing recruitment or enrollment services to foreign students on their campuses.

- **Eligible institutions should be barred from charging a significantly higher rate to their foreign students than the highest rate for their U.S. counterparts.** This would protect the integrity of the program and prevent pay-to-play schemes through which schools may seek to monetize the new immigration benefits to their own advantage.

Finally, it would be important to pay some attention to the educational consequences of any new immigration policy that provides preferences for foreign nationals on the basis of earned credentials. The high market value of U.S. residency may indeed attract some of the world's best and brightest to U.S. institutions, and thus improve the academic quality of American institutions and the nation's scientific and technological capital. But there is also a distinct possibility that the rich immigration incentive may result in a displacement of qualified American students and/or over-production of advanced degrees. To ensure that the presence and participation of foreign nationals in graduate STEM programs does not come at the expense of American students, the Subcommittee may consider imposing (fairly high) limits on the percentage of non-resident STEM students in eligible graduate programs. To safeguard against overproduction and over-enrollment, the Subcommittee could require at least minimal institutional support for non-resident aliens enrolled in eligible graduate programs.

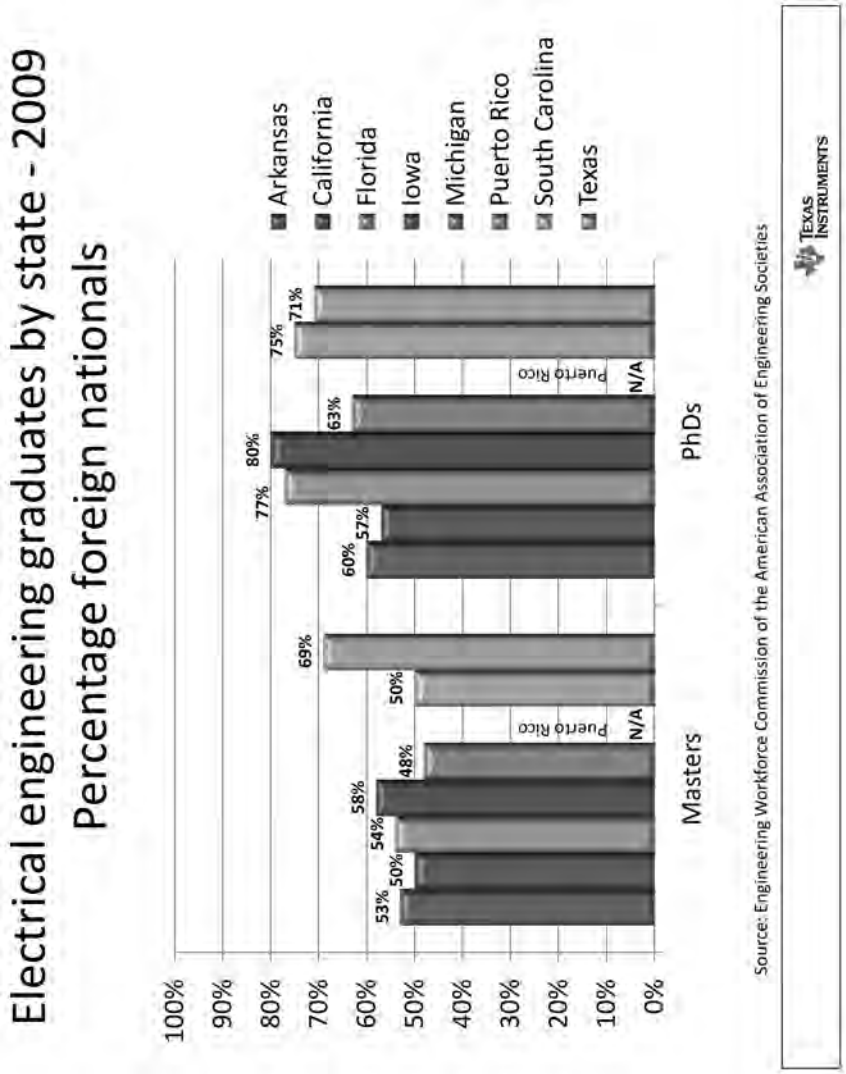
Mr. Chairman, I thank you for this opportunity to share some of our concerns with you and the members of the Subcommittee. AACRAO stands ready to assist the Subcommittee in its work on this important issue.

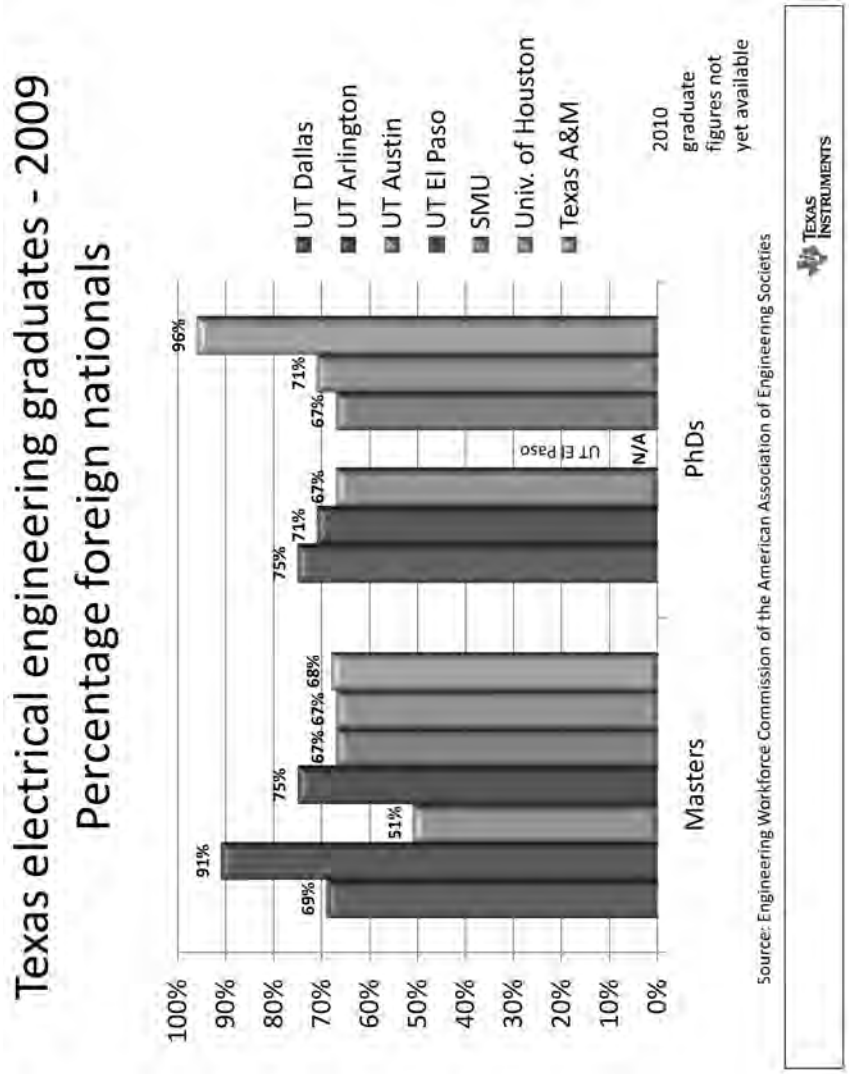
Mr. GALLEGLY. Thank you, Mr. Nassirian.

Ms. Whitaker, could you tell the Committee how it would impact TI if you could no longer recruit foreign STEM graduate students?

Ms. WHITAKER. Chairman Gallegly, that would have a huge impact on us because we have to focus on innovation and creativity and developing new products. And a huge number—you can see from the chart that I submitted, more than half of the graduate students in electrical engineering, so 55 percent of the master's and 63 percent of the Ph.D.s in electrical engineering, are foreign nationals.

[The information referred to follows:]





Ms. WHITAKER. And so, if we were no longer able to recruit foreign nationals, we would not be able to fulfill the needs that we have as a company.

And even worse yet, I think those students would then go to our competitors overseas, where they could work. And I think that would be a huge travesty to Texas Instruments and our industry.

Mr. GALLEGLY. What percentage of TI's electrical engineers have graduate degrees as opposed to a bachelor's degree?

Ms. WHITAKER. The majority of the students that we hire are bachelor's degrees, about 55 percent. And so 45 percent of them are Ph.D.s and master's degrees. TI's policy is not to hire foreign na-

tionals for bachelor's degrees because we don't need to. And so we don't sponsor foreign nationals at the bachelor degree level. But we do, because we must, at the master's and at the Ph.D. level.

Mr. GALLEGLY. Thank you.

Mr. Lowell, you stated in your testimony that STEM jobs used to pay better than alternate careers, such as lawyers, accountants, but now they pay less. What do you attribute that to? What is your assessment of that?

Mr. LOWELL. I am going to play a good academic; I don't think we have a good answer to that question. It is speculated that has been the increase of the foreign-born. It is speculated it is due to outsourcing. We don't know precisely.

What I think it is consistent with, and that is what I think we can strongly say, is that it shows that the labor market is a little soft. That means that, you know, there is no clear evidence of strong shortages. That is speaking across the entire STEM labor market, which is a broad thing.

Mr. GALLEGLY. Mr. Nassirian, would you be leery of advanced STEM degrees offered through the Internet?

Mr. NASSIRIAN. It would be problematic.

Mr. GALLEGLY. Would you like to——

Mr. NASSIRIAN. Well, the Internet is a mode of delivery, so I don't want to condemn—the mode of delivery isn't really the issue. The issue is the growth of entirely online institutions that are really Web sites that have been allowed to move up the food chain. Institutions that, a few decades ago, were certificate-granting vocational venues have almost, sort of without notice, moved up into degree-granting and now doctoral institutional status.

And that is of concern, because when we talk about STEM fields, and particularly in this context—which, candidly, I am not very familiar with—but if we are talking about the context of economic growth, you are presumably speaking about research institutions. And it is very difficult to conceptualize an entirely online research——

Mr. GALLEGLY. Would you say it invites mischief?

Mr. NASSIRIAN. And outright criminality, quite frankly.

Mr. GALLEGLY. You raise concerns in your testimony about for-profit universities, but can abuses also occur in nonprofit universities?

Mr. NASSIRIAN. Absolutely.

Mr. GALLEGLY. And maybe you could give us a little more thought on that, nonprofits verus profits, if there is any difference.

Mr. NASSIRIAN. Well, it is basically a tax difference, frankly. It is not—and I want to—in full disclosure of my own status, some 9 percent of my members are for-profit institutions. So, you know, just for the record.

The concern here is the monetization of the sovereign prerogative of the American Government to decide who comes here by institutions. To whatever extent—you know, the profit motive is a very powerful incentive, so, naturally, you would be much more likely to find embellishments and maybe outright abuse where, you know, the profit motive may drive people to do things they probably shouldn't.

We have seen that in Title IV, certainly. A disproportionate number of defaults are associated with the for-profit sector, and complaints in general just far outstrip complaints about nonprofits.

But I want to, in full fairness, point out that there is a tremendous likelihood that the nonprofits are also going to move to take advantage of any benefits. And that may not be—there are pros and cons here. On the one hand, maybe the addition of vastly higher-quality students to the system will—you know, the rising tide will lift all boats. So maybe institutions that are now not necessarily the best research venues get better students and become better research venues.

But, on the other hand, there is also a very distinct possibility that that will result in cost inflation, that everybody well seek to become, you know, Harvard as opposed to what they are really good at. And that may not be to the benefit of the Nation, because we need teaching venues, we need community colleges, we need places that are a good fit for the populations they have historically served.

So that is one of our concerns, is that the Judiciary Committee or this Subcommittee inadvertently sort of writes education policy that may adversely impact American students.

Mr. GALLEGLY. Thank you very much, Mr. Nassirian.

Ms. Lofgren?

Ms. LOFGREN. Thank you, Mr Chairman.

Before asking my questions, I would like to ask unanimous consent to place in the record a speech by Mayor Bloomberg regarding this topic; a letter from the American Council on International Personnel about today's hearing; and two recent studies authored by Stuart Anderson and the National Foundation for American Policy.

The studies, one titled "Keeping Talent in America," and the other, "Waiting and More Waiting: America's Family and Employment-Based Immigration System," have found that Indian nationals in the employment-based third preference category will wait for up to 70 years for a permanent resident visa.

So I would ask unanimous consent that those items be placed in the record.

Mr. GALLEGLY. Without objection.

[The information referred to follows:]

THE CITY OF NEW YORK
OFFICE OF THE MAYOR
NEW YORK, NY 10007

FOR IMMEDIATE RELEASE
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MAYOR BLOOMBERG DELIVERS KEYNOTE ADDRESS AT IMMIGRATION AND AMERICAN COMPETITIVENESS CONFERENCE SPONSORED BY THE U.S. CHAMBER OF COMMERCE AND THE PARTNERSHIP FOR A NEW AMERICAN ECONOMY

Mayor: Area Where Both Parties Can Agree on Plans to Jumpstart Job Creation – Economic-Based Immigration Reform

The following are Partnership for a New American Economy Co-Chair Mayor Michael R. Bloomberg's remarks as delivered:

"Thank you. I don't know if it's been a rough morning here. I spent all the time just sitting on the tarmac at LaGuardia. We started out very early thinking we would not have any problems whatsoever, and then we kept getting delayed, delayed and delayed. And you kept looking at the radar map and saying, 'Why?' But the FAA knows better. And all's well that ends well. Thank you for having me, and it's great to be down here. I love the Chamber of Commerce, I used to be a member many years ago, and I'll tell you a quick story. Tom Donohue cost me a lot of money. It wasn't the gifts to support the Chamber, because that's money well spent and I think they've always done a great job. But the point is that when I left the Chamber, Tom gave me a beautiful porcelain eagle. The trouble was I was already the Mayor, and the Mayor can't take gifts. So I loved the eagle so much I went to the company that made it, I bought one to take home. And without that, I wouldn't have spent that money. I would have had a lot more money. My girlfriend would have been able to have a better wardrobe, all of those things. My kids, another horse – anyway. Thank you for the opportunity to come here and speak, and I assure you that my remarks will not run too long.

"Tonight, for those of you who don't know, is the beginning of Rosh Hashanah – so I have to wrap this up before sundown. This is the Jewish year 5772 – which is ironic, because 5772 AD is when some people say we're going to see a bipartisan budget agreement. Have to use the math to get there, folks, but you know, it's tough this hour in the morning.

"Seriously, three Septembers ago, as the global banking industry melt down continued, our nation faced really the prospect of economic collapse. Thankfully, Congress and the then Bush Administration acted quickly and decisively to shore up the financial industry. And I've always

(more)

thought that Hank Paulson, Bob Steel and Bernanke and Tim Geithner really saved this country and we owe them a great debt of gratitude. People say we shouldn't have done TARP. Those people just don't understand what would have happened to our country and how dangerous we came to really a meltdown that would have damaged our economy for many years into the future.

"In the two years that followed, Congress did pass and President Obama signed a $800 billion stimulus package; they rescued the auto industry from bankruptcy; they passed financial reform legislation; and they did extend the Bush-era tax cuts.

"I know all of us have different opinions of these actions, and I would bet that a lot of you, like me, think that some were more helpful than others. But as we approach the end of 2011, two things really are very clear: First, the American economy remains in very serious trouble, with more and more concern that we are headed into a double-dip recession. And second, I think it's fair to say more of the same just is not going to do the trick to keep us out of that.

"Whatever you may think of the President's Jobs Plan – and I give him credit for at least putting forward a concrete agenda. It's easy to talk, but I've always said, 'Okay, what would you do?' and the President's told us what he would do. And whatever you think of the Republican agenda – and they have put forward some things that whether you agree with them or not are concrete – I think it is clear that we can't just spend our way out of this crisis, nor can we cut our way out without doing both.

"We have to grow our way out – and to do that, we need a new approach. And that's what I'm here to talk about today, because we really need an approach that allows business to grow, that expands our markets overseas, that spurs innovation, that increases the number of entrepreneurs who start businesses here, and that creates jobs for Americans on every rung of the economic ladder.

"Now, what if I were to tell you that there's a way we could do all of those things at no cost to the taxpayers. Not one penny. Well I think if told you that in the process we could raise revenue and we could use either that revenue to pay for tax cuts or to pay for essential services like national defense, I suspect all of you would say, 'Great, what are we waiting for?'

"And I think that's really the question that we're here today to try to answer. Because the truth is we can do all of that, and we can do it in a way that both parties can support – if we have an open and honest conversation about immigration reform based on economics rather than anything else.

"Right now, the two parties – to the extent they talk at all about immigration – play to their base. Democrats say we need comprehensive immigration reform – and I agree we do. Republicans say we need to tighten the border – and I agree with that as well. But unfortunately that is where the national conversation ends.

"Now, if we could just get the two sides to talk with each other – instead of past each other – I believe we could see a lot more agreement than disagreement, and I believe we could pass a bill that would do more to strengthen the economy than anything that is being discussed in Washington today.

"That's why we're here this morning, to talk about a middle ground that exists and how both parties can seize upon it.

"We all know from our Partnership for a New American Economy, which is the name of this organization that we have formed of business leaders and mayors from across the country, there is an emerging consensus between Democratic and Republican mayors and business leaders on how to tackle immigration reform. And it boils down to a saying that once again will define a presidential election: It is the economy, stupid.

"As the two parties are locked in a stand-off over how to create jobs, immigration reform based on our national economic needs offers a unique opportunity, I think, to both of them. It does not require either party to walk away from its position on taxes or spending.

"Instead, the two parties could produce legislation that is consistent with their political principles, that reflects sound economics, that would put thousands of Americans back to work and that would be popular with voters back home.

"And today, I'd like to talk with you about four ideas that I think should form the basis of that legislation. They are not a panacea – there is no such thing. But there is no doubt they would strengthen our economy, and put us on track to create the jobs that our country needs.

"First, both Democratic and Republican business leaders and mayors agree that our visa distribution should be better aligned with our economic needs. Every year, we admit more than one million new permanent residents. But 85 percent of the visas we hand out are for those seeking family re-unification or refuge from harm, while only 15 percent of visas are given for economic reasons. And the real number is probably something more like seven percent, because many bring their spouses and children.

"There is no question that family reunification and humanitarian relief are vitally important. They reflect the values that have long sustained our country. But immigrants have done even more than shape our culture; they have built our economy. And we need them to help us continue building it, particularly at this point in our history.

"Allocating only 15 percent of visas based on economics is just terrible public policy – and it really is holding our economy back. In today's global marketplace, we cannot afford to keep turning away those with skills that our country needs to grow and to succeed. It is sabotaging our own economy. I've called it national suicide – and I think it really is.

"That's why I think we should dramatically expand the numbers of green cards available for the best of the best – the highest-skilled workers we need to join the U.S. economy permanently. These high-skill workers will not only help create thousands of jobs, they'll also give us knowledge of foreign markets that will help U.S. businesses increase their exports.

"One study found that a one percent increase in immigrants working in managerial and professional jobs leads to a three percent increase in U.S. exports to their home country. And you can just take the example of Caterpillar, the company famous for its bulldozers and other heavy equipment. Fully 60 percent of Caterpillar sales are international. But to design the bulldozer that

will sell in China, Caterpillar has to know how the Chinese approach construction and infrastructure – and having a few Chinese engineers in senior positions goes a long way to fulfilling that need and making sure that their products are saleable overseas, and competitive.

"The second idea that both Democratic and Republican business leaders and mayors agree on is that foreign students who are earning advanced degrees in technical fields from our universities should be eligible to work here permanently.

"Foreign students account for nearly two-thirds of those who earn a computer-science or engineering Ph.D. from a U.S. institution – two-thirds. These are the individuals who make the discoveries and innovations that propel business and create jobs for Americans. And they're already here on our soil.

"But when they graduate, our immigration system has no permanent path designed for them. After a brief grace period to stay and work, our laws allow most of them only cumbersome temporary visas and a long, uncertain path to a green card, limited by a tangle of restrictive rules and quotas.

"Turning these students out of the country is, to put it bluntly, about the dumbest thing that we could possibly do. Other countries are bending over backwards to attract these students – and we're helping them to do it. We've become the laughing stock of the world with this policy. The fact is: there is no such thing as too many engineers, too many scientists, or too many technological innovators. We need all of them in this country.

"Foreign students who earn advanced degrees from a U.S. university in science, technology, engineering, or math – what has come to be called the 'STEM' fields – should be able to remain and work indefinitely after graduation. Let's offer them green cards when they finish their degrees, and then we can get down to the real business of convincing them to stay because that's not a foregone conclusion either. We are in competition with the rest of the world for the best and the brightest. We have to make sure that they and their families want to stay here. And unfortunately or fortunately, the truth of the matter is there are lots of alternatives for people in this day and age.

"The third key idea that both Democratic and Republican business leaders and mayors agree on is that we should stop turning away so many entrepreneurs who want to come here and start businesses.

"These businesses will hire American workers, and immigrants are more than twice as likely as those born in America to start a new company – and a recent study shows that U.S. job creation in the last 30 years is entirely attributable to startup companies.

"One-quarter of U.S. engineering and technology companies started during the dot-com boom had a foreign-born founder; 40 percent of all venture-backed, high-tech companies successful enough to conduct a public stock offering had an immigrant founder. And out of last year's Fortune 500, including many longstanding giants of American business, more than 40 percent were founded by immigrants or the children of immigrants.

"But as with foreign students, our immigration system has no real path for foreign entrepreneurs, even if they have a bright business idea that has already attracted investors. So these entrepreneurs are finding other countries that are smart enough to take them and their new businesses. And to double the pain, U.S. capital – capital that could have seeded economic growth here at home – disappears overseas with them.

"Let me tell you a story – a story of just one entrepreneur who wanted to grow in the United States. It's about a Canadian named Eric Deep.

"He joined the long parade of software developers who have gone to Silicon Valley seeking opportunity and capital. He found success with an online quiz program that quickly attracted over a million users – and also attracted the interest of U.S. investors. They wanted Deep to start a company to sell the program. But Deep couldn't get a visa to stay in the U.S, and his ability to build a company – a company that could have created U.S. jobs – got him nowhere with our immigration system. So his investors gave up. The opportunity passed. And Deep went home to Canada.

"It's no surprise what happened with Deep's next idea. He and two other Canadians had creative ideas for a business selling video-games to play on smart-phones. Deep was able to convince U.S. investors to get on board. But this time, his partners have chosen to grow their company in Vancouver, Canada, where they have less trouble getting visas for their employees. And, of course, over the border to Canada went U.S. capital and the jobs that could have been created in the United States.

"This is just craziness – but we can stop it by offering a conditional visa to immigrants who have capital to back their business ventures. If their new company successfully creates jobs for American workers, the entrepreneur would receive a green card to stay and grow the business into the future.

"America already has some of the most enterprising individuals on Earth, but entrepreneurs are like engineering Ph.D.'s and computer scientists: You just can't have enough of them, particularly when we have an enormous number of people unemployed in this country. People say, 'Why bring more immigrants into this country when you have unemployed?' Because that's the solution to the unemployment problem in this country – more jobs being created by more businesses.

"Fourth, and finally, both Democratic and Republican business leaders and mayors agree that we should expand and streamline our existing tools for attracting talent to our country.

"Temporary visas like the H-1B program help fill critical gaps in our workforce, but the numbers are too few and the filing process too long and unpredictable. In many years, the visas have been exhausted in mere days, and even in the midst of the national recession, the visas have run out before the end of the year for which they're authorized. This leads to critical shortfalls not only in the software industry, but also in fields like engineering, electronics, pharmaceuticals, medical research, and aerospace. This is just absurd to deny American companies access to the workers they need.

"Now the government doesn't know how many skilled workers are needed each year –only the market does. So let the markets work. And you can do that by eliminating the cap on H-1B visas.

"Another arbitrary cap we should eliminate at the same time is the one that limits employment green-cards by country. Right now, Iceland gets the same quota as India. It just makes no sense. I have nothing against Iceland, but just think about where the next engineers and the entrepreneurs are going to come from. We'll get some from Iceland, and we'd love to have them come here. But just because of size, you're much more likely to get an awful lot from India. This just makes no sense.

"Why should we care what country a skilled immigrant comes from? These quotas mean that high-skill employees from China and India can face a wait of up to ten years for a green card – and during that time, they are prohibited from getting a promotion or taking a new job. No wonder why many return home.

"That's a loss not only for American companies that invest in them, but for our entire economy – because they return home to help our competitors, these other countries. Think about it this way, the Yankees sending C.C. Sabathia home to pitch for the San Francisco Giants. Just in case anybody's interested, if anybody is here from San Francisco, it's not going to happen. And the Yankees will go all the way and win the World Series, but you heard it here first just so you know. I didn't mean to take all the fun out of it in anticipation and worry, but it's going to happen.

"Each of the four steps that I've just outlined would help the U.S. economy and the American worker. Each would create more jobs. And if we don't take them, we not only will be undermining our economy – we are putting our nation's future at risk.

"Just look at what other countries are doing to attract the people that we are turning away. In China, the government offers tax breaks, cheap loans, and start-up capital to Chinese citizens who are educated overseas and then return to start a business. China has also launched what it calls the 'Thousand Talents Program,' a campaign to lure back top Chinese scientists with cash and well-funded laboratories.

"In Israel, the government is spending hundreds of millions of dollars on a program to attract thousands of Israeli ex-pats, particularly scientists, researchers, and doctors, by offering them tax breaks, health insurance, and free tuition for further education.

"In Chile, the government is seeking entrepreneurs of any background, Chilean or otherwise. A pilot program for the founders of new technology companies there offers startup capital, free office space, reduced red tape, and access to mentors.

"And many of our English-speaking competitors – from Canada and the U.K. to Australia and New Zealand – have visa programs designed to attract entrepreneurs who come to create jobs. All these countries know that smart visa policies alone can't guarantee that their economies will successfully weather every economic storm. But they do know that there's no chance they'll stay competitive unless they can attract top talent from around the world, and that certainly goes for the United States.

"Now, with too few jobs to go around today, as I said before, why should we let people from overseas compete for slots that could go to U.S. workers? I just want to repeat the real facts here.

"As the data clearly show, immigrants don't take away jobs; they make jobs – and that is especially true for high-skilled immigrants. For example, one study has shown that for every H-1B position, U.S. technology companies increase their employment by five workers.

"And it's not that the U.S. workforce doesn't already have many extraordinary individuals, but the global economy is changing everything. People and resources are moving more freely than ever before. Offices and factories can increasingly do the same work anywhere. And information technology is creating unprecedented cross-border opportunities.

"And as a result, America no longer is the inevitable crossroads for enterprise and innovation. Countries from Asia to South America now beckon with opportunity. So the United States simply has to compete like never before for talent. That's a competition we can win if we work at it – and we must win if we are going to remain the world's strongest economy, and a beacon of hope for people around the world.

"America has always been that beacon. Exactly one month from today, New York City and the entire country will mark the 125th anniversary of America's greatest monument, the Statue of Liberty. Since 1886, Lady Liberty's torch has brought light to the darkest corners of the earth, beckoning to our shores all those 'yearning to breathe free.'

"Yet it is not Lady Liberty's torch or her crown or her broken chains that have inspired so much awe: it is her location.

"The power of her symbol lies in the reality of New York City as a gateway – a golden door – to the land of opportunity that is the United States of America. That reality is our history. But it also must be our future.

"And yet today, we are saying to those who dream of becoming Americans, who dream of coming here to work and start businesses: We don't need you. We don't need your sweat or your skills. We don't need your ideas or your innovations. But nothing – nothing – could be further from the truth.

"We desperately need immigrants who want to come here to work, who have the skills our companies need to succeed. The American dream cannot survive if we keep telling the dreamers to go elsewhere.

"Today, we may have turned away the next Albert Einstein or Sergey Brin. Tomorrow, we may turn away the next Levi Strauss or Oscar de la Renta.

"And we certainly will be turning away many of the people who – like my ancestors and no doubt many of yours – came to this country with almost nothing, except one thing: A desire to work – and work and work and work – to build a better life for themselves and their families.

"The debate here in Washington on how to create jobs will not be ending any time soon. And in all likelihood, the gridlock will not be broken unless the two parties find a way to align their political interests. That's hard to do when each has staked out such entrenched positions.

"But immigration reform offers both parties a chance to champion a cause that is vitally important to American companies. It offers both parties a chance to show entrepreneurs and business leaders that they understand the needs of the American economy. And it offers both parties a chance to show the American people that, when it comes to immigration reform, they are in favor of policies that will help American workers – and help our country get moving again.

"This is a chance we can't afford to miss, and it's up to us – all of us – to convince Congress to seize that chance. So thank you, and let's get together and make this happen. Your future, your children, and grandchildren's future depends on us getting this done. And I cannot urge you enough to call your Congressman or Congresswoman, call your Senator and say, 'We just have to have this. Enough with the posturing, there's a time for a political campaign, but there's also a time to save America.'

"Now, I've been working with my Senators in New York – particularly Chuck Schumer, who understands the issue I think – and I think there are many others – Lindsey Graham, and others in this country – who do as well. But you've got to call your Senator, your Congressperson, and say, 'This is something that just cannot be consumed by partisan politics. It is not something that can wait for the next election. This is about keeping America the superpower, the greatest country in the world, the place where our ancestors came and where our future has to come.

"Thank you very much."

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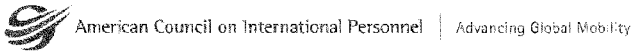

October 5, 2011

Hon. Elton Gallegly, Chairman
Hon. Zoe Lofgren, Ranking Member
House Committee on the Judiciary
Subcommittee on Immigration Policy and Enforcement

Re: Statement for the Hearing Record: "STEM the Tide: Should America Try to Prevent an Exodus of Foreign Graduates of U.S. Universities with Advanced Science Degrees?" October 5, 2011

Dear Chairman Gallegly, Ranking Member Lofgren:

I am honored to submit this statement in my capacity as Executive Director of the American Council on International Personnel (ACIP). I thank you most sincerely for holding this important hearing. ACIP has been the leading voice on high skilled immigration policy for almost forty years. Our membership consists of over 220 of the nation's largest employers in the fields of technology, healthcare, entertainment, higher education, financial services, and non-profit research. Over the past four decades, ACIP has worked closely with this Subcommittee to develop a first-rate immigration system that welcomes the world's talent to our shores. We firmly believe our historic openness has been the key to America's economic growth and innovation. We also believe, however, that we have lost this competitive advantage at the time we need it most.

In the dawn of an economic recovery, our nation's top priority must be to grow jobs for America. This requires us to retain our global leadership in innovation and productivity in a 21st Century global economy, which in turn requires access to a range of talents. In an economy that changes as fast as it does today, having the right talent at the right place at the right time is the difference between success and failure, between innovation and stagnation. For over a decade, we have been watching the balance tip toward stagnation as our immigration policies have failed to keep pace with economic realities. ACIP members in all industries report that it has become more time-consuming, less predictable and more expensive to hire and transfer foreign employees than ever before. Cutting through this morass of unpredictability takes time and money away from businesses struggling to create new goods and services. None of this is in America's best interest.

While there are many issues in our immigration system that must be resolved, we believe the focus of today's hearing which is on the foreign nationals who come to our nation's colleges and universities to receive the best training in the world is well placed. According to the National Science Foundation, international students receive 50% to 60% of master's and Ph.D. degrees awarded in various engineering disciplines in U.S. institutions. In addition, international students earn nearly 50% of Ph.D. and more than 40% of the master's degrees awarded in mathematics.

Similarly, more than one-third of master of business administration (MBA) degrees from our nation's top programs go to international students. These statistics represent a stark reminder that the United States can either choose to retain this talent in whom we have already invested our educational resources, or lose them to our competitors because our immigration laws do not provide sufficient avenues for them to stay.

An obvious example is the so-called "green card" backlog for permanent resident status. The restrictive quotas, exacerbated by per country limits, create an unrealistic scenario for certain foreign professionals to remain in our country long term, and compel some to look for opportunities elsewhere. For example, Chinese and Indian nationals, who make up 47% of all science and engineering graduates from U.S. institutions, have to wait nearly a decade to receive a green card even if they have earned a master's degree. Unsurprisingly, more graduates are choosing to work abroad where they feel more welcome.

We recognize that at a time of high unemployment there are concerns that foreign nationals may take opportunities from Americans. This is why ACIP has long promoted the enforcement of equal wages, benefits and working conditions for all employees and a Trusted Employer system for companies that have demonstrated that they play by the rules. Highly-educated foreign professionals who are free to pursue their dreams do not compete with Americans for jobs. Rather they complement the skills in our native workforce and contribute to the innovation that allows companies to grow and hire more Americans.

It is time to realign our immigration policies with our economic objectives and welcome foreign talent to our shores. ACIP respectfully urges Congress to improve our visa programs so that our nation does not deprive itself of any of the tools necessary to stay competitive. In as much as foreign professionals come to the United States for a myriad of purposes, our laws must be sufficiently nimble to meet the pace and demand of today's marketplace. We must have workable programs for business visitors, temporary professionals and permanent residents.

To retain our global leadership in innovation and productivity and ensure U.S. competitiveness on the world stage, ACIP suggests the following:

1) Welcome foreign professionals holding an advanced education in science, technology, engineering and mathematics (STEM) by exempting them from green card quotas or increasing the number of available visas so that these talented professionals can get on with their lives quickly and predictably;
2) Grant dual intent to immigrate to students seeking STEM master's degree or higher to eliminate uncertainty caused by the current red-tape;
3) Exempt the spouse and children of STEM graduates from the employment-based green card quotas to ensure that the quotas are fully used by workers ready and able to contribute to today's economic growth;
4) Permit applicants for adjustment to live and work in the United States during the pendency of the visa petition so the employee can contribute to the U.S. economy while waiting for a visa to become available; and

5) Implement a "Trusted Employer" registration system that would streamline processing for American employers with proven track records of compliance and a commitment to hiring Americans.

Job growth should be our nation's number one economic priority. Jobs will follow innovation, and innovation requires access to the best available talent, whether that talent is in the United States or elsewhere. It is time to roll out the welcome mat and let the world know the United States is open for business once again.

ACIP thanks this Subcommittee for holding this important hearing.

Respectfully submitted,

Lynn Shotwell
Executive Director

NATIONAL FOUNDATION FOR AMERICAN POLICY

NFAP POLICY BRIEF » OCTOBER 2011

WAITING AND MORE WAITING: AMERICA'S FAMILY AND EMPLOYMENT-BASED IMMIGRATION SYSTEM

BY STUART ANDERSON

EXECUTIVE SUMMARY

Today, the most distinguishing characteristic of innovative and adaptive immigrants is an ability to wait a long time. That is because America's system for both family-sponsored and employment-based immigration is saddled with backlogs that force individuals and their American sponsors to wait many years – potentially decades – before obtaining a green card. Absent action by the President and Congress the situation will grow worse, creating much hardship and weakening the competitiveness of U.S. companies. The estimates are based on examining data from the U.S. Department of State and U.S. Citizenship and Immigration Services, as well as consulting with attorneys and government officials. The research was made possible by a grant from the Carnegie Corporation of New York. The statements made and views expressed are solely the responsibility of the author.

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. The 70-year wait is derived from calculating that there exists a backlog of 210,000 or more Indians in the most common skilled employment-based category (the 3rd preference or EB-3) and dividing that by the approximately 2,800 Indian professionals who receive permanent residence in the category each year under the law.

While the majority of employer-sponsored immigrants tend to be from India and China, the wait times are longest for such foreign nationals because of the per country limit. Given the potential working lifetime delay in obtaining a green card, such skilled foreign nationals would be compelled to leave the United States in search of more stable and promising career opportunities. America would lose much talent as U.S.-based businesses would need to hire or place such skilled individuals abroad, rather than invest in a green card process likely to last decades. The report concludes that even if the backlog of Indians in EB-3 were half as large, the wait time would still exceed 30 years for Indians sponsored today in the category. Many professionals from India have already been waiting 7 to 9 years in the United States. A Chinese national sponsored today in the EB-3 category could wait two decades.

The issue of wait times for employment-based immigrant visas is vital because when employers recruit at U.S. universities they generally find one-half to two-thirds of the graduates in science, math and engineering fields are foreign nationals. Failure to retain these talented individuals in the United States means they will go to work for international companies in other countries or U.S. businesses will need to place them abroad, pushing more work outside the United States. An ability to offer a prized employee a realistic chance of staying in America as a permanent resident can be crucial to retaining that individual. In addition to the high proportion of foreign nationals graduating in key fields from U.S. universities, individual achievers make an important impact on the economy.

A key part of any solution to reducing wait times is to eliminate the per country limit for employment-based immigrants. (The recently introduced bill H.R. 3012 would eliminate the per country limit within four years.) Eliminating the per country limit would reduce the typical wait for Indians applying today in the EB-3 category from 70 to 12 years. While 12 years is still too long, it would be a welcome reform that would provide green cards for Indian and Chinese professionals waiting the longest in the EB-3 and EB-2 (employment second preference) categories and equalize the wait times in the EB-2 category at about two to three years without regard to country of origin (as opposed to potential waits of 6 years or more for Chinese and Indian nationals in the EB-2 category). An exemption from employment-based green card quotas of at least 25,000 or 50,000 for international students who graduate with an advanced degree in science, technology, engineering or math (STEM) from a U.S. university would further reduce the backlog and wait times, producing an even larger impact if combined with making available up to 326,000 employment visas unused in previous years.

The estimated overall backlog of skilled employment-based immigrants calculated in this analysis is about 500,000 (principals and dependents), which is a conservative estimate, as others in recent years have estimated the backlog to be as high as one million.[1] For analysis purposes, the estimate of the impact under various scenarios assumes the annual flow of sponsored individuals and dependents matches the current quota, in practice, 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 or other legislative changes on backlogs and wait times.

In addition to the problems experienced by Indians, many skilled foreign nationals from China have been waiting 6 or 7 years for an employment-based green card and can expect to wait additional years without a change to the law. Skilled foreign nationals from countries other than India and China have been waiting one to 6 years in the employment-based third preference and some may wait another four years or more. In the EB-2 category (second employment-based preference), skilled foreign nationals from India and China may wait 6 years or more, although nationals of other countries typically receive green cards in the category with little or no wait.

The long waits for employment-based green cards are caused by two primary factors: 1) the 140,000 annual quota is too low and 2) the per country limit, which restricts the number of green cards available to skilled immigrants from one country to 7 percent of the total. Due to the per country limit, skilled foreign nationals from India and China, who make up most of the applicants, wait years longer than nationals of other countries.

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[1] The analysis in this paper does not address waiting times among "Other Workers" (lower-skilled) in the employment-based backlog. An estimate of approximately one million in the employment-based backlog appears in Vivek Wadhwa, Guillermina Jasso, Ben Rissing, Gary Gereffi and Richard Freeman, *Intellectual Property, The Immigration Backlog and a Reverse Brain-Drain*, America's New Immigrant Entrepreneurs, Part **III**, Duke University, New York University, Harvard Law School and Ewing Marion Kauffman Foundation, August 2007, p. 4, where it states, "We estimate that as of 30 September 2006 there were 500,040 principals in the main employment- based categories and an additional 555,044 family members awaiting legal permanent resident status in the United States."

The availability of green cards is no better for most family-sponsored immigrants. The criticism that the U.S. immigration system tilts toward family admissions rests, in part, on the assumption family members sponsored by U.S. citizens quickly come to America and become permanent residents, which is not the case. The wait times for sponsoring a close family member are long, in some cases extremely long. A U.S. citizen petitioning for an adult son or daughter from Mexico can expect to wait about 18 years. Some U.S. citizens petitioning for a brother or sister from the Philippines have waited since before the fall of the Berlin Wall, more than 20 years. In November 2010, the State Department tabulated a waiting list of more than 4.5 million close relatives of U.S. citizens and lawful permanent residents.

Under the law, a U.S. citizen can sponsor for permanent residence a spouse, parent, sibling and a minor or adult child; lawful permanent residents (green card holders) can petition for a spouse or minor or adult child. The majority of U.S. family immigration (52 percent) is derived from U.S. citizens petitioning for their spouses and minor children, a part of our immigration system no one proposes to eliminate. A lawful permanent resident (green card holder) can sponsor a spouse or child. The wait times vary for the categories, in part due to the application of per-country limits. Liberalizing the per country limits for family immigrants would help those with the longest waits, while raising the quotas or utilizing unused family visas from prior years would reduce the overall waiting times.

Analysis finds "chain migration" is a contrived term that seeks to put a negative light on a phenomenon that has taken place throughout the history of the country – some family members come to America and succeed, and then sponsor other family members. Using numbers available from the U.S. Citizenship and Immigration Services Ombudsman and the U.S. Department of State shows 41 years would pass between the time a U.S. citizen filed a petition for an adult son or daughter from Mexico in 1992 and someone in the sibling category sponsored by that adult child could immigrate in the year 2033. That length of time does not sound like an "endless" chain of relatives, as is sometimes discussed.

Some have argued for eliminating certain family categories, even if doing so serves no real purpose. Contrary to popular belief, family immigration is not about "extended family." A child 21 years or older is not a distant or "extended" family member, neither is a sibling, particularly given the closeness of many sibling relationships around the world. The 65,000 individuals who enter through the sibling category each year equal about 6 percent of overall U.S. legal immigration in a given year. And the annual flow from the sibling category represents only 0.02 percent of the U.S. population. Similarly, the 23,400 in the categories for the sons and daughters of U.S. citizens – 21 or older, unmarried and married – each equal only about 2 percent of overall legal immigration and 0.008 percent of the U.S. population annually. Eliminating these categories would produce only a small drop in overall legal immigration and lead to great hardship for tens of thousands of Americans and their loved ones.

Unlike seemingly intractable budget or foreign policy issues, the problems with employment-based and family-sponsored green cards can be solved with small changes to the law. Eliminating the per country limit for employment-based immigrants and liberalizing it for family-sponsored immigrants would have an important positive impact. Raising the quotas or providing targeted exemptions from those quotas, as well as utilizing unused visas from previous years could significantly reduce waiting times. Such reforms are necessary. After all, an ability to wait a long time should not be the characteristic most prized in an immigrant to the United States.

EMPLOYMENT-BASED GREEN CARD WAITS ARE DECADES-LONG FOR SOME

Today, hundreds of thousands of highly skilled foreign nationals are languishing in immigration backlogs, waiting years for the chance to obtain permanent residence (also known as a green card). The lack of employment-based green cards harms the competitiveness of U.S. employers and pushes more work and innovation outside the country.

With no change to current law, an Indian-born professional sponsored today could wait 70 years for an employment-based green card. That is because the potential backlog in the employment-based third preference category (EB-3) – the most common employment category – is 210,000 for Indians (principals and dependents), while under the per country limit, generally no more than 2,800 Indians can receive permanent residence in the EB-3 category each year. (Indians averaged fewer than 3,000 green cards annually in that category in 2009 and 2010.) In practice, of course, no one is going to wait 70 years for a green card – nor is any company going to sponsor someone with that type of wait. That holds important implications for whether highly skilled foreign nationals, including international students, will be able to stay long-term in the United States without changes to the law. Foreign nationals would have concerns that children included as part of the immigration petition would "age out" and not be allowed to become permanent residents. The numbers provide an illustration of how long the waits for permanent residence could be absent action by Congress.

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.

One can estimate the backlog of Indians in the EB-3 category is 210,000 from available data. The U.S. Department of State has listed 49,850 Indians on the waiting list in the third preference category with a priority date prior to January 1, 2007.[2] (Priority dates normally coincide with the filing of a petition or of labor certification, an early stage in the employment-based green card process.) However, that 49,850 figure does not include all the cases at various stages in the process at U.S. Citizenship and Immigration Services with a priority date prior to January 1, 2007. Rounding that figure upwards would get to at least 60,000 (and it could be much higher).

[2] http://www.travel.state.gov/pdf/EmploymentDemandUsedForCutOffDates.pdf.

To reach another 150,000 Indians for fiscal years 2007 through 2011 requires only about 15,000 individual Indian professionals sponsored for green cards each year for 5 years, with each averaging one dependent, another 15,000, for a total of 30,000 a year for 5 years or 150,000. To illustrate why an estimate of at least 15,000 Indians sponsored for green cards annually in EB-3 is reasonable, consider that 61,739 new H-1B petitions (for initial employment) were approved for Indians in FY 2008, and 33,961 Indians were approved for new H-1B petitions in FY 2009.[3] A large proportion of H-1B visa holders are sponsored for green cards. In addition, employers frequently sponsor for green cards skilled foreign nationals already inside the country in another temporary status, such as L-1 (for intracompany transferees). Attorneys estimate 20 percent of those waiting for green cards in the EB-2 and EB-3 categories are in a status other than H-1B.

WHY THE ISSUE IS IMPORTANT

When employers recruit at U.S. universities they generally find one-half to two-thirds of the graduates in science, math and engineering fields to be foreign nationals. (See NFAP's October 2011 report *Keeping Talent in America*.) Failure to retain these talented individuals in the U.S. means they will go to work for international companies outside the United States or U.S. businesses will need to place them abroad. An inability to offer a prized employee a realistic chance of staying in America as a permanent resident may mean losing that individual.

In addition to the high proportion of foreign nationals graduating in key fields from U.S. universities, individual achievers among them make an important impact on the economy. An immigrant was the founder of one out of four venture-backed companies that became publicly-traded companies between 1990 and 2005, according to a study by the National Venture Capital Association.[4] Many outstanding foreign-born researchers at Google, Microsoft and many smaller companies have produced important innovations that have created jobs and products enjoyed by millions in the United States.

WHAT HAS CAUSED THE LONG WAITS?

The long waits for employment-based green cards are caused by two primary factors. First, the 140,000 annual quota is too low to accommodate the number of skilled foreign nationals able to be absorbed successfully in an economy the size of America's, with a population of over 300 million people. While the Gross Domestic Product (GDP) of the United States has nearly tripled (in nominal dollars) since 1990, from $5.8 trillion to $15 trillion, the employment-based immigrant visa category has remained at 140,000 visas annually since 1990.

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[3] *Characteristics of Specialty Occupational Workers (H-1B): Fiscal Year 2009*, Department of Homeland Security, April 15, 2010, p. 6.

[4] Stuart Anderson and Michaela Platzer, *American-Made*, National Venture Capital Association, 2006.

The 140,000 annual limit includes both the principal and dependent family members. For example, in 2009, dependents utilized more than half of the slots for employment-based visas – 76,935 of 140,903.[5] The spouses and children of H-1B temporary visas do not count against the annual quotas. Including the exemptions from the 65,000 annual quota on H-1Bs, an average of 106,000 new professionals gained H-1B status each year between FY 2006 and FY 2009.[6] That is one source of future green card holders. Others include individuals transferred from abroad on L-1 visas, as well as researchers and others sponsored directly from abroad without first working in the United States.

PER COUNTRY LIMITS

Eliminating the per country limit on employment-based immigrants will dramatically reduce wait times for immigrants from India and, to a lesser extent, China. In addition to the 140,000 overall annual limit on employment-based green cards, there is also a per country limit, which has a disparate impact on immigrants from countries with a large population of highly educated professionals, particularly India and China. A company could file petitions for green cards on the same day for two engineers with identical credentials, one from India and the other from Belgium. Because of the per country limit, the engineer born in Belgium may receive his green card in 6 years, while it could take 20 years for his colleague from India. As the analysis that appears in this report demonstrates, an Indian national sponsored for a green card in the employment-based third preference (EB-3) might wait decades to obtain a green card.

Policymakers are starting to appreciate that no national interest is served by the U.S. government, in effect, discriminating in favor of one nationality over another, even if it is doing so unintentionally. Certainly if individual employers announced they intend to limit how many people of Indian or Chinese origin they planned to hire or sponsor this year the companies would face public criticism or even legal action.

The Immigration and Nationality Act, in Section 202(a), details the per country limit: "[T]he total number of immigrant visas made available to natives of any single foreign state . . . may not exceed 7 percent . . . of the total number of such visas made available under such subsections in that fiscal year."[7] That would limit employment-based immigrants from one country to approximately 10,000 a year. However, another provision permits nationals

[5] *2009 Yearbook of Immigration Statistics*, Office of Immigration Statistics, Department of Homeland Security, 2009, Table 7. Note: In some years the number of immigrants recorded in the statistical yearbook does not match the 140,000 annual quota either because additional visas were allotted from unused family visas from the prior fiscal year or because individuals did not arrive in the United States in the same fiscal year in which their visas were approved by the U.S. Department of State.
[6] *Characteristics of Specialty Occupational Workers (H-1B): Fiscal Year 2009*, p. 4.
[7] Section 202(a)(2) of the INA.

of a country to exceed this ceiling if additional employment-based visas are available.[8] Still, in general, the per country limits compel individuals from countries with large populations years to wait longer than people from smaller population countries.[9]

UNUSED EMPLOYMENT VISAS

A surprising contributing factor to the employment-based green card backlog is unused visas from prior years. Between FY 1992 and FY 2006, more than 506,000 employment-based immigrant visas went unused, as illustrated in the Appendix.[10] Administrative issues within the federal government, particularly prior to FY 2005, prevented the U.S. immigration system from distributing all of the employment-based green cards available under the law. The State Department reports that 180,039 of the 506,410 unused employment visas have been recaptured by special legislation.[11] That leaves more than 300,000 never utilized.

UNDERSTANDING THE EMPLOYMENT-BASED IMMIGRATION SYSTEM

To ensure the annual quotas are maintained, the State Department publishes priority dates in the Visa Bulletin each month. While some individuals blame the State Department for a lack of progress when waiting for a green card, in fact, that makes no more sense than blaming an umpire for calling a ball hit over the fence a home run. The State Department only implements the annual quotas as established by Congress.

Under the law, there are 5 employment-based preferences: First Preference (EB-1, priority workers); Second Preference (EB-2, worker with advanced degrees or exceptional ability); Third Preference (EB-3, professionals, skilled workers and other workers); Fourth Preference (EB-4, special workers, such as religious workers); and the Fifth Preference (EB-5, employment creation or investor visas). A total of 40,040, or 28.6 percent of the 140,000 annual quota is used by each of the first, second and third preferences. However, the first preference can use any numbers not utilized by the fourth and fifth preferences, which are limited to 7.1 percent (or 9,940) each. The second preference (EB-2) can use any numbers not utilized by EB-1, while EB-3, the third preference, can use any visa numbers not utilized by the EB-2 category.

In practice, even individuals with advanced degrees can fall under the EB-3, third preference, category due to agency rules. "The criteria for EB-2 is that the position requires the advanced degree, not just that the employee

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[8] Section 202(a)(3) of the INA.

[9] *Immigration Benefits*, Government Accountability Office, November 2005 (GAO-06-20), p. 43. "There are also annual numerical limitations on the number of visas that can be allocated per country under each of the preference categories. Thus, even if the annual limit for a preference category has not been exceeded, visas may not be available to immigrants from countries with high rates of immigration to the United States, such as China and India, because of the per country limits."

[10] U.S. Department of State; USCIS Ombudsman, *Annual Report to Congress*, June 2010, p. 35.

[11] Ibid.

has a masters or higher," notes Warren Leiden, partner, Berry Appleman & Leiden.[12] In addition, other skilled workers are included in EB-3, which is why the wait times are the longest for individuals in that category. As noted, the per country limits can make the wait longer for individuals from larger countries, specifically India and China.

A visa number generally is "available" for an individual with a priority date earlier than the date listed in the State Department's most recent Visa Bulletin.[13] (As noted earlier, a priority date is usually triggered by the date a labor certification application or an immigrant petition is received by the federal government.) For example, in the November 2009 Visa Bulletin the cut-off date for the third preference for China was June 1, 2002. That means if an employer began the green card process and had filed before June 1, 2002 for labor certification for an employee born in China, then adjustment of status (for a green card) could be filed for that individual. However, if the labor certification application was not filed until August 2003, then there is no visa yet available for that individual and he would continue waiting.

In many cases, an individual is already in the United States in another status, such as H-1B status, while waiting for a green card. However, such individuals often are not promoted or hesitate to change jobs because doing so could materially change their green card applications and cause them to start the process over. In addition, it is likely their spouses are unable to work. Those waiting for a long time also risk being laid off or working for a company that goes out of business, particularly if the wait is many years. They are unlikely to have a chance to start a business based on a new idea or innovation, since that would risk their ability to stay in the United States.

Wait Times and Backlogs for Employment-Based Green Cards

The "Demand Data Used in the Determination of Employment Preference Cut-Off Dates," published by the State Department and regularly updated, is a useful document to start estimating backlogs.[14] However, State Department data do not include all cases at different stages in the process at U.S. Citizenship and Immigration Services. That means one needs to also look at numbers U.S. Citizenship and Immigration Services have made available, as well as formulating estimates based on past use of H-1B visas by year and nationality. Most employment-based cases are adjustment of status cases that take place in the United States. Since neither the State Department or U.S. Citizenship and Immigration Services can provide an exact number of individuals in the employment-based backlog, the best one can do is make reasonable estimates based on available information. To the extent one formulates estimates different than those appearing in this analysis, the wait times for people from specific countries will vary.

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[12] Interview with Warren Leiden.
[13] Copies of any Visa Bulletin referred to in this paper can be found at: http://travel.state.gov/visa/bulletin/bulletin_1360.html.
[14] http://www.travel.state.gov/pdf/EmploymentDemandUsedForCutOffDates.pdf.

Table 2
Projected Wait Times for Employment-Based Green Cards (Third preference - EB-3)

	India (Persons with Priority Dates between July 8 2002 and July 15, 2004)	India (Persons with Priority Dates between July 15, 2004 and Nov. 22, 2005)	India (Persons with Priority Dates after Nov. 22, 2005 up to the present)	China (Persons with Priority Dates between July 15, 2004 and Nov. 22, 2005)	China (Persons with Priority Dates after Nov. 22, 2005 up to the present)	All Other Countries (Persons with Priority Dates after Nov. 22, 2005 up to the present)
How Long Have Most Been Waiting So Far (up to today)?	7 to 9 years	6 to 7 years	1 to 6 years	6 to 7 years	1 to 6 years	1 to 6 years
How Much Longer to Wait If No Change in Policy?	Up to another 11 years	Up to another 12 to 20 years	Another 21 to 70 years	2 to 3 years	4 to 24 years	1 to 5 years

Source: National Foundation for American Policy; Visa Bulletin, September 2011, U.S. Department of State.

The estimates included in this paper are as follows:

- 90,000 Indians and Chinese (principals and dependents) are in the EB-2 second preference backlog; there is no backlog in EB-2 for individuals from other countries.
- 210,000 Indians (principals and dependents) in the EB-3 backlog
- 55,000 Chinese (principals and dependents) in the EB-3 backlog.
- 150,000 individuals (principals and dependents) from *all other countries* in the EB-3 backlog.

Once one estimates the backlog, it is relatively simple math to project wait times for individuals from different countries, absent a change in the law. For example, the annual limit for Indians in the EB-3 category is 2,800 under the law due to the per country limit. According to data obtained from U.S. Citizenship and Immigration Services, only an average of 2,860 Indians received permanent residence in the EB-3 category in 2009 and 2010.[15] As illustrated in Table 1, if one divides 2,860 (or rounds it up to 3,000) into the estimate of 210,000 Indians in the EB-3 backlog, we can conclude a new Indian professional applying today in that category could wait approximately 70 years to receive a green card. In practice, of course, neither a foreign national nor a company

[15] Processing issues or the ability to pierce the per country limit under the law in limited circumstances can lead to annual totals somewhat different than the specified per country limit in a category.

sponsor would be able to wait 70 years for the green card process to be completed. Even if "only" 100,000 Indians are in the EB-3 backlog, the projected wait time for a new green card applicant would still be over 30 years. That is still far too long for any individual or employer to wait.

For Chinese in the EB-3 third preference, an average of 2,280 immigrated through the category in 2009 and 2010. If approximately 55,000 Chinese are in the backlog, that would project to a wait time for a Chinese professional applying today in the EB-3 category of about 24 years. For countries other than India and China, the wait times for a new applicant in the EB-3 category are likely to be about 4 to 6 years.

IMPACT OF ELIMINATING THE PER COUNTRY LIMIT ON WAITING TIMES

Does it serve U.S. policy interests for skilled people from larger countries to wait longer for a green card than people from smaller countries? Given that the per country limit creates significant disparate impacts against professionals from India and China, the United States risks losing skilled workers from those countries unless Congress takes corrective action.

The best approach is to combine eliminating the per country limit with an increase in the number of employment-based green cards (or exemptions from the quotas). Eliminating the per country limit would be a positive step. For example, it would reduce a wait of potentially 70 years for a new Indian professional applying in the EB-3 (employment-based third preference) category down to 10 to 12 years, and for other Indian and Chinese (waiting the longest) it would reduce current waits of up to a decade down to one or two years. That would be an important achievement in efforts to retain skilled foreign nationals in the United States. In the EB-2 (employment-based second preference) category waits of about 6 years for Indian and Chinese could be reduced to one to two years.

We can estimate the impact of eliminating the per country limit by examining the EB-2 and EB-3 categories. The EB-2 limit is, in practice, about 50,000, having averaged 49,749 in 2009 and 2010. The category's annual limit is 40,040 or 28.6% of the 140,000 overall EB (employment-based) annual limit, but it can receive "fall down" from the EB-1, EB-4, and EB-5 categories.

The EB-2 category is "current" for individuals from countries other than India and China, meaning such individuals do not have any significant wait to receive an immigrant visa. (The September 2011 Visa Bulletin lists a "C" for current.) In contrast, individuals from India and China have generally been waiting about 4 years, depending on when they applied. For India and China the priority date for EB-2 was April 15, 2007, meaning anyone with a priority date after April 15, 2007 cannot receive an immigrant visa.

A gradual elimination of the per country limit would be a compromise that would permit individuals from countries other than China and India to continue immigrating during a transition to a true "first come, first serve" system. The current system is only first come, first serve for those from countries not affected by the per country limit.

Table 3
EB-2: Impact of Eliminating the Per Country Limit in Stages in 4 Years

	India	China	All Other Countries
How Long Have Most Been Waiting up to today and with no change in the Per Country Limit	More than 4 years (Will wait another 1 to 5 years)	More than 4 years (Will wait another 1 to 6 years)	0 years, no waiting, category is current
How Much Longer to Wait if (instead) Per Country Limit is Eliminated in Stages in 4 years?	1 to 2 years (up to 4 years less)	1 to 2 years (up to 5 years less)	Some will not wait longer, most others will wait 1 to 2 years more

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.

H.R. 3012, a bill by Rep. Jason Chaffetz (R-UT) and Judiciary Committee Chair Lamar Smith (R-TX), would phase out the per country limit for employment-based immigrants over a four-year period. By the fourth year the per country limit would be eliminated entirely for employment-based immigrants.

The estimate of the current EB-2 backlog is 90,000 – 60,000 Indians and 30,000 Chinese. Under the bill referenced above, within two to three years, all Indians and Chinese currently in the EB-2 backlog would likely receive permanent residence.[16] Meanwhile, of the estimated 25,000 a year from other countries who immigrate in the EB-2 category, likely about half would receive green cards during the first two years and the rest would receive green cards likely in the following year. Eliminating the per country limit would provide relief to those with the longest wait and, after the transition period, place those applying in the EB-2 category on a true "first come, first serve" basis without regard to country of origin. However, to the extent the annual flow for EB-2 matches the annual quota of 50,000, then a backlog of 90,000 could still remain even if the per country limit is eliminated. Such a backlog would no longer exist exclusively of highly educated individuals from India and China.

[16] Approximately 50,000 immigrate each year in the EB-2 category.

Eliminating the per country limit in the EB-3 category would significantly reduce the wait times for Indian and Chinese skilled foreign nationals and somewhat raise those wait times for individuals from other countries. The annual EB-3 limit is 40,040 and averaged about that number in 2009 and 2010. A total of 5,000 (currently) are set aside for Other Workers (primarily low-skilled workers). That means about 35,000 skilled immigrants in the EB-3 category receive permanent residence each year.

Table 4
EB-3: Impact of Eliminating the Per Country Limit in Stages in 4 Years

	India (Persons with Priority Dates between July 1, 2002 and July 1, 2004)	**India (Persons with Priority Dates between July 1, 2004 and Nov. 22, 2005)**	**India (Persons with Priority Dates after Nov. 22, 2005 up to the present)**	**China (Persons with Priority Dates between July 15, 2004 and Nov. 22, 2005)**	**China (Persons with Priority Dates after Nov. 22, 2005 up to the present))**	**All Other Countries (Persons with Priority Dates after Nov. 22, 2005 up to the present)**
If No Change in Per Country Limit Policy	Been waiting 7 to 9 years and will wait up to another 11 years	Been waiting 6 to 7 years and will wait up to another 12 to 20 years	Been waiting 1 to 6 years and will wait another 21 to 70 years	Been waiting 6 to 7 years and will wait another 2 to 3 years	Been waiting 1 to 6 years and will wait another 4 to 24 years	Been waiting 1 to 6 years and will wait another 1 to 5 years
How Much to Wait if (instead) Per Country Limit is Eliminated in Stages in 4 years?	Will wait 1 to 2 years (9 to 10 years less)	Will wait 1 to 2 years (11 to 18 years less)	Will wait 3 to 12 years (18 to 58 years less)	Will wait 1 to 2 years (1 to 2 years less)	Will wait 3 to 12 years (1 to 12 years less)	Will wait 1 to 12 years (1 to 7 years more)

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.

There are estimated to be approximately 60,000 to 70,000 Indian and Chinese with priority dates prior to November 22, 2005 (as listed in the September 2011 Visa Bulletin). If the per country limit was eliminated, then these individuals (the number includes the principals and dependents) would receive permanent residence within two years. This would represent a significant change, since such individuals have already been waiting 6 to 9 years and many would be expected to wait up to 12 years longer without any change in the law.

What about the rest of those in the current EB-3 backlog after the per country limit is eliminated? After the Indian and Chinese with priority dates prior to November 22, 2005 receive permanent residence, all individuals from all countries would receive green cards on a true first come, first serve basis.

If we estimate the remaining existing backlog in the EB-3 category after the first two years as 350,000, then that would mean it would take about 10 additional years to clear such a backlog (approximately 35,000 a year). The 350,000 is estimated as follows: India: 150,000; China: 50,000; All Other Countries: 150,000.

However, note that during this 12-year period (including the two years to clear the Indian/Chinese backlog with priority date prior to November 22, 2005), new skilled foreign nationals would be sponsored for permanent residence. To the extent their annual totals (including dependents) exceeded 35,040, the wait time for each new skilled foreign national would exceed 12 years. This points to the need for solutions beyond the elimination of the per country limit. Eliminating the per country limit in itself will not reduce the number of people in the EB-3 backlog but it will equalize the waits, help those waiting the longest and change the composition of the backlog.

Impact of Creating a 50K STEM Exemption

Eliminating the per country limit is a smart policy choice and also a prerequisite for broader reform, since adding more numbers without eliminating the per country limit would mostly help those who already wait the shortest, rather than those who wait the longest. It is worth asking the question: What would happen to wait times if, after eliminating the per country limit, Congress created an exemption of 50,000 visas a year for international students with a valid job offer and a graduate degree in science, technology, engineering or mathematics (STEM) from a U.S. university?

If, in conjunction with eliminating the per country limit, Congress created a 50,000 graduate student STEM exemption from the current employment-based annual quota, the following is likely to be the result:

- The backlog in the EB-2 (employment-based second preference) category would be eliminated and the category would become current within three years and stay current (no backlogs).[17]
- The exemption would help create a fall down of visas to the EB-3 (employment-based third) category that would eliminate the EB-3 backlog and make the category current within 10 years.[18] The EB-3 category already includes many advanced degree holders.

After eliminating the per country limit as described earlier, a STEM exemption of only 25,000 a year would make the EB-2 category current within 4 years. However, it would take about 20 years to eliminate the EB-3 backlog and make the EB-3 category current with a 25,000 a year STEM exemption. It would likely create, in effect, a fall down of about 20,000 visas a year to EB-3 that would reduce the wait times in that category.

Table 5
Impact of Various Legislative Scenarios on Employment-Based Immigrant Wait Times

	Eliminating Per Country Limit and Creating 50K STEM Exemption	**Eliminating Per Country and Creating 25K STEM Exemption**	**Eliminating Per Country Limit and Reallocating 326,000 Unused Visas**	**Eliminating Per Country Limit, Reallocating 326,000 Unused Visas and 25K STEM Exemption**
EB-2 Category	Would eliminate backlog and make category current within 2 years	Would eliminate backlog and make category current within 4 years	Would eliminate backlog and make category current within 1 year	Would eliminate backlog and make category current within 1 year
EB-3 Category	Would eliminate backlog and make category current in 10 years	Would eliminate backlog and make category current in 20 years.	Would reduce wait times by about 7 years, leaving average of 5 year wait	Would make category current in 6 years

Source: National Foundation for American Policy; U.S. Department of State; Office of Immigration Statistics, U.S. Department of Homeland Security. For analysis purposes, the estimate of the impact under various scenarios 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, then that would change the impact of a STEM exemption or other legislative change on backlogs and wait times.

[17] If the category becomes current it could encourage more applicants to file in the EB-2 category, which could affect these estimates.

[18] If one assumes a current EB-3 backlog of 415,000 and assumes a sufficient fall down to create a total of 80,000 visas a year to be used in the EB-3 category, then that would eliminate that backlog within approximately 5 years. However, it is likely for the first two years, the 50,000 exemption would be utilized primarily to eliminate the EB-2 backlog before being utilized to reduce the EB-3 backlog.

RESTORING UNUSED EMPLOYMENT VISAS AND ADDING MORE VISAS

If instead of creating a 50,000 exemption for STEM graduate students, Congress reallocated the 326,000 employment-based immigrant visas that have gone unused, it would first eliminate the EB-2 backlog (90,000) within a year, and then reduce the current estimated 415,000 backlog in EB-3 to 179,000. After the elimination of the per country limit, that would reduce the wait time of individuals who applied new in the EB-3 category from 11 or 12 years down to about 5 years. If Congress added 25,000 more to the annual quota after allocating the 326,000 unused employment-based immigrant visas, then that would likely make the category current in approximately 6 years.

For analysis purposes, the estimate of the impact under various scenarios 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, then that would change the impact of a STEM exemption or other legislative change on backlogs and wait times.

THE LONG WAIT FOR FAMILY IMMIGRANT VISAS

A common criticism of the U.S. immigration system is it tilts heavily toward family admissions. This rests, in part, on the false notion that any close relations sponsored by U.S. citizens quickly come to America as permanent residents. The wait times for sponsoring a close family member are long and, in some cases, extremely long. In a November 2010 report, the State Department tabulated more than 4.5 million close relatives of U.S. citizens and lawful permanent residents on the immigration waiting list who have registered for processing at a U.S. post overseas.[19] That does not include individuals waiting inside the United States, such as in a temporary visa status, who would gain a green card via adjustment of status at a U.S. Citizenship and Immigration Services office. Counting such individuals as well would likely increase the waiting list to over 5 million.[20]

In general, a U.S. citizen can sponsor for permanent residence a spouse, child, parent or sibling. A lawful permanent resident (green card holder) can sponsor a spouse or child. The wait times and quotas vary for the categories, with the application of per-country limits creating much longer waits in some preference categories for nationals of Mexico and the Philippines.

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[19] "Annual Report of Immigrant Visa Applicants in the Family-sponsored and Employment-based Preferences Registered at the National Visa Center as of November 1, 2010," U.S. Department of State, Bureau of Consular Affairs, Immigrant Visa Statistics, November 2010.

[20] One can estimate the additional individuals not counted in the State Department document by examining the proportion of individuals in each family preference category who are listed as adjustments, rather than "new arrivals," in Table 7 of the annual *Yearbook of Immigration Statistics*, published by the U.S. Department of Homeland Security.

For example, the wait time for a U.S. citizen petitioning for a brother or sister from the Philippines exceeds 20 years. The State Department Visa Bulletin, where, as of September 2011, it stated the U.S. government would only process applications filed prior to July 8, 1988 for siblings from the Philippines. In other words, American citizens with brothers or sisters in that country who filed while Ronald Reagan was still president of the United States and before the Berlin Wall fell are still waiting for their relatives to join them. For siblings from countries other than Mexico and the Philippines the wait times are closer to 10 years.[21] (All estimates are based on an examination of the visa bulletins and other data from the State Department and U.S. Citizenship and Immigration Services. Wait times can vary based on factors beyond the scope of this analysis, such as economic conditions.)

Table 6
Estimated Wait Times for Family-Sponsored Immigrants

	China	India	Mexico	Philippines	All Other Countries
Unmarried Adult Children of U.S. Citizens (1st Preference) 23,400 a year	7 year wait	7 year wait	18 year wait	15 year wait	7 year wait
Spouses and Minor Children of Permanent Residents (2nd Preference – A) 87,934 a year*	3 year wait	3 year wait	3 year wait	3 year wait	3 year wait
Unmarried Adult Children of Permanent Residents (2nd Preference - B) 26,266 a year	8 year wait	8 year wait	19 year wait	10 year wait	8 year wait
Married Adult Children of U.S. Citizens (3rd Preference) 23,400 a year	10 year wait	10 year wait	19 year wait	19 year wait	10 year wait
Siblings of U.S. Citizens (4th Preference) 65,000 a year	11 year wait	11 year wait	15 year wait	23 year wait	11 year wait

Source: U.S. Department of State Visa Bulletin, September 2011; National Foundation for American Policy.

[21] Wait times for sponsored family immigrants are estimated based primarily on an examination of the priority date cut-offs listed in the State Department Visa Bulletin. Due to the per country limit and economic or other factors that may cause applicants to abandon petitions, greater precision in estimating the wait times for family-based immigrants is difficult.

The expected waiting times are quite long for other family categories as well. A U.S. citizen petitioning for either a married (3rd preference) or unmarried (1st preference) son or daughter (21 years or older) from Mexico can expect to wait about 18 years.[22] There is a similar wait time for married sons and daughters from the Philippines. The wait is an estimated 7 years for U.S. citizens with unmarried sons and daughters in other countries.[23]

The spouses and children of lawful permanent residents (green card holders) – the second preference (2A) – also experience long waits for legal immigration, with the current wait time estimated to be about 3 years. The wait for unmarried sons and daughters of lawful permanent residents (2B) is about 8 years for all countries except Mexico, which has a 19 year wait, and the Philippines, where the wait is approximately 10 years.[24]

Table 7
Family-Sponsored Immigrants Waiting For Processing Abroad (November 2010)

Family-Sponsored Preference Categories and annual quota	Individuals Waiting in Immigration Backlog for Processing at Overseas Post
1st Preference – Unmarried Adult Children of U.S. Citizens (23,400)	271,018
2nd Preference (2A) – Spouses and Minor Children of Permanent Residents (87,934)	361,038
2nd Preference (2B) Unmarried Adult Children of Permanent Residents (26,266)	552,573
3rd Preference – Married Adult Children of U.S. Citizens (23,400)	853,083
4th Preference – Siblings of U.S. Citizens (65,000)	2,515,062
TOTAL	4,552,774

Source: "Annual Report of Immigrant Visa Applicants in the Family-sponsored and Employment-based Preferences Registered at the National Visa Center as of November 1, 2010," U.S. Department of State, Bureau of Consular Affairs. Note: The formal names of the categories cited above utilize "sons and daughters" and "brothers and sisters" in place of "adult children" and "siblings." A proportion of individuals on the list may be in the United States but have chosen to be processed at an overseas post. There are also several hundred thousand individuals not on this list who will be processed inside the United States via adjustment of status.

[22] Ibid.
[23] Ibid.
[24] State Department Visa Bulletin. The spouses and minor and adult children of Permanent Residents category is 114,200 annually "plus the number (if any) by which the worldwide family preference level exceeds 226,000." 75% of spouses and minor children of lawful permanent residents are exempt from the per-country limit. Wait times are approximate as of May 2010.

THE FAMILY CATEGORIES

An "immediate relative" of a U.S. citizen can immigrate to America without being subjected to an annual quota. This is important, since it is the relatively low quotas in the family and employer-sponsored preference categories that lead to waits of often many years for would-be immigrants. While there is no numerical limit in the immediate relative category, processing would still normally takes several months. The three primary immediate relatives included in the category are: spouses of U.S. citizens; unmarried children of a U.S. citizen (under 21years old, or under 16 if adopted);[25] and parents of U.S. citizens, if the petitioning citizen is at least 21 years old.[26]

Below are the descriptions of the four family-sponsored preferences as detailed in the monthly visa bulletin:

"**First** – Unmarried Sons and Daughters of Citizens: 23,400 a year.

"**Second –** Spouses and Children, and Unmarried Sons and Daughters of Permanent Residents: 114,200 A. Spouses and Children: 77% of the overall second preference limitation, of which 75% are exempt from the per-country limit; B. Unmarried Sons and Daughters (21 years of age or older): 23% of the overall second preference limitation.

"**Third** – Married Sons and Daughters of Citizens: 23,400.

"**Fourth –** Brothers and Sisters of Adult Citizens: 65,000."[27]

The policy rationales offered for eliminating family immigration categories in recent years fail to hold up under scrutiny, appearing more contrived than substantive. For example, some have argued that the wait times in some of the family categories are so long that it gives people "false hope." But this argument strikes one as crying "crocodile tears" for those waiting in line. The fact that long waits exist in some categories simply means that Congress has not raised the limits to correspond with the demand. The solution is not to eliminate categories and thereby guarantee Americans in the future could never reunite with certain loved ones.

WHY THE CALLS TO REDUCE FAMILY-SPONSORED IMMIGRANTS?

In all the various calls made over the years to eliminate family categories there has been no real policy rationale offered for inflicting a policy that would create so much hardship on so many Americans. The argument appears to rest on a presumption that the goal of U.S. society should be to keep as many foreign-born people out of the

[25] Susan Fortino-Brown, "Family-Sponsored Immigration, in *Navigating the Fundamentals of Immigration Law: Guidance and Tips for Successful Practice, 2007-08 Edition*, ed., Grace E. Akers, (Washington, DC: American Immigration Lawyers Association, 2007), p. 315. She notes, "If the child is a natural sibling of a child who has been adopted under the age of 16, the older sibling may immigrate through adoption by the same parents before the age of 18."

[26] Ibid., p. 311.

[27] Ibid. Under the law, if numbers are not needed in the fourth preference, they are added to the first preference. The third and fourth preference could also receive additional numbers if the categories above them are not fully utilized. Since all the categories are oversubscribed this part of the law does not have a practical impact on the annual flow.

country as possible. Therefore, it is argued, Congress should eliminate at least some family categories, even if it serves no real purpose to do so.

The 65,000 individuals who enter through the sibling category each year equal about 6 percent of overall U.S. legal immigration in a given year. And the annual flow from the sibling category represents only 0.02 percent of the U.S. population. Similarly, the 23,400 in each of the categories for the sons and daughters of U.S. citizens – 21 or older, unmarried and married – equal only about 2 percent of overall legal immigration and 0.008 percent of the U.S. population annually. Eliminating these categories would produce only a small drop in overall legal immigration and lead to great hardship for tens of thousands of Americans and their loved ones. It is difficult to argue denying the reunification of these individuals with American families serves any legitimate policy purpose – and a general dislike of immigrants or immigration is not a legitimate policy purpose for a member of Congress.

Even if Congress eliminated certain family categories, it seems inconceivable Congress would do so without "grandfathering" in all those who already have pending family petitions and are waiting for an immigrant visa to become available. It would be an extraordinary act of bad faith to deny those who have been waiting for years the opportunity to complete the immigration process.

Table 8
Adult Children and Siblings of U.S. Citizens: Small Percentage of Annual Immigration Flow and U.S. Population (2010)

Category	Percentage of U.S. Legal Immigration Annually	Percentage of U.S. Population Annually
Siblings of U.S. Citizens	6 percent	0.02 percent
Unmarried Sons and Daughters of U.S. Citizens (21 or older)	2 percent	0.008 percent
Married Sons and Daughters of U.S. Citizens (21 or older)	2 percent	0.008 percent

Source: National Foundation for American Policy analysis of 2010 legal immigration numbers as reported by Office of Immigration Statistics, Department of Homeland Security.

THE CHAIN MIGRATION MYTH

As noted in a May 2010 NFAP report, one argument made for eliminating family categories is it would reduce something called "chain migration." However, "chain migration" is a contrived term that seeks to put a negative light on a phenomenon that has taken place throughout the history of the country – some family members come to America and succeed, and then sponsor other family members.

The U.S. Citizenship and Immigration Service Ombudsman helped illustrate how long it can take for even one person to immigrate to the United States,[28] let alone the time it would take for that immigrant of the immigrant's spouse to become a citizen, file the paperwork for a relative, and wait for that relative to enter. The Ombudsman used the example of an unmarried adult son or daughter from Mexico. Table 9 uses the same figures, but substitutes "married" for unmarried to illustrate the example. The wait time for married sons and daughters is longer than for unmarried, which means this example underestimates the actual years of waiting.

Table 9
The Myth of Chain Migration: 41 Years Passing Between Application for First Immigrant and Entry of Second Family-Sponsored Immigrant

Action	Year Occurred	Years Elapsed
U.S. Citizen Files a Petition for Adult Married Son or Daughter Who is a Citizen of Mexico	1992	
Immigrant Visa Becomes Available	2010	18 years
Administer Consular Processing, Security Checks, and Interviews	2011	1 year
The Spouse of the New Immigrant Waits 5 Years and Applies to Become A Citizen	2016	5 years
Completes Naturalization Process	2017	1 year
Now a U.S. Citizen, the Spouse of the Former Adult Married Son or Daughter from Mexico Files a Petition for a Brother	2017	0 year
Immigrant Visa Becomes Available	2032	15 years
Administer Consular Processing, Security Checks, and Interviews and the "Chain" Relative Enters	2033	1 year
Total Time Between the Application of the First Immigrant and the Entry of the Second immigrant in the "Chain"		**41 years**

Citizenship and Immigration Services Ombudsman, *Annual Report 2010*, U.S. Department of Homeland Security, June 30, 2010, p. 32.

[28] Citizenship and Immigration Services Ombudsman, *Annual Report 2010*, U.S. Department of Homeland Security, June 30, 2010, p. 32.

Using the Ombudsman's figures, a U.S. citizen filed a petition for an adult son or daughter who is a citizen of Mexico in 1992. A total of 18 years would pass until 2010, when the immigrant visa for that adult son or daughter would become available. Another year would pass to administer consular processing, security checks and interviews. Finally, in 2011, 19 years after the U.S. citizen filed the petition, the son or daughter could legally immigrate to the United States.

The example illustrated in the table assumes the spouse of the married son or daughter decided to file a petition for a sibling. That spouse would need to wait approximately 6 years to become a U.S. citizen. Then, in 2017, the spouse could likely file a petition for the sibling to immigrate. Based on current waiting wait times, it would take until about the year 2032, or another 15 years, for an immigrant visa to become available for a sibling from Mexico. After another year for processing, the sibling could immigrate in 2033 – 41 years after the initial application was filed for the son or daughter of the U.S. citizen. This does not sound like the "endless" chain of relatives heard about from critics. In addition, all of the immigrants in this example would immigrate under the legal quotas established by Congress.

More Visas Would Reduce Family Wait Times

The primary way to shorten the wait time for family-sponsored immigrants is to add more visas beyond the annual total of 226,000. Relaxing the per country limit would help those with the longest wait times, particularly from Mexico and the Philippines. The Chaffetz-Smith bill would move the per country limit to 15 percent for family categories, which would aid those who have been waiting a decade or longer in some categories. The USCIS Ombudsman has noted that between FY 1992 and FY 2009, 241,928 family-sponsored preference numbers went unused, primarily due to administrative issues within the federal government. If those numbers were made available, they would reduce wait times in the family categories. To the extent the annual quotas were raised for specific preference categories, then it would also reduce the wait times. For example, raising the annual quota of 23,400 for the unmarried sons and daughters of U.S. citizens by 10,000 a year would, over time, reduce the wait times by a number of years.

Conclusion

Unlike seemingly intractable budget or foreign policy issues, the problems with employment-based and family-sponsored green cards can be solved with small changes to the law. Eliminating the per country limit for employment-based immigrants and liberalizing it for family-sponsored immigrants would have an important positive impact. Raising the quotas or providing exemptions from those quotas, as well as utilizing unused visas from previous years could significantly reduce waiting times. Such reforms are necessary. After all, an ability to wait a long time should not be the characteristic most prized in an immigrant to the United States.

APPENDIX

Appendix 1
Unused Employment-Based Visas FY 1992-FY 2009

Fiscal Year	Unused Employment Preference Numbers
1992	21,207
1993	0
1994	29,430
1995	58,694
1996	21,173
1997	40,170
1998	53,571
1999	98,491
2000	31,098
2001	5,511
2002	0
2003	88,482
2004	47,305
2005	0
2006	10,288
2007	0
2008	0
2009	0
2010	0
Total	**506,410 (180,039 were recaptured by special legislation)**

Source: U.S. Department of State; USCIS Ombudsman, *Annual Report to Congress*, June 2010, p. 35.

About the Author

Stuart Anderson is Executive Director of the National Foundation for American Policy, a non-profit, non-partisan public policy research organization in Arlington, Va. Stuart served as Executive Associate Commissioner for Policy and Planning and Counselor to the Commissioner at the Immigration and Naturalization Service from August 2001 to January 2003. He spent four and a half years on Capitol Hill on the Senate Immigration Subcommittee, first for Senator Spencer Abraham and then as Staff Director of the subcommittee for Senator Sam Brownback. Prior to that, Stuart was Director of Trade and Immigration Studies at the Cato Institute in Washington, D.C., where he produced reports on the military contributions of immigrants and the role of immigrants in high technology. He has an M.A. from Georgetown University and a B.A. in Political Science from Drew University. Stuart has published articles in the *Wall Street Journal*, *New York Times*, *Los Angeles Times*, and other publications. He is the author of the book *Immigration* (Greenwood, 2010).

About the National Foundation for American Policy

Established in the Fall 2003, the National Foundation for American Policy (NFAP) is a 501(c)(3) non-profit, non-partisan public policy research organization based in Arlington, Virginia focusing on trade, immigration and related issues. The Advisory Board members include Columbia University economist Jagdish Bhagwati, former U.S. Senator and Energy Secretary Spencer Abraham, Ohio University economist Richard Vedder, former INS Commissioner James Ziglar and other prominent individuals. Over the past 24 months, NFAP's research has been written about in the *Wall Street Journal*, the *New York Times*, the *Washington Post*, and other major media outlets. The organization's reports can be found at www.nfap.com.

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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.

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]

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[3] Giovanni Peri, *Immigrants, Skills, and Wages: Measuring the Economic Gains from Immigration*, (Washington, DC: Immigration Policy Center, March 2008), 7.
[4] Ibid.

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,

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[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.

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.

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.

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.

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[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.

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]

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[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.

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

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.

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]

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[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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Stuart Anderson is Executive Director of the National Foundation for American Policy, a non-profit, non-partisan public policy research organization in Arlington, Va. Stuart served as Executive Associate Commissioner for Policy and Planning and Counselor to the Commissioner at the Immigration and Naturalization Service from August 2001 to January 2003. He spent four and a half years on Capitol Hill on the Senate Immigration Subcommittee, first for Senator Spencer Abraham and then as Staff Director of the subcommittee for Senator Sam Brownback. Prior to that, Stuart was Director of Trade and Immigration Studies at the Cato Institute in Washington, D.C., where he produced reports on the military contributions of immigrants and the role of immigrants in high technology. He has an M.A. from Georgetown University and a B.A. in Political Science from Drew University. Stuart has published articles in the *Wall Street Journal*, *New York Times*, *Los Angeles Times*, and other publications. He is the author of the book *Immigration* (Greenwood, 2010).

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Ms. LOFGREN. First, before I ask any questions, I would like to thank all of the witnesses for being here today and for their expertise and the thoughtful statements you have made.

As many of you know, I introduced a bill a short while ago that addresses a whole multiplicity of issues, including the need to keep master's and Ph.D. students who can create jobs here and a number of—reforming the H-1B program to make it truly a temporary program and to make sure that H-1B visa holders aren't under-

paid, undercutting the whole market. I think it is a good package, and I would like to recommend it to all of you.

One of the issues I wanted to mention—and it really goes to the study I have just talked about—has to do with the per-country limitation as it relates—well, it is a problem on the family side as well, but on the employment side. If you take a look—for example, Iceland. A great country, I am sure. The population is about 300,000 people. They have the same number of visas as India, with a population of 1.1 billion. So it is no wonder that this doesn't work very well. And it needs to be fixed.

However, the study shows us that just eliminating those categories is not going to fix it. Because if it is 70 years under the current system, if you eliminate the caps it is 12 years for everybody. And I don't think 12 years is competitive with the rest of the world—not with Canada, not with Australia, not with the people who are competing for the very people we are trying to get to stay here, build companies, and create jobs. So I just wanted to mention that.

I had a bill a couple of years ago with Congressman Goodlatte to do the elimination of per country limits, but we had a companion bill with Congressman Sensenbrenner to recapture unused visas. And it was the two together that actually worked.

I want to thank—also, I see the IEEE is here today. And I want to thank SIA and the IEEE for the leadership that they have shown in putting together proposals to make this whole system work. As well as the testimony, Ms. Whitaker, about the need for master's degrees, not just Ph.D.s, I think that is key.

Now, I wanted to ask you, Mr. Nassirian—your comments were very, very helpful. In the bill that I introduced, we don't want the system to be gamed. What we want—I mean, if you just got your Ph.D. in electrical engineering from Stanford, there is a good bet we might want to you to stay here and build some companies. It is not the "Fly-by-Night U." guys that we want.

And so what we put in was, we have the National Science Foundation certify research universities. Right now the Carnegie Institute does that. And I envision that the National Academies and Carnegie and others might provide advice to the Science Foundation. But it is about 200 universities in the United States, and I really think that is all it should be. Because that is the group—this isn't an education bill; this is about jobs for Americans.

And do you think that that would solve the issue that you have identified?

Mr. NASSIRIAN. Representative Lofgren, all of these institutions are my members, and they are all above average. So I——

Ms. LOFGREN. Right. Maybe that is not a fair question to ask.

Mr. NASSIRIAN [continuing]. Shouldn't be in the business of separating 200 of them from the rest.

But I would suggest, first of all, if you assigned a task to the—it is vexing, because there was a multiyear effort by the National Research Council to create rankings, something as seemly simple as rankings, of graduate programs. They produced one of the most confusing, four-dimensional——

Ms. LOFGREN. No, but I don't rankings.

Mr. NASSIRIAN [continuing]. Matrices I have ever seen. And nobody can agree on what the rankings should be.

Ms. LOFGREN. If you can get an award for research as a research university in the hard sciences—and your testimony on what is "STEM" is very helpful and needs to be addressed. That is very different than, you know, you would like to be a hard-science school.

Mr. NASSIRIAN. Sure. I suspect there are ways of legislatively defining, as opposed to simply handing it to an agency. Remember, NSF, as I just mentioned, actually includes behavioral sciences in its definition.

Ms. LOFGREN. Yes. We need to give guidance on what we want. I love poetry, but we are not trying to keep the poets here.

Mr. NASSIRIAN. The policy incentive ought to be—there are ways of legislatively framing certain kinds of de minimis research activity before an institution becomes eligible.

I suggest that it has to be legislative because if you assign it to an agency, the institution that missed the 200 mark by 1 ticker will argue for perpetuity that they really ought to have been on the other side of the law.

Ms. LOFGREN. Yeah.

Mr. NASSIRIAN. So there are ways of defining it, I suspect, through some kind of ratio analysis.

Ms. LOFGREN. Yes. I see that my time—I have so many questions, Mr. Chairman. Maybe we will do a second round.

But I am hopeful that we can come together and do something with green cards for the top graduates who will create jobs, that we can do something that addresses the inequity on the per-country issue by not only eliminating it but providing enough visas so it actually will work and allow America to be competitive, along with the other reforms that are necessary in the temporary H-1B program that I think are essential to have credibility.

So, with that, Mr. Chairman, I would yield back in the hopes that we will have a second round.

Mr. GALLEGLY. The gentleman from Texas, Mr. Smith.

Mr. SMITH. Mr. Chairman, I am happy to have the gentleman from Iowa, Mr. King, ask his questions. Then I will ask mine in sequential order.

Mr. GALLEGLY. Okay.

Mr. SMITH. Thanks.

Mr. King?

Mr. KING. Thank you, Mr. Chairman.

I thank Chairman of the full Committee, Mr. Smith, for giving me this opportunity.

I appreciate the testimony of the witnesses.

And I am just sitting here thinking, we are often looking at immigration policy piecemeal, and how does it fit in to the whole? And we are often also looking at the arguments that are the strongest to make changes in the current policy that we have. And I think that this argument that you have made here is one of the strongest arguments to make those changes.

I would direct my first question to Mr. Lowell, I believe, and that would be this: that we bring into this country, on average, legally, over a million people a year—by far the most generous nation on Earth, and we all know that.

The advocacy that comes with, not a bill underneath us, but a concept here, would you endorse the idea of increasing H-1Bs within these categories that you all testified about if we offset and reduced those numbers from other visa categories?

Mr. LOWELL. If that were doable. I am not sure that it is.

Mr. KING. Well, this is Congress, so, yes.

Mr. LOWELL. Well, I mean, having said that, I think the way I read the data is that permanent status tends to produce the best long-term results for immigrants. And I think that tends to be the best thing that employers are looking for.

It is kind of a tight walk. I mean, we do need the temporary workers. There is a reasonable and a rational demand for H-1Bs. But when you don't have enough slots in the permanent side to absorb them, you are going to be constantly in a problem. Because most people who come here and stay 6 years, they are going to want to stay, and employers are going to want them to stay because they have invested in them. So I think it is kind of tough to up the ante on that problem.

Mr. KING. Well, thank you, Mr. Lowell.

Mr. Wadhwa, you have looked at the psychology of this, and that is the heart of the testimony that you have given us. A lot of young people with good degrees want to go back to their home country for the reasons that you have described.

But from the psychology of this from the other side, we are looking at a national policy, and I am going to advocate this: that if you look at the growth in our jobs in this country prior to the downward spiral, it is directly proportional to the legal immigration that has come into the country. In other words, illegal immigrants have used up, swallowed up every new job that has been created by this economy in the decade prior to the downward spiral.

And so, in a nation that is that generous, would you support the idea of reducing some of the other categories in order to be able to accelerate toward citizenship some of the people that fit within this STEM definition that is part of our discussion today?

Mr. WADHWA. In the short term, the challenge is the million who are stuck in limbo who are going back and fueling our competition. We have to keep them here somehow. Because they are Western-educated, Western-skilled, and they are in very, very high demand.

So, first, let's figure out how to keep those people here, even if we do a one-time deal to legalize those people. I have suggested that if you said anyone who is here legally in that million, anyone who buys a house can get a green card immediately, that is one way. If they start a company—you know, for example, we need a startup visa very badly. If they start a company which employs more than five Americans in the next 3 years, they can get a green card.

So if we can do a quick fix to take care of that million—in the long term, yes, we do have to look at the system overall and juggle, do we need more of A or do we need more of B? At the end of the day, we are competing. The world has changed. It is not just—you know, we can't be as magnanimous as we have been in the past. We have to look after our own selfish interests, which means we have to figure out how we are going to grow our economy, how we

are going to boost economic growth, how we going to retain our competitive edge.

Mr. KING. If I could interrupt you for a moment, the words "selfish interest," I would like to explore that a little bit because I think our immigration policy should be selfish. I think it should be designed to enhance the economic, the social and the cultural well-being of the United States of America, and any other nation, Iceland included, should establish a policy for the same merit. Do you agree with that?

Mr. WADHWA. I agree with that 100 percent. It is all about America and America's long-term growth. It is not about doing good for the world. We need to do that also, but that is not what immigration policy is for.

Mr. KING. Then I would return to Mr. Lowell, and I would ask you if you care to comment on that. There are several countries in the world who have either established a policy or are in the process of working toward one.

I remember a hearing we had about 3 years ago on this Committee. It was on a merit system. These were all—it was Australia, Canada, the United Kingdom, either establishing a policy or working to establish a policy that set up a point system that scored five different categories of potential immigrant.

One was age. Bring them in while they are young enough that they can pay enough taxes to justify paying them Social Security when they are older.

Another one was education and the level of education skills they bring in.

The third one was job skills. Earning ability. That would be three and four.

And the fifth one was language skills, which is an indicator viewed by those countries as the ability to assimilate into the broader culture.

Could you support a proposal that would do that and a point system that would bring people in based on merit?

Mr. LOWELL. I mean, part of my point is exactly you need to set up some kind of selectivity mechanism. Just admitting migrants and more migrants is no guarantee that you are going to get the best and brightest. In part, that is what the discussion here is about in terms of masters versus Ph.D.s.

You know, I am not necessarily a fan of point systems. And the reason is, if you think about it, the United States already constrains certain occupations. Usually there is an occupational minimum and the employer is making a decision and they usually are going to bring in somebody that has English capacity.

So the thing about the United States is we are first in line, and I don't think that is going to change in the near future. These other countries that you mentioned are basically second in line. And what happens is that point system is following a different logic system, and I think part of our success has been that employers are in the driver's seat. The interesting thing is both Australia and Canada now have started awarding points for employee sponsorship. So I am not against that idea. It has some merit because it sets up selectivity, and I think that is what it is all about. But I think employers need to be left in the driver's seat.

Mr. KING. Our clock has run down, so I just thank you for your answer, and I just make the point that we are a country that has more people coming in right now than the jobs can accommodate. I appreciate your response, and I yield back.

Mr. GALLEGLY. Mr. Gowdy.

Mr. GOWDY. Thank you, Mr. Chairman.

Mr. Nassirian, what fields are we deficient in with respect to American students?

Mr. NASSIRIAN. What is your definition of "deficient?"

Mr. GOWDY. Deficient enough that we would have a program where we needed to get outside help.

Mr. NASSIRIAN. I have no position. I can tell you that there are disciplines that are now disproportionately enrolling non-U.S. citizens and non-U.S. residents, but I don't know that that is—by the way, that does not—the fact that 80 percent of all doctoral degrees in a particular field are awarded to non-U.S. residents does not, at least to me, necessarily suggest that there is a problem. To me it suggests that we have excess capacity possibly, and that we are exporting 80 percent of that capacity and essentially charging. But there is nothing wrong with that.

So it seems to me, and again I am a civilian here, I am not an immigration policy person. To me, based on what I am hearing, the primary sort of evidence has to be employment-based. I would hasten to add that some of the fields that we all worry about, Ph.D.s in mathematics, I think in the early mid-nineties there was a 13 percent unemployment rate for Ph.D.s in mathematics in the United States.

So I don't know that any categorical answer would be the one you are looking for. Certainly the Ph.D. for mathematics from MIT, who was likely to be the next math prodigy, we would want to keep. The concern we have is if you just label every Ph.D. in mathematics is as good as every other Ph.D. And they should all stay, you may find mismatches between what the policy goals might have been and what the outcome ends up being. But I don't know that the definition of deficiency is one that you need to——

Mr. GOWDY. I don't either, and that is why I asked.

Mr. Lowell, when I hear science and math, is psychology science? What fields—and is there some strategy we should be pursuing stateside to incentivize our students to want to go in these graduate programs?

Mr. LOWELL. Well, you know, there is a lot of definitional issues here: What is STEM, what is core STEM, what are the social sciences? I don't know. I mean, that is something you would have to wrestle with in how you set up an admissions system. Psychology, a broad definition can be included in STEM. So can economists for that matter. And a lot of these actually require—as my discipline, which is demography—require a fair amount of math skill. But that is different from the natural sciences or engineering or IT. Does that kind of answer your question?

Mr. GOWDY. It does. And I think both of you touched on potential pitfalls and areas in which abuse can be rife, and I am interested in shoring those up as well. So I would love it if you would extrapolate a little more if you want to, from your opening remarks on the

areas where abuse is a potential, in whichever order you would like.

Mr. NASSIRIAN. Unless there is a multitiered review system before U.S. residency is provided for someone, our concern is that a purely credentials-driven system will be abused, A. It is almost a certainty.

You know, the H1B category is currently being manipulated in ways that would make your head spin. The amount of forum shopping that goes on by immigration attorneys to essentially get a foreign credential evaluated as highly as possible would be stunning to most people, and it would be stunning to Members of Congress to know that there are no definitions of who is qualified to evaluate those credentials. I mean, I could hang up a shingle tomorrow and start to.

So the system will be abused. The more you rely merely on credentials, without giving a lot more by way of definitions, explanations, and additional triggers, the more likely abuse is going to take place. Frankly, it won't just be additive abuse. It is not just that now a bunch of people may not have had a mind to come in, it is the kind of abuse that will also undermine the American higher ed system because it will compromise the integrity of all credentialing agencies because the race to the bottom will begin.

Mr. LOWELL. I am leery of singling out any particular occupation or field of study. It is clear, though, that talking, for example, about H1Bs—and I imagine even the permanent market—there is a segmentation of employers. You have some good actors and bad actors. And I have some thoughts about that. But, you know, mostly what we need are systems that screen appropriately to try to get rid of that problem. I am a fan of post-employment audit systems that give us a realtime measure of what abuse rates are. We know that abuse in H1Bs run at least 20 percent.

In terms of specific fields of education, you know, that comes and goes any given year. I mean, petroleum engineers are really a hot commodity right now and I assure you their wages are outracing others at the moment. So it depends. It really depends year-to-year. And when you have soft labor markets, though, the potential for abuse is actually greater because workers and employers are trying to undercut the market a little bit.

Mr. GALLEGLY. The time of the gentleman has expired.

Ms. Jackson Lee.

Ms. JACKSON LEE. I would like to wait on my questioning. Thank you.

Mr. GALLEGLY. Mr. Smith.

Mr. SMITH. Thank you, Mr. Chairman.

Mr. Nassirian, you actually raised a subject that I want to ask all my questions about, because I think it is the overriding point, although you disqualified yourself from answering my questions because you said you don't want to get into policy. So I will ask the other panelists my questions. But I appreciate your raising the subject of abuses and how abuses might undermine both the STEM visas as well as the educational programs themselves. That is what I want to go to.

What I would like to do is ask the other three panelists five questions which I think you can answer yes or no. It all goes to

whether or not you could support a policy that limits applicants to these qualifications.

One, would you be comfortable limiting these individuals to graduates of research institutions that had been in existence, say, 10 or 20 years?

Ms. Whitaker, do you want to answer first? What I am trying to get at is avoid the mail order Ph.D.s and masters, obviously. But would you be comfortable limiting individuals who received these visas to those who had graduated from research institutions in existence for some number of years?

Ms. WHITAKER. For some number of years?

Mr. SMITH. Yes. Let's say it is arbitrary, 10 or 20. It shouldn't be a big problem. If it is a problem, I will limit the number of years or something like that.

Ms. WHITAKER. But we would absolutely support research institutions that are well-established and top-ranking that have been in existence for a number of years.

Mr. SMITH. That is my point. Okay. Mr. Wadhwa?

Mr. WADHWA. I think that is a sensible way of doing it.

Mr. SMITH. Mr. Lowell?

Mr. LOWELL. The devil is in the details, but yes.

Mr. SMITH. In general. This isn't a trick question. I am just trying to get some general parameters that we might explore.

What about would you be comfortable with requiring the individuals to have a job offer?

Ms. WHITAKER. Absolutely.

Mr. WADHWA. Yes, except for the start-up visa issue. If they start their own company, which in Silicon Valley you have to realize the energy and how these kids who graduate from Stanford and Berkeley start companies which become the next Facebook. With that exception, yes.

Mr. SMITH. Good point. Mr. Lowell.

Mr. LOWELL. Yes, job offers should always be primary, and I am with Vivek.

Mr. SMITH. What about this? Would you be willing to limit them to, say, have some academic minimum standard, maybe top half of their class, grade point average B or above, something like that? Some academic qualification?

Ms. WHITAKER. We do that anyway as a company, so certainly we already look at grade point average and require that.

Mr. SMITH. Okay. Mr. Wadhwa?

Mr. WADHWA. I think the employer should judge that, not—the employer should judge that. Because, you know, I was an average student. I don't know about you, but I wasn't at the top of my class. Yet I did pretty well.

Mr. SMITH. Don't ever confess that publicly.

Mr. Lowell?

Mr. LOWELL. Yes, I think some kind of minimum is probably a good idea.

Mr. SMITH. Okay. What about asking for a——

Mr. NASSIRIAN. May I weigh in on this one? I would urge you not to do it, because what it does, we run into this with scholarship programs, you end up counterintuitively rewarding lower standards because you get a higher GPA at an institution that is less rig-

orous. So I think the point that—yet I recognize where you are going.

Mr. SMITH. But if you are limiting it to established institutions, research universities——

Mr. NASSIRIAN. They are not all the same.

Mr. SMITH. No, but they are all fairly competitive.

Mr. NASSIRIAN. But generally what you do is you induce a student who will go to school A, leading research institution, school B, second tier. You go to second tier.

Mr. SMITH. You really think they would try to game the system like that? Okay. All right. Three out of four there. What about committing to stay in the United States for 5 years?

Ms. WHITAKER. I think it is the intent of all of the people that we are looking at is to stay in the United States.

Mr. SMITH. Well, that is what we hope. We hope they are rightly motivated. That may not always be the case. People do game the system.

Ms. WHITAKER. I think there are business conditions where I can imagine somebody had a green card, yet we wanted them to go for business reason to work temporarily in another country. So it is hard to say for business purposes that we would absolutely say stay in one country. We are a global company and we do tend to——

Mr. SMITH. The big argument for giving them visas is we hope and expect them to stay and contribute. And if they are not going to, why give them the visas? But anyway, Mr. Wadhwa, would you be comfortable with 5 years?

Mr. WADHWA. We want people to stay here, but you have to realize right now the government, when you interview them at the U.S. consulate, you ask them, do you plan to stay? If you answer yes, then you won't get a visa. It is the exact opposite of what we are talking about right now. So you really can't force people to stay.

Mr. SMITH. No, you can't force them. All you are doing—and it may even be unenforceable.

Mr. WADHWA. A pledge would be great. If we change the system so we try to bring in people who want to be permanent residents, it would be much better than what it is today.

Mr. SMITH. Mr. Lowell?

Mr. LOWELL. Do I understand the question? Do we want to ask them to stay 5 years?

Mr. SMITH. Yes. Commit to 5 years, yes.

Mr. LOWELL. I am not crazy about that either.

Mr. SMITH. Okay. That makes me question what your motive is, but we will leave that alone for right now.

The last one is—which was brought up at the end, I think, Mr. Lowell, by you—would you be comfortable limiting them to graduate degrees in natural sciences, engineering, or information technology?

Ms. WHITAKER. Yes. You said engineering, right?

Mr. SMITH. Information technology, natural sciences, or engineering.

Ms. WHITAKER. Engineering, yes.

Mr. SMITH. Okay. Mr. Wadhwa?

Mr. WADHWA. If that is all we could get, I would say yes, if that is the best we could do. I would want much more, because I know great marketing people who become great CEOs. But if that is the best we can do, then that is a good compromise.

Mr. SMITH. Maybe that is the exception to the rule, though.

Mr. Lowell?

Mr. LOWELL. I think I am in favor of that, sure. I think I am in favor. Again, I must be having problems hearing you. Did you differentiate Ph.D.s and masters by field?

Mr. SMITH. Yes.

Mr. LOWELL. Yes, I think that is reasonable.

Mr. SMITH. Okay, thank you.

Thank you, Mr. Chairman.

Mr. GALLEGLY. The time of the gentleman has expired. Ms. Jackson Lee?

Ms. JACKSON LEE. Mr. Chairman, with your indulgence, I would appreciate one more Member and then I would desire to take my 5 minutes.

Mr. GALLEGLY. Mr. Poe.

Mr. POE. Thank you, Mr. Chairman. Thank you for being here.

Ms. Whitaker, I appreciate you being here. I have always been a great fan of Texas Instruments because probably the second greatest invention ever made was the transistor radio, and I still have one somewhere, hidden. But anyway, I am concerned about a couple of things.

First, the immigration system we have I think needs to be overhauled. You set it aside and start over with it. The lottery system, where we let people come in because they win the lottery, is the silliest thing we have ever come up with. We ought to let people in the United States based upon the fact that we need them.

One concern I would hope we would get an answer to is, I get this complaint from parents that their kid can't get into a university because there are foreign students that are getting in. And this university takes the foreign student not because they are smarter, but because that country is paying cash and they are paying out-of-state tuition, and this is just an in-state tuition person who may need a scholarship to go to school. I get that complaint.

Whether it is valid or not, I want you all to address the issue of universities letting them in because they are paying more money than Americans. I am concerned about the fact that Americans are not seeking these degrees.

So let me start with Ms. Whitaker. I know you speak for TI. Do you think we are doing enough to ensure that qualified Americans are considered for these jobs they have at Texas Instruments, we as a society, as a country?

Ms. WHITAKER. As a country are we doing enough to have students in these programs?

Mr. POE. Americans.

Ms. WHITAKER. Americans.

Mr. POE. "Mericans."

Ms. WHITAKER. You know, that is something for which I think all corporations have a responsibility. I know at Texas Instruments there are a lot of things that we are doing. I think we can always do more, but there are a lot of things we are doing not only from

TI, but the TI Foundation. I am a member of the TI Foundation board. But we have programs where we are focusing on the students to try to get more students in K through 12, and everybody does have a handout that we submitted, but to get more students focused on engineering, on science and math, throughout their whole education.

There are programs that we have where we are bringing in teachers, or helping fund teachers, because we think teachers are some of the most critical people in keeping children and getting children interested. We have a huge number of employees that will go to schools. I did that after I got my bachelor's in electrical engineering. I was quickly recruited to go and visit schools and talk to kids about math and science and why it is important, because I think it starts at a very young age.

We also do things like advanced placement incentives to try to keep kids or get kids interested just to take the test, because studies have shown that if kids will take those advanced placement tests in math and science, then they will do better in school.

So there are a lot of different programs, bringing teachers into inner cities through Teach for America, bringing teachers in to teach in schools and stay there and try to make commitments to stay in those schools in inner cities, to just be there and help kids and help them be interested in math and science.

Mr. POE. Let me ask you this: Is it a problem that kids aren't interested in science, or that our education system is so bad they don't get a good science background, therefore they don't get into the universities and you don't hire them? Or is it a combination of this?

Ms. WHITAKER. Well, one of our biggest challenges isn't so much that kids don't go into engineering. But where we have our challenge, which we are talking about today is really in our Ph.D.s and our masters. We have bachelor's degree graduates in electrical engineering, a majority American. That is who we hire. As I said earlier, we don't sponsor green cards, or sponsor H1Bs for foreign students who have just received bachelor's, because we don't have to. It is getting them to go to that next level. It is the Ph.D. and the master's degree area that we have a challenge. More than 50 percent of these students are foreign nationals.

Mr. POE. So why don't they want to go to the next level? I guess that is my question. Why don't they want to go to the next level? They are not qualified education-wise or motivated. Which is it, or both?

Ms. WHITAKER. I don't really know the exact reason why they don't. I would assume it is some of all. I would assume it is because they want to get out and go get a job versus staying in and getting the next degree.

Mr. POE. How big a problem—I am sorry, I am just limited on time. How big a problem is this: Somebody in a foreign country comes to the United States. They go to one of our universities. They graduate. They have a Ph.D. in one of these areas. They go to work for you and they work for you for a period of years. They do real good work. We send them back home because they can't stay in the country, and then they go compete against us in some foreign country.

Ms. WHITAKER. That is a huge problem. That is what we are trying to avoid. We are absolutely trying to avoid educating and training students in the United States and sending them home to go compete against us.

Mr. POE. We don't want that to happen.

Ms. WHITAKER. We would love to have them here, to be on our team and play for Texas Instruments, instead of going to play for somebody else. That is exactly what we are trying to do.

Mr. POE. Thank you, Mr. Chairman. I yield back.

Mr. GALLEGLY. The time of the gentleman has expired. Ms. Jackson Lee.

Ms. JACKSON LEE. Thank you very much. Ms. Whitaker, welcome. Coming from Texas, I am well aware of the legacy of Texas Instruments. I have a series of questions that I would like you to help me with.

First of all tell me, if you can, by numbers or estimates of the numbers of jobs an immigrant who would be able to stay under any kind of visa in these particular areas—science, technology, engineering, math—might create at Texas Instruments. What I am saying is an immigrant with the expertise you say they need, how many jobs would they generate?

Ms. WHITAKER. We have today roughly 400 people who are in our green card process, and so that is people who today who are currently Ph.D.s, master's degree students, or employees with electrical engineering degrees that we employ. They have been waiting for up to a decade in some cases for a visa. We wish they could stay here and be permanent employees and they wish they could stay here and be permanent employees.

Ms. JACKSON LEE. I don't think you heard my question. So you have 400 of them. How many jobs have they created by their existence and the products they are producing, creating jobs out of their existence here?

Ms. WHITAKER. You know, it is not something that we track that we can tell exactly that somebody's new technology, new device, new IP, has created X number of jobs. It is not something that you can exactly measure. But it is certainly the way that we do create jobs through intellectual property, through patents, through new devices, new technology, that our customers then buy. And that is exactly what we do get from our master's and our Ph.D. students or employees that we have.

Ms. JACKSON LEE. Well, I am on your side and I have been on your side, but I think it is valuable for our Silicon Valley friends and for you to begin making that kind of analysis. You are a smart enough company to be able to do so. It is very difficult now to talk about these visas when we have a population of Americans that are unemployed. They may not be trained appropriately, but we have a generation of young people that we are trying to get in sync. And I know Texas Instruments has done a lot in that area. So I am very interested in that, so let me pursue that.

What efforts have you made in partnership with historically Black colleges and Hispanic-serving colleges to actually steer our population of Americans into those particular areas, and what results are you getting? How many African American Ph.D.s do you

have, how many Latino Ph.D.s do you have coming out of U.S. universities?

Ms. WHITAKER. Actually, it is one of the areas that we are quite proud of at Texas Instruments, is that we have a focus on hiring at universities above census, and we do just that. So we hire above census. One of the challenges that we have, and even though in the United States we may have 15 percent African American and 15 percent Hispanic in the general population, in electrical engineering that number is less than 5 percent. So not only do we need to do what we are doing, which is hiring above census, we also need to do things, which we are, which is actually helping students——

Ms. JACKSON LEE. Track into that area.

Ms. WHITAKER. Go into that area.

Ms. JACKSON LEE. Because I have a short period of time. So do you have a number that you can give me to let me know either how many you have in the pipeline or how many you have on staff, Ph.D.s in this area, for Latinos and African Americans?

Ms. WHITAKER. I actually don't have.

Ms. JACKSON LEE. Would you be kind enough to provide that back to the Committee, please, for my edification? I would appreciate it.*

Let me go to Mr. Wadhwa, because I am very excited about new starts. I think you are absolutely right about new starts. We should not leave them out, young bright individuals coming out with visas or if they have had academic visas. I would just ask the impossible, which is how do we mix those new-start geniuses with American students? Some of it, their alliances have already been made because they are in school together. But how else can we do so?

Mr. WADHWA. I wrote an article for the Washington Post which was titled "Why We Need a Black Mark Zuckerberg." It talked about the fact that Blacks are being left out all about. It was written about the dearth of women. Women are being left out altogether. It is a systematic problem in American society. It has nothing to do with immigration. This is a problem with attitudes in society, with the way we bring up children.

We have to look at the system. We also have to look at—you know, Indians right now constitute—one out of every start-up in Silicon Valley is started by an Indian. Thirty years ago it was zero. How did we go from zero to 15.5 percent? We set up networks and we started mentoring and helping each other.

We need to set those up now for the Blacks and for the Latinos and for the women, and start networking and helping each other. They have access to it, but it is a different discussion than immigration. I would love to be able to work with you on that if you need to.

Ms. JACKSON LEE. Let my just finally say I think this visa is valuable to Mr. Smith. I guess he is not here. I would not leave out institutions, for example, like Texas Southern University. It is not a Harvard or a Yale or a Berkeley or a Stanford, but it has some very strong science programs, pharmaceutical programs and Ph.D. programs.

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*The Subcommittee and Rep. Jackson Lee received a response from Gene Irisari, Director of Government Relations, Texas Instruments, to Rep. Jackson Lee's question. That response is not included in this printed record.

So if we are going to do this, we can't try to backdoor it, meaning that we want to be hard on immigration but open to STEM-type visas. We have to open it to universities whose programs are strong. I think our procedures need to be in place.

Mr. Chairman, I think we need to, however we come together on writing some sort of focus, we need to be able to generate or suggest that for these individuals that stay here, jobs are created. That is attractive to the American public. It is attractive overall that we create jobs by the individual genius that we retain here in the United States. And whether we hold them for 5 years, I think there should be some carrot, if we put incentive language in to say we would like a 5-year commitment. We have done that in the Peace Corps and everywhere else, so we should be able to do it with that kind of legislation.

I yield back.

Mr. GALLEGLY. The time of the lady has expired.

Mr. Ross.

Mr. ROSS. Thank you, Mr. Chairman.

Ms. Whitaker, Mr. Poe touched on this a little bit. I am from Florida and we have got 12 universities and community colleges there. And we make, of course, a substantial investment in some of these students, and then we see them leave, not only leave the State; after awhile they leave the country because their visas have expired.

I am sure Texas Instruments has made an investment of some significance, whether by way of scholarships or whatnot, in order to try to sort of incentivize to get these students to get their advanced degrees and then, of course, to try to keep them here.

My concern is, what if we do nothing? What if we as a Congress do nothing and do not increase these STEM visas? Is there a business plan that you all have discussed or considered that you will have to follow in order to meet your needs?

Ms. WHITAKER. We don't have a business plan prepared for not being able to hire half of the graduates that are coming out of universities. Unfortunately, we don't have a plan for that. We think it is absolutely critical to be able to hire half of the graduates coming out of universities at the Ph.D. and the master's degree level. And several people here have commented on unemployment, or we have available people. In electrical engineering, the unemployment rate is 3.7 percent, and so it is not an easy job to——

Mr. ROSS. But in order to maintain your competitive advantage on a global basis, would you have to consider maybe even relocating some of your R&D overseas, in a country that has a more acceptable immigration policy?

Ms. WHITAKER. Yes, absolutely. Like I say, we don't have a plan for it, but that is exactly what you have to do, because you have to be able to get the best and brightest. Our company is all about innovation. It is all about developing new electronic devices for customers to use. You would have to go to wherever you had to go to get the talent. We would love to get that talent here. We would love to get that talent out of U.S. universities. And they are here, and we have trained them and we would love to keep them, but we will have to go wherever the best and brightest talent is.

Mr. ROSS. Because it is your desire to not lose your competitive advantage and you will do what is necessary to maintain that and increase that if you can.

Ms. WHITAKER. Absolutely.

Mr. ROSS. I don't know who best to ask this, maybe Mr. Lowell. Based on the trend over the last 10 years, we have seen a real number increase of STEM visas being requested and we have seen a decrease in citizens, American citizens obtaining these advanced degrees, these master's and Ph.D.s in the STEM areas, or can you say?

Mr. LOWELL. It is a bit of a roller coaster. You know, STEM degrees crashed after 2001 and domestic enrollments went up. Some people just think that was demographic growth, though. Recent changes are different. It has been a bit of a roller coaster. So I don't think you can draw any easy conclusions.

Mr. ROSS. So to follow up maybe on what Mr. Poe was saying, our American students, are they necessarily declining in application for these advanced degrees, or are we seeing a greater influx——

Mr. LOWELL. No. In terms of the student pipeline, it has been pretty steady. In fact, it has seen a slow growth over the last 15-20 years, in fact for a long time. And that is likely to remain the case for the immediate future, you know, 10 years or so out. The challenge is, of course, that the composition is changing——

Mr. ROSS. We have seen an increase in demand based upon the advancement of technology, the advancement of research and development?

Mr. LOWELL. Employment in this area has been pretty flat for some time, and the BLS keeps on projecting large increases and they haven't happened. We have had back-to-back recessions, to be fair. So it is not—I hate to be academic about it.

Mr. ROSS. No, that is okay. You are one, and that is a good thing.

Mr. Wadhwa, 1980, you come over here. You decide to stay. You become an entrepreneur. You create jobs, two software companies. If you had come over here today under these circumstances, could you still do it as though you did it 30 years ago?

Mr. WADHWA. Right now today, I would be waiting 70 years to get my green card. In the meantime I wouldn't be able to start a company. And more likely than not, if I was one of my students, I would be looking for a job back in India or in Singapore or even in Chile. Chile is now trying to get all of our American entrepreneurs to come over there. They are giving them $40,000 just to come and start a company there.

Mr. ROSS. So while we are looking to try to create private sector jobs and incentivize entrepreneurs, we are taking this segment of the STEM visas and moving them aside.

Mr. WADHWA. In the 1 million people in the backlog, we probably would have tens of thousands starting companies if they had a choice today. We won't give them visas. This should be a no-brainer.

Mr. ROSS. I agree.

Mr. WADHWA. Anyone who starts a company, you know, they are here legally. There is no dispute about it. They are educated. American companies have hired them, so they are top-notch talent. They

are filing a quarter of America's patents. Well, anyone who starts a company, 3 years from now if you are employing five Americans—and again I am talking about Americans—you get a green card. What could be simpler than that? Why don't we agree on that? Both sides agree to it. Why aren't we making it happen?

Mr. ROSS. Mr. Lowell, my time is up.

Mr. LOWELL. Yes, quickly. I mean, to be on the other side of this, immigrants are at least 25 percent of a lot of these STEM-granting kinds of fields, so it is maybe not surprising. Their proportion has been increasing and their proportion is likely to keep increasing at current levels of migration. That is my basic message. I am not arguing to restrict numbers. I think we need to reshift the way in which they come in.

Mr. ROSS. Thank you. I yield back.

Mr. GALLEGLY. I thank the gentleman from Florida.

The Chair would now recognize the gentlelady from California, Ms. Waters.

Ms. WATERS. Thank you very much, Mr. Chairman, and Members. I am sorry I couldn't get here a little bit earlier, but I was anxious to get here despite being held up, because I think this is such an important discussion.

You must know that my office has been involved in putting together roundtables with industries that are involved in the hiring of STEM graduates, and we have programs that are attempting to attract young people and to guide them into the STEM pipeline. So many of us are very, very concerned about our lack of ability in this country to educate in the STEM advanced degree programs, and we are anxiously looking for a solution.

Let me just say that I understand the business community's need to hire STEM graduates and to retain them, and I have great respect for the mission and the jobs that must be done in these businesses, and I have great respect for those students who persevere and who come and who get trained. And I know that this whole discussion is about retention and allowing them to stay in the United States and to avoid having to go through such a rigorous process in order to do it.

My focus is on what we can do to educate our citizens right here in the United States, and particularly minorities. We are way behind, African Americans, Latinos, way behind in educating young people to be prepared for the high-technology jobs, for all of those jobs where you have to have this kind of STEM education.

So, while I am appreciative for some of what I know some industries are doing, much more has to be done both by the government and the private sector. As far as I am concerned, every student that wishes to be trained or developed in the STEM pipeline should be able to go to college and get advanced degrees without having to pay. They just should be able to do that. And I am not even talking about loans that they are saddled with for the rest of their lives. I am talking about if we are serious in this country about educating, we will make it possible for our students to get this education, regardless of whether or not they are able to afford it.

But the industries themselves, I know that you are doing some things, but you got to do more. It is easy if you can hire those who have been trained and you can retain them in the United States,

and, as you are being accused oftentimes, you can pay them maybe less than you would be paying American citizens. I don't know if that is true or not, but that is alleged, that there is a little exploitation going on here. But enough is enough, and we have got to do better. We must do better.

It seems to me that if any of the industries—Texas Instruments, for example, why don't you have your own private school? Why don't you have a way by which you not only train, but tailor people coming through the STEM pipeline or people who have been educated, tailor them to the jobs that you have and what your needs are going to be? Why don't you invest in your own education and opportunities for people who want to work in the industry to be educated and trained? Why don't you do that?

Ms. WHITAKER. We do. I guess what I would say is I agree wholeheartedly with you that we need to do both, that we need to——

Ms. WATERS. Tell me about your school.

Ms. WHITAKER. We do invest. We don't have a school. What I mean when I say I agree wholeheartedly is that we need to do both. We need to hire the people coming out of schools today and we need to better prepare people and encourage people who are not going to get those degrees, Americans who are not going to get those degrees, underrepresented groups that are not going to get those degrees. We need to better prepare them.

Ms. WATERS. Well, what are you doing? Are you doing scholarships? Are you contributing to educational institutions? How are you helping?

Ms. WHITAKER. We have a wide range of programs. We have invested over $150 million in the last several years on these programs, things like advanced placement education, incentives to students, incentives to teachers to encourage students, mainly in the Dallas School District, to get into math and science. We are funding teachers to come into Teach For America and through You Teach to bring more and better qualified teachers to the local schools in order to help students.

We are sending our employees to the local schools to help understand what engineering is, to help them get excited about and learn more about math and science. We have a wide range of programs, something called Visioneering, where we bring students and we bring engineers and we bring teachers all together so they can learn about what math and science is.

So there are a lot of programs that we are doing today, but I absolutely agree that there is more to do. We don't have our own school because it is not our core competency. Our core competency is developing and designing integrated circuits or computer chips, or chips, as people might call them.

Ms. WATERS. Yes. But if you don't have people to come to work and do what you need them to do, you can have your core mission but you may not be able to accomplish it because there are some of us who are not going to support retention or some of us are going to look at, you know, these visas and say, you know, enough is enough. America has got to commit itself to training and development. So what do you do then?

Mr. GOWDY. [Presiding.] The gentlelady's time has expired. I thank the gentlelady from California.

The Chair would now recognize the gentlelady from California, the Ranking Member of the Subcommittee, Ms. Lofgren.

Mrs. LOFGREN. Thank you for letting me make some concluding comments, because I think that this may be an opportunity where the "battling bickersons" between the parties can come together and agree on some things, and I think that is a very hopeful thing.

As I was listening to Mr. Smith—I am sorry he had to go to another meeting—I was thinking, that is in my bill. That is in my bill. I mean, to limit this to research institutions is essential. Issues have been raised about how to do that, and it is helpful but we can deal with that.

Yes, of course, you have to have the job offer. That is in the bill I have introduced as well. Yes, there needs to be some minimum standards. And in fact, there is a concern about grade inflation that was expressed to us by the universities. But we don't need the D students. There needs to be some standards here.

And, yes, we want people to stay here. And Mr. Wadhwa, you are exactly right. We have it backwards. In the bill we change student visas to dual intent. The last thing we want to do is have the smartest students in the world come here and promise never to stay. That is just backwards. So the bill that I have introduced would change that.

The definition of who we need I think is something we need to work on. But I think we are all going to agree, electrical engineering is going to be in that category. And I think it is worth looking at the numbers.

Now, master's degrees—this is from 2009, I think it is the latest figures—foreign students got about 7,000 master's degrees in the United States, and a little over 1,300 Ph.D.s. Now, not every one of those institutions would qualify as a research institution and maybe they didn't all get Bs either. And then not all of them would necessarily want to stay. So this is not a huge number of individuals we are talking about, but it is a key group that we are talking about.

I very much agree with my colleague from California, Ms. Waters, that we need to do a better job of investing in American students. And one of the things in the bill that I introduced is an allocation of fees, visa fees. It comes up to $500 million a year that would be put into STEM education for American students. I don't see these as alternatives. I mean, if we have the Ph.D. recipient from MIT who is going to go out and create companies, of course we want to keep that person here. And it is not instead of educating American students, it is both, to make a prosperous country.

So I just think we have an opportunity here to make progress. I am grateful to be permitted to make these additional comments and I look forward to working with all the Members of the Committee as well as our wonderful witnesses to have a success for America through job creation and immigration.

I yield back.

Mr. GOWDY. I thank the gentlelady from California. On behalf of all of us, we would like to thank our witnesses for your expertise, for your collegiality toward one another, and for your helpfulness to the Members of Committee.

Without objection, all Members will have 5 legislative days to submit to the Chair additional written questions for the witnesses, which we will forward and ask the witnesses to respond as promptly as they can so that their answers can be made part of the record.

Without objection, all Members will have 5 legislative days to submit any additional materials for inclusion in the record.

With that, I thank the witnesses again, and this hearing is adjourned.

[Whereupon, at 3:33 p.m., the Subcommittee was adjourned.]

APPENDIX

MATERIAL SUBMITTED FOR THE HEARING RECORD

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INTERNATIONAL NONPROLIFERATION AND TRADE
DEMOCRATIC CAUCUS

CONGRESSWOMAN SHEILA JACKSON LEE, OF TEXAS

JUDICIARY COMMITTEE

SUBCOMMITTEE ON IMMIGRATION POLICY AND ENFORCEMENT

HEARING ON: "*STEM THE TIDE: Should America Try to Prevent an Exodus of Foreign Graduates of U.S. Universities with Advanced Science Degrees?*"

STATEMENT

WEDNESDAY, OCTOBER 5, 2011,
1:30 P.M.
2141 RHOB

First, I would like to thank Chairman Gallegly and Ranking Member Lofgren for holding today's hearing examining the growing reliance of American science and technology sectors on foreign workers and whether the current visa system fits these needs.

I would also like to thank today's witnesses for taking the time to come in and share their expertise and experience with us:

- **Darla Whitaker,** Senior Vice President for Human Resources, Texas Instruments;
- **Lindsay Lowell,** Professor/Demographer, Georgetown University;
- **Barmak Nassirian,** Associate Executive Director, The American Association of Collegiate Registers and Admission Officers; and
- **Vivek Wadhwa**, Professor, University of California-Berkeley, Duke University, Harvard Law School) ; Columnist, The Washington Post and Business Week.

Today, we have an opportunity to examine a specific region of the immigration landscape – increasing the distribution of green cards (permanent residency status) to foreign born nationals who have attained advance degrees in science, technology, engineering, and mathematics (STEM). American companies are seeking employees who possess certain key STEM skills. The reality is the majority of students graduating from U.S. universities with this particular skill set are international students.

In my home state of Texas, the University of Texas at Austin awarded 67% of computer science and 76% of electrical engineering degrees to students who are foreign born. There are plenty of colleges and universities across the country with similar numbers. Students from all over the world are coming to the United States to take advantage of our world class expertise. Do we want to continue to educate these bright and talented minds only to send them out of the country to later compete against U.S. companies?

We must address the long regulatory delays and the inadequate employment-based immigration quotas that make it virtually impossible to hire an individual directly on a green card (permanent residence status), increasing the availability of H-1B visas to STEM graduates is crucial, otherwise skilled foreign nationals, particularly graduates of U.S. universities, could not work or remain in the United States. It can often take four years or more for the average U.S. employer to complete the process of sponsoring a skilled foreigner for permanent residence status due to federal government processing times and numerical limitations. There is hardly an employer in the U.S. willing to wait four years for a single employee.

H-1B visas are available for workers coming to the United States to attain of a bachelor's degree or higher in a specific specialty such as STEM. These visas allow foreign nationals to live, work, and study in the United States legally for up to six years.

Many of those seeking H-1B visas are doing so in order to take advantage of the United States' system of higher education. They come here in order to study at the world's most renowned colleges, universities, and research institutions. They take the knowledge and skills learned and enter into technical industries such as systems analysis and programming, electrical engineering and electronics, and other biological science fields.

Over the years, we have seen a high demand for these types of visas, and variances in the number of H-1B visas that are distributed. In 1997, we began to see a stark increase in demand for H-1B visas when the cap of 65,000 was met for the first time. In the years following, the cap has been raised to upwards of 195,000 to accommodate the growing demand. Laws were passed in order to ensure that H-1B petitions for institutions of higher education and nonprofit and governmental research would be exempt from the cap and not count against the limit on distribution of such visas.

However, in 2004, the cap was reduced back down to 65,000. Since then, there has been a constant growth in demand for H-1B visas, with the cap being reached earlier and earlier in each fiscal year. In fact, in fiscal year 2009, the cap was reached in April of 2008. Likewise, in fiscal year 2010, the cap was reached in December 2009. Here we are in 2011, and the cap on H-1B visas was reached in the very first weeks of January.

Essentially, the H-1B visa is an important tool for hiring foreign nationals who receive their advanced degrees from U.S. universities. As our economy recovers from the recent recession, and as markets become more global and competition increases, it would only make sense to allow those who gain their knowledge, skills, and expertise in the United States, to utilize such in the United States.

Giving these foreign nationals the ability to remain in the U.S. legally, and work in specialty STEM industries where they can apply their knowledge allows them to become contributors to our economy. Why should we educate people and then force them to leave our country and essentially apply their expertise elsewhere?

Sixty-seven percent of foreign-born nationals who received science and engineering doctorates in 2005 were still in the U.S. in 2007 (with a high 76% of those with computer and electrical and electronics engineering degrees). Clearly STEM graduates would like to remain in the U.S. It is completely counterproductive to educate foreign-born scientists and engineers, train them in our companies, and then release them to competitor nations – sometimes with a bad taste in their mouth from dealing with our flawed immigration system – at a time when American needs to lay the groundwork for economic growth.

As our President has said time and time again, in order to "win the future" and ensure the United States remains a superpower in a growing and developing global

economy, we must focus our attention on better educating our citizenry and spurring innovation. Allowing more visas to foreign nationals, and giving these visa holders the ability to remain authorized to live and work in the United States helps to keep the expertise that will spawn innovation within our borders.

According to the American Association of Engineering Societies, for the 2008-2009 academic year, foreign nationals comprised 43.9% of the master's and 54.6% of the Ph.D.s awarded in engineering by U.S. universities.

Furthermore, many of those seeking H-1b visas came to U.S. to study, and have already been working for U.S. companies. Under our current immigration system, there is no other direct path from student status to getting a green card. Many students face multi-year waits for permanent residence due to massive backlogs in the green card system. These students face the possibility of loosing their legal status as they await processing of their application for a green card. This is not how we should treat people who come to our country with the intent to better themselves and contribute to our economy.

My colleagues across the aisle would like us to consider immigration in the context of jobs – specifically, jobs for American workers – as we consider ways to improve our current system. Though we may not always agree on process, I, too, believe that

immigration has a great impact on American jobs and our economy, and I am in support of measures that will *truly* and *effectively* protect and create American jobs.

However, contrary to the opinions of some of my republican colleagues, I believe that *only a comprehensive approach* to reforming immigration – one that addresses not only enforcement, but the broken legalization process, and the supply and demand for unauthorized workers – will mend this system in a manner that will have tangible results, truly protect American jobs, and add to our economy.

During the 111th Congress, I introduced the "Save American Comprehensive Immigration Act," which takes into consideration all of the factors contributing to our broken immigration system. It addresses the issue of enforcement, but also takes into account the high demand for workers. Moreover, this bill, and other similar pieces of legislation introduced by my Democratic colleagues, forces us to remember that immigrants in our country, whether here legally or illegally, are still human beings – people with families, educating themselves, working, and supporting our economy.

Again, I'd like to thank today's witnesses for their testimony. Mr. Chairman, thank you and I yield back the remainder of my time.

CompeteAmerica www.competeamerica.org

Statement for the Record

House Judiciary Committee
Subcommittee on Immigration Policy and Enforcement

"STEM the Tide: Should America Try to Prevent an Exodus of Foreign Graduates of U.S. Universities with Advanced Science Degrees?"

October 5, 2011

Compete America is a coalition of U.S. employers, educators, research institutions and trade associations focused on the advancement of legal, employment-based immigration and committed to ensuring that the United States has the highly educated, highly skilled workforce necessary to ensure continued innovation, job creation and leadership in a worldwide economy.

We thank the Chairman, the Ranking Member, and members of the subcommittee for holding this hearing to explore the need to encourage top foreign graduates in science, technology, engineering, and mathematics (STEM) from US Universities to remain in America. Foreign STEM graduates, both PhDs and Masters degree holders, play an integral role in America's innovation ecosystem. From a global view, the majority of the best advanced degree STEM graduate programs are in the US, attracting top math and science students from every nation. As a result, Compete America companies rely heavily on US-based programs to find and recruit the world's most talented young technologists and scientists. As we look to the future and to our return to economic prosperity, US STEM industries will continue to fuel economic growth and create job opportunities for American workers. The pace of this growth will depend on the supply of highly educated professionals, both domestic and foreign, in our country. We should take steps today to secure one of our best sources of talent: those we have trained in our own US universities.

We believe this hearing and the topics covered in previous hearings by this subcommittee addressing our nation's highly skilled visa system are of deep importance not only to STEM industries but also to the future prosperity of our nation. For this reason we make three recommendations below highlighting legislative topics we believe can be addressed in the near-term. None by themselves will "fix" the system, but each will have a significant and positive impact on America's ability to recruit talent and compete globally in STEM industries:

1. Capture Top STEM Talent Graduating from U.S. Universities—As today's hearing will explore, more than half of all students enrolled in U.S. science, technology, engineering and mathematics (STEM) graduate programs are foreign born. We provide these students with the best technical educations the world has to offer, but when it comes

time to graduate, our immigration system encourages students to leave the country. Many seek employment regardless, but they find their options limited to temporary visas while they wait for green cards. We know these students are talented, and we know we want them to stay in America. We should do all we can to capture as much talent from U.S. universities as possible, including exempting U.S. STEM graduate students, both PhDs and Masters, with job offers from employment-based green card caps.

2. End Per Country Limit Inequity—Due to an arbitrary and outdated cap on the number of visas any single country can receive in a year, immigrants from some countries wait significantly longer for employment-based green cards than their counterparts from around the world. Eliminating per country limits is a simple technical fix that will shorten the wait times for the most backlogged countries by many years while distributing the burden of the green card shortage in a fair and equitable manner among all immigrants. Mr. Chaffetz recently introduced H.R. 3012, "The Fairness for High-Skilled Immigrants Act," to address this problem, and Compete America fully supports its immediate passage.

3. Preserve Access to Temporary Foreign Workers—America will always need ready access to talent from around the world. Immigration to the United States on a permanent basis does not make sense in every context. Temporary visas provide a straightforward solution for employers in need of immediate help in our highly skilled industries, for short-term internal company transfers or graduates of foreign universities. As we expand opportunities for permanent residency in America and decrease our reliance on H-1b visas, we must also preserve and properly enforce our nonimmigrant visa system.

In conclusion, the highly skilled immigration system shows great promise as a powerful tool in America's economic recovery. Beginning with the reforms listed above, we can unlock the potential of highly educated immigrants as entrepreneurs, innovators and job creators. We look forward to continuing our dialogue on foreign STEM graduates from US universities and other important issues with you and your staff, and we thank you again for the opportunity to provide a statement in support of this hearing.

Statement for the Record

U.S. House Committee on the Judiciary
Subcommittee on Immigration Policy and Enforcement

Hearing on: "STEM the Tide: Should America Try to Prevent an Exodus of Foreign Graduates of U.S. Universities with Advanced Science Degrees?"

October 5, 2011

We commend the Subcommittee for considering a smart change to our immigration laws that could immediately jumpstart our economy: offering green cards to those who earn advanced degrees in critical fields from America's universities.

America's immigration policy is broken, but – with sensible reforms – could do more to welcome the people with the precious expertise and talent that could drive economic growth and job creation. These are the kinds of immigrants who don't compete with U.S. workers, but instead complement them and expand the pool of jobs for all. They're the scientists who develop new technology. The engineers who conduct groundbreaking R&D. The medical researchers who think up new devices and products. They're the globally mobile cream of the crop, and they're key to our prosperity. And it's not only because of their special skills; they also give us knowledge of foreign markets that will help U.S. businesses increase their exports. Researchers have found that a 1% increase in immigrants working in advanced positions leads to a 3% increase in U.S. exports to their home country.

Our most critical need for talent is in the so-called "STEM" fields—science, technology, engineering, and mathematics —where jobs are growing three times faster than in the rest of the economy. The demand for STEM professionals reaches far beyond Silicon Valley into diverse fields like pharmaceuticals, medical devices, aerospace, and manufacturing. It's true that the U.S. workforce already has an extraordinary depth and breadth of skills. But it remains that there are only so many of the most vital experts and innovators around the globe, and the competitive edge will go to the countries that attract them.

The United States has one huge advantage in this race for talent: the unrivalled stature of our colleges and universities. According to the British publication, the *Times Higher Education World University Ranking*, 7 of the top 10 universities in the world are American. The U.S. is also the world leader in attracting foreign students – 22 percent of all those studying outside their

home countries choose the U.S. as their destination. And 60 percent of those are concentrated in critical fields like engineering, biological science, mathematics, and computer science. Foreign students represent 60 percent of those who earn a computer-science PhD in the U.S. They make up two-thirds of those who earn an engineering PhD from an American institution. And they earn half of all master's degrees in electrical engineering that are awarded by our schools.

These graduates have received a significant American investment in their education, have a proven track record of making the discoveries and innovations that propel business and create jobs for Americans – and they are already here on our soil. But when they graduate with their degrees, our immigration system has no permanent path designed for them. After a brief grace period to stay and work, our laws allow most of them only temporary permits and an ill-defined path to a green card, all limited by restrictive rules and quotas. Our laws simply do too little to accommodate the most valuable foreign workers, even those who have U.S. credentials. This is what Partnership for a New American Economy Co-Chair and New York City Mayor Michael R. Bloomberg calls "national suicide." That's why we've got to get smarter about the global competition for talent. Other countries are hustling to attract the top minds—and when those minds go elsewhere, they end up competing against us in the global marketplace.

So the concept discussed before the Committee is simply common sense: Foreign students in STEM fields who earn advanced degrees from a qualifying U.S. university should receive green cards to remain and work after graduation. Every one of them that remains strengthens our workforce and brightens the outlook for our economy. To ensure that America is truly getting the best and the brightest, Congress should set reasonable standards that ensure green cards for graduates of properly accredited and qualifying universities. And Congress should be strategic about how it defines the STEM fields, making sure to include some often-neglected areas—like actuarial science—where there's a persistent shortfall of expertise.

It's this kind of commonsense thinking—capitalizing on immigrants as assets, rather than treating them as rivals—that should guide our entire immigration system. And there's more Congress can do. Beyond the STEM initiative, we urge Congress to pursue several reforms to the immigration system—all of them budget-neutral and with bipartisan appeal—that are desperately needed to help renew the American economy:

- Create a visa program specifically designed for foreign entrepreneurs. Immigrants helped found a quarter of all high-tech companies over a 10-year period and are twice as likely as native-born Americans to start new companies overall. But while other countries roll out the red carpet, we offer no avenue expressly designed for foreign entrepreneurs whose new businesses would create well-paying U.S. jobs. A foreign entrepreneur with U.S. funding should have access to a temporary visa to start a company in America. If the business yields new jobs for Americans, the entrepreneur should receive a green card to grow the company in the U.S.

- Allow U.S. companies better access to highly skilled talent from around the world, including by expanding temporary and permanent visa programs for skilled employment and eliminating arbitrary restrictions like the country-by-country caps on visa numbers.
- Develop more reliable ways for U.S. industry to hire much-needed seasonal and other guest workers—workers that generate additional, better-paying job opportunities for Americans. For example, we need an improved program for legal, short-term agricultural labor, one that is large enough to meet the market demand, protects the rights of both American and foreign workers, and has the flexibility to serve businesses that by their nature must adapt to seasons and weather.

All of these reforms deserve bipartisan support for the same simple reason: They will recharge the economy and help create the jobs the American worker needs. We look forward to working with the Subcommittee on the STEM initiative and other critical changes to our country's immigration laws.

About the Partnership for a New American Economy

The Partnership for a New American Economy is a national bipartisan group of more than 350 mayors and CEOs in all 50 states making the economic case for sensible immigration reform. The Partnership's members include mayors who represent over 33 million residents in large and small cities across the country and business leaders who employ almost 4 million people in all sectors of the economy. The Partnership believes that to compete in the 21st century global economy, America needs an immigration system that secures our borders and attracts and keeps the best, brightest and hardest working from around the world.

The Partnership's Co-Chairs are Steven A. Ballmer, CEO of Microsoft Corporation; Robert Iger, President and CEO, Walt Disney Co.; J.W. Marriott, Jr., Chairman and CEO of Marriott International, Inc.; Jim McNerney, Chairman, President and CEO of Boeing; Rupert Murdoch, Chairman, CEO and Founder of News Corporation; Mayor Michael R. Bloomberg of New York; Mayor Julián Castro of San Antonio; Mayor Phil Gordon of Phoenix; Mayor Michael Nutter of Philadelphia; and Mayor Antonio Villaraigosa of Los Angeles.

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IMMIGRATION POL

October 18, 2011

he Honorable Elton Gallegly
hairman
ouse Judiciary Committee
ıbcommittee on Immigration Policy and Enforcement
'ashington, DC 20515

he Honorable Zoe Lofgren
anking Member
ouse Judiciary Committee
ıbcommittee on Immigration Policy and Enforcement
'ashington, DC 20515

Re: For the hearing record, concerning the October 5, 2011 hearing on:
STEM the Tide: Should America Try to Prevent an Exodus of Foreign Graduates of U.S. Universities with Advanced Science Degrees?

Dear Chairman Gallegly and Ranking Member Lofgren:

On behalf of the U.S. Chamber of Commerce, we would like to express our view that immigration reform is one of the most significant areas where Congress can legislate to stimulate job creation and we implore you to take action. The Chamber applauds the Committee for holding this hearing on a topic with direct impact to our nation's economic recovery, and requests that this letter be included in the hearing record, along with the attached (electronic version) of the Executive Summary of our study *Regaining America's Competitive Advantage: Making our Immigration System Work*.

The U.S. Chamber of Commerce is the world's largest business federation, representing more than three million businesses of every size, sector and region across the United States.

As this Committee is undoubtedly aware, the U.S. Chamber has long advocated for workable visa programs for both higher skilled and lesser skilled immigrant workers, both of which play a role in the vitality of the American economy. Neither high-skilled nor lesser skilled worker programs currently function appropriately, or even rationally.

In August 2010, the U.S. Chamber, in conjunction with the American Council on International Personnel, published a study entitled *Regaining America's Competitive Advantage: Making our Immigration System Work*[1] which highlighted that the competition for high-skilled labor is global, not domestic, and that our immigration policy must be amended to reflect this reality. Echoed by other economists, high-skilled immigrants as a group have uniformly been found by empirical evidence to play an important role in innovation.[2] Such workers contribute to creating new jobs as well as retaining positions for U.S. workers.

As recently explained at an event at the U.S. Chamber of Commerce, "Economists typically don't think that free lunches exist; but permitting more skilled immigrants to enter and stay is about as close as you can get to a free lunch."[3] As recognized by this Committee, in holding hearings concerning agricultural workers, there is also essential need in our country for lesser skilled workers to perform the hard work in many sectors of our economy with insufficient numbers of U.S. workers.

Our statement today, however, focuses solely on the topic of the hearing: whether reforms are necessary to retain sufficient numbers of Master's and Doctorate graduates from American universities needed by U.S. businesses in STEM fields (Science, Technology, Engineering and Mathematics). The answer is a resounding yes, and reforms should be made to both our immigration and education system.

NEED FOR STEM GRADUATES

We are witnessing a globalization of research, where both universities and commercial enterprises form transnational agreements to encourage collaborative and interdisciplinary research across borders and in public-private partnership.[4] Coupled with a dramatic shift in both Master's and Doctoral level research from individual curiosity-driven inquiries to team research on marketable projects,[5] the trend is toward graduate-level STEM degree holders being positioned to make important contributions to U.S. businesses. This certainly complements what U.S. Chamber member companies report about their hiring needs, which are often focused on Master's level graduates. For example:

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[1] http://www.uschamber.com/sites/default/files/reports/100811_skilledvisastudy_full.pdf. Study prepared for the Chamber and ACIP by Stuart Anderson, Executive Director of the National Foundation for American Policy. The study also rebuts misleading allegations by the AFL-CIO concerning the H-1B program.
[2] See, e.g., *From Brawn to Brains*, March 2011, P. Orrenius and M. Zavodny, at Page 11; *Regulating the Recruitment and Employment of Immigrant Workers*, June 2010, Migration Policy Institute, at Page 1.
[3] Comments at U.S. Chamber of Commerce event, *Immigration and American Competitiveness: the Challenge Ahead*, Sept. 28, 2011, by the Federal Reserve Bank of Dallas, Pia Orrenius, PhD.
[4] See, e.g., Science and Engineering Indicators 2010, Chapter 2, Higher Education in Science and Engineering (Globalization and Doctoral Education).
[5] See, e.g., id.

- An immigrant who completed a Master's of Science in the U.S. was a sought-after business process innovator, working in the pharmaceutical industry. This individual's business process transformation expertise has been integral to the success and profitability of the life sciences activities of his employer. Moreover, he has made vital contributions to the underlying model for pharmaceutical development in our country, improving health care quality and potential outcomes while reducing costs.

- A U.S. company established its own Center for Energy, Efficiency and Sustainability in order to integrate best practices for the long-term use of energy and other resources for the company, their customers, and the communities in which the company operates and serves. In recruiting for a position at the Center, the ideal candidate emerged with U.S. Master's level studies and post-completion employment experience in residential thermal energy management, a close connection to one of the company's products. With the academic research record and employment experience, he was uniquely placed to identify breakthroughs in the net-zero energy home space for the company.

- A Chinese-born engineer developed expertise through his U.S. Master's electrical engineering studies by research projects on excitation controllers and generator excitation systems which directly relate to a U.S. company's power electronics business.

The 2000 census indicated that immigrants comprise approximately half of the scientists and engineers in the U.S. with doctorates, "a remarkable statistic given that they otherwise represent only 12% of the U.S. population."[6] A focus solely on workers who possess a Doctorate is misplaced, though, since only about 2% of computer, mathematical, and engineering employment is geared for individuals who have earned a Ph.D.[7] Critically, more than 15% of workers in computer, mathematical, and engineering occupations are required to possess a Master's degree.[8] International students presently earn between one-third and one-half of Master's level degrees in fields corresponding to these occupations.[9] To the extent these workers increasingly are foreign-born, U.S. employers need our immigration system to facilitate the lawful hire and promotion of these high potential individuals.

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[6] *Immigrants' Success in Science Education and Careers*, University of California at Berkeley's Center for Research on Teaching Excellence, http://escholarship.org/uc/item/2m14z6np#page-7 . See also *Immigration Myths and Facts*, U.S. Chamber of Commerce May 2011, at Page 1, http://www.uschamber.com/sites/default/files/reports/16628_ImmigrationMythFacts_OPT.pdf

[7] 2008 American Community Survey.

[8] Distribution of workers possessing a Master's degree: 17.7% computer and mathematical science occupations, 16.9% architecture and engineering occupations. 2008 American Community Survey.

[9] See, Stuart Anderson, Keeping Talent in America, National Foundation for American Policy, October 2011, at Page 6, and Science and Engineering Indicators 2010, Chapter 2, Higher Education in Science and Engineering (Graduate Education, Enrollment, and Degrees).

Foreign student flows into the U.S., especially in graduate STEM fields, result in high levels of foreign students interested in remaining in the U.S. and contributing to American business. Moreover, "the United States can no longer assume that the world's most talented people naturally want to work in America. As China and India grow faster than the United States, they will be able to offer engineers and mathematicians, both their own and those from third countries, more job opportunities and higher incomes."[10]

Sponsorship of H-1B specialty occupation workers, the current feeder category for green card sponsorship, mirrors the diversity of skill sets for which employers have found that the most qualified candidate happens to be a foreign national.

Under current law, an employer who has found that the most qualified candidate for a STEM position happens to be a foreign national will utilize the H-1B category and then pursue employer sponsorship for green card status. It is important to note that U.S. company STEM needs are not just in computer-related occupations. Many Chamber companies engaging in STEM-related business activities, report that they hire individuals in project management or business analysis roles where the ideal skill set is formed though completion of an undergraduate STEM degree and graduate studies in a business discipline. For FY2009, the last year for which USCIS publicly released data breaking down H-1B sponsorship, 34.6% of new H-1B petitions were for computer-related occupations, but the remaining new petitions for initial H-1B classification were for architects and other engineers (12.5%), project leaders, technical and professional managers (12.5%), teachers (12.5%), public administration and other administrative specialties (11.6%), medicine and health jobs (9.4%), life sciences occupations (4.1%), mathematicians and physical scientists (3.1%), economists and other social scientists (2.5%), along with a variety of other occupations (less than 2% each).[11] It appears that around 65%-75% of H-1B sponsorship is in STEM occupations.

Presently, the H-1B category is widely used as the sole means to hire a STEM professional who is a foreign national already lawfully in the U.S., either as a student or as an H-1B worker for another company, following completion of a competitive recruitment by the employer. An artificial H-1B cap,[12] along with an artificial cap for employment-

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[10] Bruce Stokes, *The Global Skills Chase: The United States imports a big share of its technical talent. What if these immigrants don't want to come?*, National Journal, September 24, 2011, Page 31.
[11] *Characteristics of H-1B Specialty Occupation Workers for FY2009*, USCIS April 2010. http://www.uscis.gov/USCIS/Resources/Reports%20and%20Studies/H-1B/h1b-fy-09-characteristics.pdf .
[12] The H-1B cap has been met prior to the end of the government's fiscal year in FY1997-FY2000 and FY2004-FY2011 and will undoubtedly be met prior to the end of FY2012 as well. Demand for H-1B visas, though, varies from year to year based on employer and market needs and not based on the cap. For example, in the few years where Congress enacted a higher ceiling for H-1Bs, employers did not hire additional skilled foreign nationals simply because the annual cap was higher. In the fiscal years when the cap was set at 195,000 many visas went unused. Specifically, in FY2001, FY2002, FY2003 the H-1B cap was set at 195,000 and in each year, respectively, 163,600, 79,100 and 78,000 new H-1B workers were sponsored, following the business cycle mandates.

based green cards, does not reflect the 21st century reality on the movement and availability of STEM workers.[13]

COUPLING EDUCATION REFORM WITH IMMIGRATION REFORM

To the extent that graduate education or university study in certain fields is a prerequisite to the specialized skills and expertise needed in today's knowledge economy, pushing the interest and development by U.S. students in these fields starting at the K-12 level and continuing into higher education is an economic imperative As suggested by the National Science Foundation's annual report on Science and Engineering Indicators, the ratio of natural sciences and engineering (NS&E) degrees to the college-age population is one measure of the technical skill level of those entering the workforce. "Over time, the United States has fallen from one of the top countries in terms of its ratio of NS&E degrees to the college-age population to near the bottom of the 23 countries for which data are available. In 1975, only Japan had a higher ratio than the United States of NS&E degrees per hundred 20-24 year-olds (the college-age population). By 1990, a few other countries had surpassed the U.S. ratio, and by 2005 nearly all had done so."[14]

In the United States, undergraduate science and engineering degrees have consistently accounted for about one-third of all Bachelor's degrees for the past 15 years. By comparison, recent data shows that more than half of all Bachelor's degrees are awarded in science and engineering in Japan (63%), China (53%) and Singapore (51%).[15] Similarly, only about 5% of the Bachelor's degrees awarded in the United States are specifically for engineering, where as in Asia nearly 20% of Bachelor's degrees issued are in engineering disciplines. With the high number and share of science and engineering Bachelor's degrees in other countries, it makes sense that only a very small share of science and engineering degrees at the Bachelor's level in the U.S. are awarded to foreign students, approximately 4%.[16] To increase the number of native-born Master's and Doctoral students in science and engineering disciplines, we need to work to enlarge the pool of native-born science and engineering Bachelor's level graduates.

Many companies already attempt to address these skill gaps on their own. Some Chamber companies make education support programs a top priority.[17] For example,

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[13] See, e.g., *Regaining America's Competitive Advantage: Making our Immigration System Work* , at Pages 11, 17, 30, 32 (published by the U.S. Chamber and ACIP, Aug. 2010).
[14] Science and Engineering Indicators 2010, Chapter 2, Higher Education in Science and Engineering (International Changes in the Ratio of Natural Science and Engineering Degrees to the College-Age Population).
[15] Science and Engineering Indicators 2010, Chapter 2, Higher Education in Science and Engineering (International Science and Engineering Education).
[16] Science and Engineering Indicators 2010, Chapter 2, Higher Education in Science and Engineering (Undergraduate Education, Enrollment, and Degrees).
[17] See the Compete America coalition website for a summary of what some of the nation's largest high tech companies are doing to support education and workforce development. http://www.competeamerica.org/workforce/american-workforce.

Microsoft runs its own Partners in Learning, DigiGirlz, and Club Tech programs, among others, to encourage K-12 STEM education. Additionally, Microsoft focuses on hands-on learning by co-founding, with Georgia Tech and Bryn Mawr College, the Institute for Personal Robots in Education and co-founding, with NYU and other universities in New York, the Games for Learning Institute (G4LI).

Another large diversified manufacturing company has taken the following steps: While the company typically recruits only graduate students for its professional jobs, it also has created a program where it seeks out highly qualified candidates with undergraduate degrees who the company puts through a two-year corporate professional management program for recruited university graduates in the fields of engineering, manufacturing, finance, and other business specializations to expose participants to rotational assignments throughout the organization to develop both technical and management skills and create a diverse, knowledgeable global talent pool. Additionally, the company is a major contributor to U.S. colleges and universities and academic research projects.

The U.S. Chamber of Commerce has its own educational arm, the Institute for a Competitive Work Force (ICW), which promotes the rigorous educational standards and effective job training systems needed to preserve the strength of America's greatest economic resource, our workforce.

Recently, ICW released a report addressing what kind of business involvement it would take to truly make a difference in K-12 schooling. *Partnership is a Two-Way Street: What it Takes for Business to Help Drive School Reform*[18] explains and analyzes how business can function as a critical customer, a partner, or a policy advocate in primary and secondary education. As discussed in the report, leaders in Texas, Tennessee, and Massachusetts adopted each of these roles, thus stepping up to make a big difference in K-12 schooling. In each case, business leaders talked seriously and bluntly with educators. They recruited respected experts to lead the reform efforts. They built sustainable structures, brought top-level executives to the table, and stayed engaged. They tackled tough questions, understood that some steps would be political and unpopular, and took the heat when there was pushback.

Among its other ongoing activities, ICW conducts regional training for local and state chamber and business leaders, to create a leadership network in as many states as possible that is focused on the role business can play in improving education and workforce training. Also, ICW conducts an ongoing assessment of K-12 education in all 50 states and the District of Columbia through its *Leaders and Laggards*[19] report. To encourage students to be ready for post-secondary education, ICW maintains active

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[18] *Partnership is a Two-Way Street: What it Takes for Business to Help Drive School Reform*, U.S. Chamber of Commerce, Institute for a Competitive Workforce June 2011 http://icw.uschamber.com/sites/default/files/Partnership%20is%20a%20Two%20Way%20Street_2011.pdf

[19] http://www.uschamber.com/reportcard.

participation in coalitions focusing on both S&E and K-12 education, including Change The Equation, the Coalition for a College and Career Ready America, and the Business Coalition for Student Achievement.

RECOMMENDATIONS

By 2018, the U.S. economy will generate rising demand for highly-educated workers and, as more baby boomers retire, there is risk of substantial skill shortages.[20] The Chamber joins those economists who conclude that "improvements in worker skills and increases in educational attainment could help maintain and spur the creation of higher-paying jobs, which has numerous potential benefits for individual citizens and the economy as a whole."[21] Thus, taking steps to ensure Americans are receiving appropriate education to match with expected employer demands for workers should not be ignored. Of the 22 occupations with the highest projected annual growth to 2018 and beyond, the occupation classification with the second highest demand for workers is expected to be computer science, the fifth highest demand area is life and physical science occupations, and thirteenth highest growth area is architecture and engineering occupations.[22] To the extent that a large segment of graduate students in these fields are not native-born, Congress should take action to reform our laws so employers are able to hire the staff needed in these expected growth areas.

Addressing the needs for STEM professionals that allow U.S. employers to hire staff central to business success, without ignoring the educational reform also needed in our country, is within reach. Reforming our immigration laws to address the needs of U.S. employers for STEM graduates at the Master's or high levels would allow the very individuals to remain in the U.S. who are interested in making contributions to the American economy, who have already successfully navigated American culture, who have already shown they speak English, and who have already started adopting American research and business philosophies through their graduate studies, research, and training experiences. Given the economic imperative for immigration reform, now is the time to act on areas of common agreement concerning the impact of STEM employment on the nation's immigration system, including:

- Exempt Master's or higher graduates of U.S. institutions in certain fields from the H-1B quota, without a numerical limit, such as those in the natural sciences and engineering fields.

- Create a visa category, allowing both nonimmigrant and immigrant status, for entrepreneurs who have completed Master's or higher degrees from U.S. institutions in certain fields, such as those in the natural sciences and

[20] *Future Skill Shortages in the U.S. Economy?* National Bureau of Economic Research, July 2011, http://www.nber.org/papers/w17213. © David Neumark, Hans P. Johnson, Marisol Cuellar Mejia.
[21] Id. at Page 37.
[22] Id. at Figure 2.

engineering fields. Entrepreneurs would need to show they are qualified to establish a U.S. business and ultimately show they have created employment for Americans. Entrepreneurs who have garnered venture capital support from their employers, should also qualify for entrepreneur classification if the new business unit creates employment for Americans and it can be documented that the entrepreneur can be credited with establishing the new business unit.

- Create a new Employment-Based First Preference immigration category for Master's or higher graduates of U.S. institutions in certain fields, such as those in the natural sciences and engineering fields.

- Ensure that cap exemptions for Master's or higher graduates of U.S. institutions in STEM fields include recognition of employer demand for undergraduate STEM degrees in the relevant fields followed by graduate business training, where the individual has been offered U.S. employment by a company engaged in a STEM business activity.

- Protect the market place by ensuring that Master's or higher graduates of U.S. institutions who are not entrepreneurs are only entitled to cap exemptions when they have a job offer, since U.S. employers are well placed to determine the skill sets, quality of credentials, and quantity of workers needed for business operations.

- Exclude spouses and dependent children as part of the employment-based green-card quota, which would raise the percentage of workers relative to annual Lawful Permanent Residents. While even with this change, the ratio of workers to overall annual lawful immigration is still too small, it is a minor change that will have a huge impact on the long lines that immigrants and their employers currently face to obtain a green card, without conducting a major overhaul of the current employment-based system.

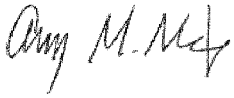
- Require USCIS to allow early filing of Adjustment of Status applications for employment-based immigrants in First, Second and Third Preference for Employment-Based immigration, to allow sponsored workers to file for Adjustment once an I-140 Immigrant Visa Petition is approved according to new "adjustment cut off dates" (after the date of I-140 approval but in advance of the State Department's "qualifying date," which is when the State Department determines if a consular processing applicant is documentarily eligible). This would allow USCIS to accurately report to the State Department concerning how many immigrants are documentarily eligible for permanent resident status at any given time. With pending Adjustment requests, employment based immigrants could complete their immigration paperwork, be adjudicated documentarily eligible, and obtain interim benefits as a pending

permanent resident once security clearances were completed, but no immigrant would obtain permanent resident status early or out of turn.

- Raise the H-1B cap by including a market escalator, so that the cap moves going forward, based on actual use – for example if cap met then next year increase 20%, if cap not met then revert to prior year numerical limitation or another set percentage decrease.

We look forward to working with you and supporting the STEM immigration reform process.

Sincerely,



Randel K. Johnson
Senior Vice President
Labor, Immigration and
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Amy M. Nice
Executive Director
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Attachment: Executive Summary for *Regaining America's Competitive Advantage: Making our Immigration System Work*
http://www.uschamber.com/sites/default/files/reports/100811_skilledvisastudy_execsummary.pdf

Statement for Inclusion in the Record of a Hearing Entitled

STEM the Tide: Should America Try to Prevent an Exodus of Foreign Graduates of U.S. Universities with Advanced Science Degrees?

Before the House Judiciary Subcommittee on Immigration Policy and Enforcement

5 October 2011

IEEE-USA
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To answer the question asked by this hearing: Yes, America should try to prevent an exodus of foreign graduates of U.S. universities with advanced science (and engineering, math and technology degrees). Doing so would strengthen the American economy, create jobs and improve our country's global competitiveness.

The best and simplest way to do this would be for Congress to accelerate the green card process for graduates of American colleges. International students who earn a Masters or PhD from an American university in a STEM field and who have an offer for a job appropriate for their degree ought to be able to secure an EB visa (green card) within a year of graduating.

IEEE-USA is the American component of the IEEE (Institute of Electrical and Electronics Engineers), the world's largest technical professional society. IEEE-USA represents 210,000 technology engineers across the United States. Our members are electrical engineers, computer scientists, aerospace engineers and other professionals involved with the creation and use of cutting edge technology.

Our members are also the Americans who will be most directly impacted by any increase in high-skill immigration. For over a decade, IEEE-USA has supported making it easier for highly-skilled international students to become American citizens because technology is the engine of our economy and engineers are among our nation's best job creators. This is also why IEEE members support programs to promote STEM education within the United States, including teacher training program, science fairs, robotics leagues and other programs designed to expose America's students to engineering.

Under current law, it is possible for many international students who earn Masters or PhD degrees in STEM fields to stay in the United States after graduating if they want to, but not under reasonable terms. Because EB visas are so scarce, graduates must spend years on a temporary work visa before getting their green card. While waiting on a temporary visa, workers may not switch jobs without losing their place in the green card line. They may not accept promotions or change their job responsibilities. Their spouses, many of whom have professional credentials, may not work at all. Nor are the workers or their spouses allowed to start new businesses, an unfortunate condition placed on some of the world's most entrepreneurial people.

These conditions directly harm the American economy. By locking new graduates into their first jobs, we force some of our economy's best workers to be much less productive than they could be. By not letting them change jobs we make the economy less flexible and adaptable than it should be and, in the process, effectively lock small companies out of the market for international students' skills.

Even more perversely, our current high-skill immigration system prevents these graduates from striking out on their own by founding new businesses. Most graduates cannot even begin organizing a new business by lining up financing or

attracting business partners until after they have their green cards. Who would invest in a person who has no legal right to stay in the country?

The most damaging consequence of current policy is that, faced with these restrictions, an increasing number of graduates from American's best universities are deciding not to navigate the labyrinth that is the American immigration system. Instead they move to other countries, taking their specialized knowledge, skills and talents with them to one of our rivals. Students are actively encouraged to do so by representatives from many of our overseas competitors, including China and India, who openly recruit international students on our college campuses. Their sales pitch: "America doesn't really want you. We do." It is a regrettably persuasive argument.

The solution to this problem does not require a sweeping transformation of the American immigration system. All that is needed are targeted measures to allow international students who earn Masters or PhD degrees in a STEM field from an American university and a valid job to get a green card within a year of graduating. These students would be awarded a green card eventually, if they are patient enough. Accelerating the process will remove the market distortions created by our current system and allow the American economy to fully utilize their talents.

It will also allow our top international graduates to start their own businesses at the point in their lives when they will be most likely to do so – before they have houses, children and other commitments that discourage taking risks.

High-tech companies and high-tech engineers agree on the basic approach Congress should take: enacting a STEM exemption from the EB visa cap for international graduate students. IEEE-USA and the Semiconductor Industry Association, in particular, have been working closely on this issue for several years now.

Concerns have been raised by some that a STEM exemption could lead to the creation of diploma mills. Clearly, an American green card has considerable value, creating the potential for abuse. IEEE-USA believes that a few simple safeguards will greatly mitigate this concern.

First, in order to qualify for an EB visa, graduates would have to have an offer for a job in a field related to their degree. American businesses are capable of determining if a recent college graduate has the skills and education needed to contribute to their workforce. Diploma mills do not provide the skills necessary to land a high-tech job, and therefore their graduates would not qualify for the exemption.

We do hope that this job requirement will be defined broadly. Engineers, scientists and mathematicians are in high demand all across our economy. Congress should not prevent, for example, a mathematician from accepting a job with a railroad or shipping company, so long as the particular job requires the mathematician's skills. Common-sense regulations built around pay-levels should allow the government to

quickly determine which jobs are appropriate, and which are not, for someone with an advanced degree in a STEM field.

Second, there are a number of criteria that could be easily adopted to differentiate between legitimate and illegitimate schools. For example, schools that receive NSF funding can safely be assumed to be legitimate schools. THE NSF is, we believe, well suited for establishing criteria used to determine which schools excel at instruction in the STEM fields, and which don't.

Adding the STEM exemption with qualification criteria to the EB program will actually make it easier to identify abusive schools, since right now there is little oversight of the schools whose students use the H-1B program. Such criteria will serve as an important check to ensure that the best students are allowed to become citizens quickly, while excluding those seeking a short-cut.

Rep. Griffin and Rep. Labrador will soon be introducing STEM graduate exemption legislation that include these safeguards. IEEE-USA appreciates the leadership the Congressmen have shown on this issue and strongly endorse their bills.

As a representative of the men and women who will be competing against the STEM graduates using the new EB exemption, IEEE-USA supports the STEM exemption because of our members' unique understanding of America's high-tech workforce. Almost all of our American members have a colleague, employee, coworker or friend who was born outside of the United States. Our members have seen first-hand the role skilled immigrants play in our economy, in our members' businesses and in America's engineering community.

Our members have also seen the economic waste inherent in our current H-1B based system. They have seen colleagues with brilliant ideas for new products sit on their innovations for years, waiting for a green card. They have seen classmates with stellar academic records forced out of the workforce because their spouse got an H-1B job first. And they have seen talented coworkers forced to turn down promotions because they didn't want to lose their place in the green card line.

The technology business is an extraordinary meritocracy. Good ideas are always in short supply, as are good people. For America's high-tech engineers and entrepreneurs, it is a tragedy that America has burdened itself with an immigration system that seems at times to be designed to squander our economic competitiveness.

The most important raw material in most modern technology is ideas, which must come from well-trained and talented people. American universities already attract a huge percentage of the world's most talented people and do an astounding job preparing them to develop the ideas that will drive, and revive, our economy. All Congress needs to do is allow these talented people to become Americans in a reasonable amount of time by passing a STEM exemption to the EB visa program to unlock their full potential.

NAFSA

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Marlene M. Johnson

October 18, 2011

The Honorable Elton Gallegly
Chairman
Committee on the Judiciary
Subcommittee on Immigration Policy and Enforcement
B353 Rayburn House Office Building
Washington, DC 20515

The Honorable Zoe Lofgren
Ranking Member
Committee on the Judiciary
Subcommittee on Immigration Policy and Enforcement
B353 Rayburn House Office Building
Washington, DC 20515

Dear Chairman Gallegly and Ranking Member Lofgren:

On behalf of NAFSA: Association of International Educators and its nearly 10,000 members, I am writing in response to the October 5, 2011 hearing, "STEM the Tide: Should America Try to Prevent an Exodus of Foreign Graduates of U.S. Universities with Advanced Science Degrees?". NAFSA strongly supports a more direct path to green card status for foreign students who graduate from U.S. higher education institutions with advanced degrees in science, technology, engineering, and mathematics, otherwise referred to as the "STEM" disciplines.

The United States is in a competition with other countries to attract and retain highly skilled foreign talent. Increasingly, other countries have recognized that in the current world economy, success comes to those who welcome people from around the world who have the skills and knowledge to contribute new innovations, discoveries, and job-creating businesses. At a time when there are not enough American students to meet hiring demands in our knowledge- and innovation-based industries, we are fortunate that the U.S. higher education system provides a ready pool of foreign graduates with those in-demand skills. We strongly believe that establishing a direct path to green card status for foreign graduates in the STEM disciplines will help the United States to more effectively compete and collaborate in a knowledge-based economy. For a fuller explanation of our analysis of the need for this update to immigration policy, we respectfully submit for the hearing record our report, "A Visa and Immigration Policy for the Brain-Circulation Era: Adjusting to What Happened in the World While We Were Making Other Plans."

Overall, the committee's October 5 hearing helped to further articulate the importance of foreign talent to the United States, but I was troubled by some testimony that suggested that providing a more direct path to green card status for foreign graduates with advanced STEM degrees would pose a threat to the quality and integrity of

educational credentials. It is our view that insofar as such a concern exists, it can be managed and addressed without negating the central concept of this hearing: that we must seek to update our immigration policy if we are to attract and retain these talented graduates. For example, one testimony during the hearing asserted that it would be so challenging to reach agreement regarding a definition of STEM degrees that the final result would be an overly broad definition, leaving the system more "susceptible to gaming." This is not a valid concern. There is already a working definition of STEM degrees in place that is used in the granting of extensions to optional practical training to foreign students. This STEM Designated Degree Program List sets forth eligible courses of study according to Classification of Instructional Programs (CIP) codes developed by the U.S. Department of Education's National Center for Education Statistics (NCES). This list could easily be used in other contexts without creating concerns related to fraud or security.

NAFSA is unique in that this association has expertise in both international education and in immigration policy. My staff will follow up with the committee to offer further recommendations and support for creating an immigration system that works to attract and retain the foreign talent this country needs.

Thank you for holding the hearing to discuss this important topic.

Sincerely,

Marlene M. Johnson
Executive Director & CEO

Enclosure

ATTACHMENT

A Visa and Immigration Policy *for the* Brain-Circulation Era

Adjusting To What Happened in the World While We Were Making Other Plans

By Victor C. Johnson, Senior Advisor for Public Policy

NAFSA
Association of International Educators

About the Author

Victor C. Johnson is senior advisor for public policy at NAFSA. The author wishes to acknowledge the contributions of Rachel H. Banks, Heather M. Stewart, and Ursula Oaks.

About NAFSA

With nearly 10,000 members, NAFSA: Association of International Educators is the world's largest nonprofit professional association dedicated to international education. Visit us online at www.nafsa.org and join the conversation at http://blog.nafsa.org or on Twitter @NAFSA.

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A Visa and Immigration Policy *for the* Brain-Circulation Era

Adjusting To What Happened in the World While We Were Making Other Plans

By Victor C. Johnson, Senior Advisor for Public Policy

President Obama has committed his administration to constructive American engagement in the global community, to an economic recovery that enhances long-term economic competitiveness, and to robust student, scholarly, and citizen exchanges. NAFSA shares these objectives, and our mission—international education—is critical to all of them. In particular, these objectives require that the United States be open, accessible, and attractive to the world's best talent to staff its universities, research institutes, and cutting-edge industries, and to the world's future leaders who seek to further their education here. This will necessitate both a broader concept of national security and a better understanding of today's patterns of global mobility.

A Broader Concept *of* National Security

Since 9/11, the following assumption has tended to guide U.S. policy: If a policy that would make the United States a more open and welcoming country *could* be exploited by a hypothetical terrorist—which of course any such policy could—then we shouldn't do it. Understandable though that approach may be, it does not serve the nation adequately. It has also spawned layer upon layer of security controls and restrictions, all taken in the name of making us safer – but without careful consideration of the effectiveness or consequences of those measures.

All prudent steps must be taken to prevent another act of mass terrorism on American soil. But a policy based in fear, that causes us to turn away from the world, is profoundly inimical to American security—because openness is *part of* security. The United States needs international students, professors, researchers, scientists, and future leaders coming to this country to further our universities' educational mission, teach our students, increase mutual understanding between the United States and the rest of the world, enhance our economic and scientific competitiveness, and support U.S. international leadership. There is no escape from the responsibility of achieving the necessary balance.

The Paradigm Shift in Global Mobility

To prosper, America must acknowledge the paradigm shift that is occurring in the world's understanding of the myriad benefits that accrue to a country when it is able to attract talented and gifted individuals. Increasingly, other countries have recognized that in the current world economy, success comes to those who create and innovate. They welcome people from around the world who can contribute to the creation and development of new blockbuster or revolutionary ideas that have the potential to grow a company as successful as Microsoft or to produce the next generation of safer and cleaner energy production alternatives.

The United States has been successful at attracting and integrating immigrants who have added tremendous value to our country and economy. But over the past couple of decades, the United States has argued myopically over outmoded caps on the number of talented people who will be permitted to work and live in this country. Other countries have seized this weakness to lure people to their knowledge-based economies. While the United States provides a patchwork of limited, short-term work options with long and uncertain paths to permanent residency, other countries promise quick membership in their societies for talented people and their families. Canada has run advertisements in major U.S. newspapers seeking to attract knowledge workers and their families who are stuck in U.S. green card backlogs. Sending countries like China and India are luring their nationals back with state-of-the-art facilities, and promises of good jobs with quick advancement. This is producing a phenomenon that is virtually unrecognized in the United States: the *outflow* of talent from this country back to its countries of origin or to other, more welcoming, countries.

Today's patterns of international mobility bear little resemblance to those in effect generations ago when the basic structure of U.S. immigration law was created.

Today's patterns of international mobility bear little resemblance to those in effect generations ago when the basic structure of U.S. immigration law was created. Immigration law recognizes people as either "immigrants," those who apply for entry with the intent of remaining, or "nonimmigrants," those who apply for entry for a specific purpose and period of time, after which it is assumed that they will "go back home." But today's reality is that talent circulates: Skilled people leave their home country for different reasons and seek to remain in the receiving country for varying periods of time based on complex factors. They may stay, return to their prior country of residence, move to a third country, establish homes in both the sending and receiving countries and divide their time between the two, travel back and forth constantly to engage in multinational research projects, or follow a variety of other patterns. Americans are part of this pattern—seeking opportunity, at different stages of their lives, in dynamic economies or knowledge centers abroad. For the United States to attract and retain the best talent to our college and university student bodies, faculties, and research centers, immigration law and visa policy must accommodate these realities. Today's complex patterns of global mobility do not recognize anachronistic immigrant-nonimmigrant distinctions.

A Visa and Immigration Policy *for* our Time

America can no longer assume that it is the preferred destination for people who seek to improve their lives outside their home country. Talented students and skilled workers have multiple options around the world for study and creative work, and they are attracted to the places that offer them the best opportunities. Our challenge is to participate in the global community in a way that lifts up Americans to compete in a global workforce while also being open, accessible, and attractive to the world's best talent and future leaders.

Visa and immigration policy together determine who can knock on America's front door for admission and whether that door provides access to a country that welcomes those who step across its threshold. The Department of State issues visas under policy

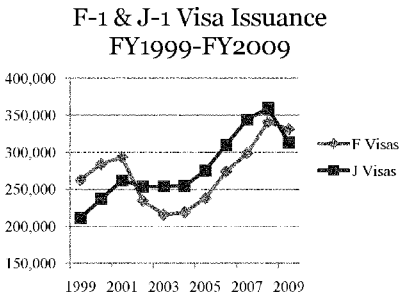
guidance which, since 2003, has been the province of the Department of Homeland Security (DHS). A visa is only a document that permits an individual to apply at a port of entry for admission to the United States. DHS determines who may enter and how long they may legally remain. The determination of admissibility, the provision of immigration services to those legally admitted, and the enforcement of immigration law are respectively the responsibility of three different DHS agencies, none of which existed in their current form before DHS was created. To put this institutional puzzle together in the service of coherent policy is an enormous challenge, and it has not yet been met.

In this document, we seek to combine visa and immigration policy recommendations into a comprehensive set of guidelines appropriate for today's world.

The Unfinished Visa-Reform Agenda

Since 9/11, various barriers, some of them unreasonable or unnecessarily cumbersome, have impeded access to timely visas for international students, scholars, and exchange visitors. Now, eight years later, it is possible to declare partial victory in the effort to rectify this situation. Although exchange visitor (J) visas recovered fairly quickly, issuance of student (F) visas crashed after 9/11 and did not recover to the 2001 level until 2007 (see graph at right). As of 2008, student visa issuance appeared to be back on a robust growth curve, but then declined in 2009, probably in part because of the global economic downturn.

It is thus important to acknowledge that visa processing does not now appear to be a serious impediment for U.S.-bound international students and exchange visitors. Credit for this success is owed to many unfairly maligned bureaucrats in the U.S. government, especially the State Department's Bureau of Consular Affairs, and many outside the government who pushed, prodded, consulted, and supported—among whom we count ourselves. However, this does not mean that the problems the United States has



Source: State Department's Bureau of Consular Affairs, Visa Issuance Statistics, http://travel.state.gov/visa/frvi/statistics/statistics_1476.html.
FY=Fiscal Year (October 1–September 30)

experienced attracting international students are over—far from it—because the visa-issuance process is only one among many factors that affect U.S. competitiveness for international students. The reality is that the decline in our competitiveness is a function of the transformation of the international student market over the past decade and the absence of a U.S. policy for addressing this reality.

Since 1999, international student mobility worldwide has increased at more than twice the rate of international student enrollment in U.S. higher education institutions—57 percent versus 27 percent, according to data from the Organization for Economic Cooperation and Development and the Institute of International Education. This gap illustrates that over the past ten years, international students increasingly are choosing to pursue higher

education abroad in places other than the United States. This is not entirely by accident, as numerous competitor countries have emerged during this time to seize a larger slice of the growing global marketplace of students. There are the traditional competitor countries, such as the United Kingdom and Australia, who adopted and implemented aggressive national strategies to attract more international students to their colleges and universities and have seen their enrollments increase since 1999 by 77 percent and 183 percent, respectively. More recently, newer competitors, such as the European Higher Education Area, Canada, Singapore, and New Zealand, have emerged with national campaigns of their own to boost international enrollments. Even traditional "sending" countries are entering the competition by taking significant steps to improve their own higher education systems in order to attract more students from abroad; in the past year, China, South Korea, and Japan have each announced international student recruitment targets – China: 500,000 by 2020; Japan: 300,000 by 2020; South Korea: 100,000 by 2010.

The United States remains on the sidelines of this competition, and as a result, we are not benefiting nearly as much as we should from the growth in international student mobility.

This trend is likely to continue, especially as other countries increasingly offer more courses taught in English. Yet the United States remains on the sidelines of this competition, and as a result, we are not benefiting nearly as much as we should from the growth in international student mobility. Now is not the time for complacency.

It is time to turn our attention to the unfinished visa-processing agenda. In a market grown exponentially more competitive, it would be folly to fail to address the remaining problems that place unnecessary obstacles in the way of those we want to attract, negatively impact their incentives to visit the United States, and inhibit scientific collaboration and innovation—all without any positive impact on U.S. safety or security. The State Department must be given the tools to manage the visa caseload and the risks that are inherent in visa adjudication. The actions recommended below will permit a more focused visa policy, less hassle for low-risk visa applicants, and the more strategic deployment of consular resources, and will enhance security.

Rationalizing the Consular Interview Policy

After 9/11, the secretary of state issued temporary guidance to all consular posts essentially prohibiting waiver of personal appearance (interviews) for most visa applicants in order to give the department time to craft an appropriate policy for the new risk environment. Congress unwisely wrote this temporary guidance into law in 2004, thus compelling many would-be visitors to the United States to travel long distances and incur significant expense for interviews that available technology and risk-assessment techniques really make unnecessary. Requiring overworked consular officers to waste time on brief, pro-forma interviews with low-risk visitors does little to enhance our security. Some foreign governments have retaliated by requiring Americans to travel to their consulates for interviews.

- **The most important action required** is for Congress to restore to the secretary of state the authority to grant U.S. consulates discretion to waive personal appearance as appropriate based on risk analysis, subject to

State-DHS guidance, and according to plans submitted by each consulate for State Department approval.

Expediting Reviews *for* Low-Risk Travelers

With such discretion, the Department of State could ease another key bottleneck in the visa process: Too many resources are expended on the repetitive processing of the same people, which alienates our friends and distracts consular attention from those who might wish us ill. Today, renowned scientists who travel to the United States frequently to engage in scientific activities are treated the same as strangers who are first-time applicants every time they require a new visa. Students and scholars have suffered prolonged separation from their families and have seen their research or their degree programs collapse because they were unable to return to the United States in a timely manner from a routine visit abroad.

Since 9/11, the annual number of visas submitted for Mantis clearances increased an astonishing 2,328 percent, from 24 in 2001 to 55,888 in 2008.

- **The department should expedite visa approval for two categories of visitors:** frequent visitors with a prior history of visa approval who have already cleared a background check; and students and scholars in valid status who are pursuing programs in the United States, leave the country temporarily, and require a new visa to return to the same program.

Reforming the Security Clearance Process *for* Scientists

The security clearance process for scientists must be rationalized. Procedures have long been in place to prevent the proliferation of advanced, sensitive technologies, relevant to the design and production of weapons of mass destruction, by controlling access to such technologies by foreign scientists from countries of concern. These procedures entail the referral of certain visa applications to Washington for inter-agency clearance through a process currently known as "Visas Mantis."

Since 9/11, the annual number of visas submitted for Mantis clearances has increased an astonishing 2,328 percent, from 24 in 2001 to 55,888 in 2008. Even allowing for the likelihood that Mantis procedures were too lax prior to 9/11, it is impossible to imagine that proliferation-sensitive cases have grown by that order of magnitude. Virtually all Mantis cases that proceed to completion are approved—a sure sign that many of the reviews are unnecessary. But the process periodically breaks down under the weight of the caseload, leaving applicants stranded for months awaiting clearance.

To solve this problem, all of the following needs to be done:

- **The Department of State should provide better guidance** for consular officers on which cases need to be submitted for Mantis reviews.

- **For those on J (scholar) and H (employment) visas**, State should extend the duration of security clearances to conform to the duration of the program for which the clearance is sought, thus avoiding repetitive processing of the same case.

- **State should conduct biennial reviews of the list of controlled technologies (the Technology Alert List, or TAL)**, with the participation of experts in the scientific community and the private sector, to ensure that technologies are removed from the list as they obsolesce or become widely available.

- **Congress should appropriate necessary funds** for the staffing of interagency reviews, and State should establish effective time guidelines to expedite the reviews.

Effective time guidelines for Mantis clearances do now appear to be in place as a result of new procedures announced on June 1, 2009. This is an important advance, which we support and applaud. However, we remain concerned about the long-term viability of any regime for vetting scientists so long as the caseload keeps outpacing resources, and in the absence of an effective system for TAL reviews.

An Immigration Agenda *for* a Competitive America

Fixing visa processing alone will not create the conditions necessary for the United States to regain and maintain its competitive edge for international students, educators, and researchers. This will require immigration reform. NAFSA supports the administration and those in Congress who seek to enact comprehensive immigration reform as soon as possible that addresses the following needs.

Caps on Employment-Based Immigration

The United States cannot be competitive for the world's most talented students unless those students know that they will have employment opportunities after graduation, should they wish to pursue them, in order to pursue career objectives or earn money to pay off student loans. And we cannot be competitive for skilled teachers and highly trained scholars from abroad, who are needed on U.S. campuses to help create tomorrow's knowledge and educate the next generation of Americans, without functional employment-based visa categories that are appropriate for them. This will require changes in both green-card and temporary-employment provisions of law.

Green Card Relief

Much of the public debate regarding visas for skilled workers has focused on the H-1B visa, which is a nonimmigrant visa. However, the main factor driving the visibility of H-1B visas in the public mind is that these visas are used as a surrogate for immigrant visas due to the unavailability of green cards. Companies seek to string together a series of temporary fixes, including H-1B visas, for workers whom they consider part of their permanent workforce, while the worker waits in line for years for a green card. If there were adequate availability of green cards, much of the pressure would be removed from the temporary employment-based visa system.

Absent such a fix, it is difficult to envision a temporary-visa solution that both meets the country's needs and is politically acceptable. Therefore, green card relief is the cornerstone of employment-based immigration reform.

- **Cougress must provide sufficient green card relief** to ensure that America can attract and employ the talent it requires to maintain its cutting-edge universities and to fuel its high-tech economy.

H-1B Cap Exemption for Certain International Students

Even with green card reform, there will remain a need for temporary employment-based visas for skilled individuals for whom they are appropriate. The H-1B visa cap, currently set by law at 65,000 annually, hampers the ability of American businesses to hire and retain such individuals. This cap has been reached every year it has been in effect, except for times of economic downturn. Recognizing this, current law exempts up to 20,000 international students from the cap who graduate from U.S. higher education institutions with graduate degrees.

- **To ensure that U.S. businesses can hire the foreign talent that they need**, rather than sending it off to a competitor country, the arbitrary 20,000 annual limit on H-1B visas for international students should be removed.

Facilitating Access *for* International Students

Today's students demand choice—and that is as true of international students as it is of Americans. Immigration policy needs to be flexible enough to permit international students to avail themselves of the myriad educational opportunities that exist in this country.

Rationalizing the Intending Immigrant Criterion

Under current immigration law, applicants for student (F) visas must demonstrate to the satisfaction of the reviewing consular officer that they intend to return home after their course of study—i.e., that they do not intend to immigrate to the United States. Failure to prove this inherently un-provable negative constitutes by far the most common reason for visa denial for international students. And yet of course, both the applicants and the consular officers know that international students will have the opportunity under other provisions of law to apply for change of status in order to remain in the United States after graduation—and U.S. companies actively recruit them to do so. The reality is that some applicants intend to avail themselves of this opportunity, some don't, and many have no specific intention one way or the other. No public policy purpose is served by basing visa policy on the pretense that this is not so. The decision on whether or not students can become immigrants is best made when they actually apply for that status.

- **The intending immigrant criterion should be eliminated for student (F) visas** for applicants to degree programs who can show that they are *bona fide* students and can meet the other criteria of the law.

Permitting Short-term Visits for Educational or Academic Purposes

In the era of student and scholar mobility, there are myriad reasons for short-term visits to the United States for educational or scholarly purposes. Some common reasons are to attend summer courses, institutes, or seminars at U.S. universities; to study English, often in conjunction with visits for purposes of tourism; to defend Ph.D. dissertations; and to meet university requirements for a brief period in residence as part of an online degree program. Yet, incredible as it may seem, there is often no visa that is strictly legal for this category of visitor—i.e., visitors who intend to be students, but not full-time students in a degree program.

- **Short-term visitors** intending to stay 90 days or less for educational purposes should be able to enter on tourist visas.

DHS Management

With the inauguration of a new administration, it is time to take the management of the Department of Homeland Security to a new level, to fix the early mistakes that are inherent in establishing any such new agency, and to complete the task of integrating the department's disparate agencies and functions into a coherent whole. With respect to DHS's immigration functions, this means the following.

Strengthening the Immigration Policy Function

For better or worse, DHS is now the necessary locus of U.S. immigration policy; if DHS cannot conduct a coherent immigration policy, then we won't have one. Yet the promise of creating three specialized immigration agencies —U.S. Citizenship and Immigration Services (USCIS), U.S. Customs and Border Protection (CBP), and U.S. Immigration and Customs Enforcement (ICE)—and integrating them into a single new department has not been realized.

- **Each of the three immigration agencies must focus on its core mission** so that DHS can benefit from the specialized distribution of immigration functions.
- **At the same time, mechanisms must be created** to coordinate and integrate the work of these three agencies.
- **For the secretary of homeland security to have any possibility of imposing coherent policy** on the immigration agencies, her policy office needs to be dramatically upgraded.

Strengthening the policy function will facilitate the achievement of three other necessary reforms, all of which can be accomplished at no cost to security and indeed would enhance it.

CBP: Creating Welcoming Ports of Entry

First, it is simply not the case that treating people with civility and respect when they transit through our ports of entry is incompatible with security. No security gain is achieved when people who want to have a relationship with America go through the experience of entry into the United States and vow never to return.

- **If the United States is to be an attractive destination** for the world's best talent and future leaders, its ports of entry must look like gateways to a free country.

USCIS: Reforming the Immigration Process

Second, the immigration process needs to be reformed to reduce unnecessary processes and paperwork that waste the time and resources of both the applicant and the adjudicator, with no benefit for either.

- **USCIS should eliminate procedures that duplicate those of other agencies** (such as duplicate background checks or fraud-detection procedures) and focus on its core mission of adjudicating eligibility for immigration benefits.
- **USCIS should create a precertification or "trusted employer" program** that would

eliminate duplicative filing of the same information and redundant reviews by immigration adjudicators for employers that file frequently with the agency.

- **Any new USCIS databases or systems must be developed in coordination with other DHS agencies** and with any other federal department that must either rely on or share information with the new database or system.

ICE: Finding an Appropriate Home for the Student and Exchange Visitor Program

Third, for inexplicable reasons, when the Student and Exchange Visitor Program (SEVP) was created, it was housed in ICE, an enforcement agency whose responsibility is to track down and protect us from terrorists, criminal gangs, human smugglers and traffickers, and the like. This arrangement has served neither ICE nor students and schools well. For ICE, it means that resources that could be focused on the apprehension of people who are dangerous to the security of the homeland are instead diverted to the management of an extensive database of non-threatening people (SEVIS) and to the pursuit of "leads" generated primarily by minor, technical immigration-paperwork violations. For students and schools, it means that complex determinations of immigration status and the adjudication of immigration benefits for students and exchange visitors are made by a police agency that lacks both the mission and the requisite expertise for carrying out these responsibilities. This constitutes a misuse of a specialized agency set up under the law for another purpose, and it negatively impacts international students and U.S. schools for no security benefit.

SEVP's primary role is to make determinations about immigration status. This role falls under the purview of USCIS, which has the expertise to understand the intricacies of immigration status and the U.S. higher education system.

- **SEVIS should be housed in USCIS.** ICE should be notified of violations of immigration status by students or exchange visitors requiring its action.

- **DHS should review the goals of SEVP** and rebuild it to fit DHS and stakeholder needs.

Identity Documents and Document Security

Since 9/11, the United States has appropriately become much more deliberate about requiring determination of proper immigration status before issuing identity documents or providing employment opportunities. This process is plagued by the same problem that bedevils many other post-9/11 measures: In the rush to accomplish a laudable goal, functionality and workability go out the window. Often there has not been a proper recognition of the diversity of immigration statuses, or the training required to understand the complexity of the law.

The REAL ID Act, passed without any real debate, includes provisions that effectively bar some international students and scholars legally in the United States from obtaining driver's licenses, and that require others to renew licenses annually—an imposition that serves no legitimate purpose but does overburden already-swamped Departments of Motor Vehicles across the nation. If this act goes into full effect, it will constitute yet another disincentive for students and scholars to choose the United States, without providing any additional security. Congress is currently considering the PASS ID Act, which would ease the situation somewhat but still retains

many of the same damaging provisions.

- **Congress should repeal the REAL ID Act** and revert to the negotiated rulemaking process for achieving the same objectives that was in process when REAL ID was passed.

- **Failing that, whichever legislation proceeds to full implementation should be amended** to provide that (1) the duration of driver's licenses for F, J, and M visa holders is equivalent to the duration of their program or to the normal duration of the state's driver's license, whichever is shorter, and (2) maintenance of valid SEVIS status is deemed to be sufficient documentation of immigration status for purposes of driver's license renewal.