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EXAMINING THE IMPORTANCE OF THE H–1B VISA TO THE AMERICAN ECONOMY

HEARING

BEFORE THE

COMMITTEE ON THE JUDICIARY
UNITED STATES SENATE

ONE HUNDRED EIGHTH CONGRESS

FIRST SESSION

SEPTEMBER 16, 2003

Serial No. J–108–41

Printed for the use of the Committee on the Judiciary

U.S. GOVERNMENT PRINTING OFFICE

93–082 PDF WASHINGTON : 2004

For sale by the Superintendent of Documents, U.S. Government Printing Office
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EXAMINING THE IMPORTANCE OF THE H–1B VISA TO THE AMERICAN ECONOMY

TUESDAY, SEPTEMBER 16, 2003

UNITED STATES SENATE,
COMMITTEE ON THE JUDICIARY,
Washington, DC.

The Committee met, pursuant to notice, at 2:37 p.m., in room SD–226, Dirksen Senate Office Building, Hon. Orrin G. Hatch, Chairman of the Committee, presiding.

Present: Senators Hatch, Sessions, Craig, Chambliss, Kennedy, and Feinstein.

OPENING STATEMENT OF HON. ORRIN G. HATCH, A U.S. SENATOR FROM THE STATE OF UTAH

Chairman HATCH. Well, thank you for being here today.

The Committee is holding this hearing because we need to take a careful look at the role of the H–1B visa category in today's economy. Since 1952, this visa category or its predecessor has allowed some of the most talented persons in the world to come to the United States. During this time, our Nation became the global leader in technology and innovation.

From 1980 to 2000, there was a 623-percent growth in high-technology jobs in our country. By the late 1990's, there was a shortage of American workers in that field. In response to the need for a larger high-technology labor force, Congress twice increased the numerical limits. In 1998, through the American Competitiveness and Workforce Improvement Act, we increased the annual cap from 65,000 to 115,000 visas.

By the year 2000, even the newly raised cap was not sufficient to meet the needs of the industry. For that reason, I sponsored the American Competitiveness in the 21st Century Act, or AC–21. AC–21 increased the level of annual numerical limits to 195,000 visas.

We realized that increasing the cap was only a temporary solution to a long-term problem, which is the lack of American students enrolling in the fields of math, science, and technology. Therefore, as part of the 1998 Act, and again in AC–21, we implemented training and scholarship programs, funded by a $1,000 fee to be paid by H–1B employers so that our Nation would not have to perpetually look for highly specialized workers abroad.

The latest figures I have seen indicate that more than $692 million was raised for the education, training, and retraining of American students and workers. According to the GAO, these programs are attracting a high proportion of minorities and women into the field of science and technology, providing valuable diversity to the

high-tech workforce of the future. Altogether, funds raised through H–1B applications have helped provide training to more than 55,000 American workers and have funded scholarships for more than 12,500 students in science and engineering.

At the end of this fiscal year, some of the provisions of AC–21 will sunset. If nothing is done between now and the end of this month, the numerical limitation will revert to 65,000 and there will no longer be statutory authority to collect the $1,000 fee to fund the scholarship and job training programs.

The job market today is much different than it was back in 1998 and the year 2000. There are many who are out of work, including American professionals in the high-technology sector. We in Congress have the responsibility to get as much information as we can in order to make the best, most informed decision as to what action should be taken in light of the impending sunset and what should be done as a long-term solution to protect the interests of American workers without impeding our Nation's ability to compete in a global market.

I hope that throughout the course of this hearing, we can find answers to some important questions. Two questions we must answer are whether the presence of highly specialized professionals from other countries actually and significantly impacts the unemployment rate and whether it is fair to point our fingers to immigrants for all of our economic problems without checking whether facts or figures support such accusations.

For example, we often hear the accusation that U.S. companies are using the H–1B visa to hire cheaper foreign workers. However, recently released figures from the Federal Reserve Bank of Atlanta indicate that the median annual salary of H–1B visa workers, 98 percent of whom hold at least a bachelor's degree, is $55,000, whereas the median income for U.S. workers who hold bachelor's degrees, consisting of 26 percent of U.S. residents over the age of 25, is $46,000 per year.

We need to ask whether the current anti-immigration sentiment is in the long-term interest of the American economy and American workers. If our Nation is to stay competitive, can we do without having access to the most talented individuals from abroad? If we fall behind other industrialized nations, what would that do to our own economic development, and what are the consequences to American workers and their families if we do, in fact, fall behind?

By the end of this hearing, I hope that the Judiciary Committee, the Senate, the administration, and other policymakers will be in a better position to consider the appropriate next step with regard to H–1B visas, both in deciding what to do in light of the impending sunset of the key provisions and in terms of reaching a long-term solution that would both protect the interests of American workers and secure America's position as a leader in technology and innovation.

Once again, I want to thank you for being here at this hearing as we discuss this important issue affecting the well-being of American workers and of the American economy.

[The prepared statement of Senator Hatch appears as a submission for the record.]

Now we have a vote that comes in about four minutes and the distinguished Chairman of the Immigration Subcommittee of the Judiciary Committee will now speak to us and then I am going to turn the hearing over to him. He is doing an excellent job in this area and I am very grateful to have Senator Chambliss working with us on these very, very crucial and important issues.

Senator Chambliss, we will turn to you.

STATEMENT OF HON. SAXBY CHAMBLISS, A U.S. SENATOR FROM THE STATE OF GEORGIA

Senator CHAMBLISS. Thank you very much, Mr. Chairman, and I appreciate your holding this hearing today. Professional worker visas have been in the spotlight for the last few months and I am glad we will have a chance to focus on the H–1B visa today.

We are in very difficult economic times in this country and, as a result, we need to reflect on the right approach for both American businesses as well as American workers. Having the critical skills and top talent from around the world is essential for our economic progress, but at the same time we must make sure that our immigration policies don't have a backlash effect on displacing American workers.

The H–1B program has been valuable to our country, and particularly to the high-tech industry that needs programmers and technicians to operate their business successfully. With the lapsing of H–1B authorization this year, including the cap reverting from 195,000 to 65,000, we will have an opportunity to reevaluate our priorities and our policies for professional worker visas.

A related issue on professional worker visas is the so-called L–1 visa loophole. The L–1 visa allows for intra-company transfers so that our multinational companies can bring executives, managers, and employees with specialized knowledge into the United States.

However, some companies have abused this visa by bringing workers with only generic knowledge and then outsourcing those workers to other companies. This kind of off-site placement can in some cases circumvent the protections of the H–1B visa when the worker is essentially performing that function of that visa. As a result, American workers have been displaced and this must stop.

We held a hearing in our Subcommittee, and many of the folks in the audience and one witness, in particular, was present that day, in which these deficiencies and these loopholes in the L–1 visa program were really highlighted. I will introduce legislation tomorrow that closes the L–1 loophole without inadvertent and unnecessary negative effects on business. My legislation is targeted to this specific problem and it will end the practice of companies who are displacing American workers.

In these economic times, we must ensure that United States workers are given every opportunity and protection that is in the law, as well as ensure that our businesses remain competitive worldwide. My legislation will do both.

Mr. Chairman, I look forward to this hearing, and thank you again for bringing us together today.

[The prepared statement of Senator Chambliss appears as a submission for the record.]

Chairman HATCH. Thank you so much, Senator.

Senator Craig, did you have anything you would care to say?

STATEMENT OF HON. LARRY CRAIG, A U.S. SENATOR FROM THE STATE OF IDAHO

Senator CRAIG. Mr. Chairman, thank you very much for this hearing. This whole issue of immigration—I am working on the H–2A issue, but let's move forward. I thank you for this hearing. This is a critical area in dealing with these particular problems.

Chairman HATCH. Well, thank you, Senator Craig.

I look forward to hearing from our distinguished panel of witnesses, who can provide us with a balanced view of the situation. We will first hear from Stephen Yale-Loehr, Chair of the American Immigration Lawyers Association's Business Committee, and Adjunct Professor at Cornell University Law School. Professor Yale-Loehr is a co-author of Immigration Law and Procedure, widely considered the premier immigration law treatise.

Next is Ms. Elizabeth Dickson—we are happy to welcome you all here—Director of Global Services for Ingersoll-Rand, a diversified manufacturer with 55,000 employees in over 100 locations worldwide.

We are also pleased to have Mr. John Steadman, President-Elect of the Institute of Electrical and Electronics Engineers, or IEEE. Mr. Steadman is the Dean of Engineering at the University of South Alabama in Mobile.

Last, but certainly not least, Mr. Patrick Duffy, of Intel Corporation, is also on this distinguished panel. Mr. Duffy has been Intel's human resources attorney since 1996. He advises Intel on labor, employment, and immigration matters.

So we are delighted to have all four of you here. Now, having introduced you, I think we are going to recess so we can go vote, and then Senator Chambliss and others will be back as soon as that vote is over and we will continue this hearing. It is an important hearing and we are grateful to have all of you here.

So with that, we will recess for about ten minutes or so.

[The Committee stood in recess from 2:47 p.m. to 3:08 p.m.]

Senator CHAMBLISS [presiding]. Thank you all very much for being patient with us. Occasionally, we have to go do what you all pay us to do, and that is to vote on the floor. I was told that there is a 50-percent chance we may have another vote before the conclusion of this hearing. In south Georgia, we used to have a weather man who, when asked 1 day what a 50-percent chance of rain meant, said it might rain and it might not. So we may have another vote and we may not, but hopefully not.

Again, we welcome our distinguished panel.

Mr. Yale-Loehr, we appreciate very much you coming back. You did such a good job at our L–1 hearing, we wanted you back again to hear from you again. So we will hear from each of you at this point and, Mr. Yale-Loehr, we will start with you.

STATEMENT OF STEPHEN YALE-LOEHR, CHAIR, BUSINESS IMMIGRATION COMMITTEE, AMERICAN IMMIGRATION LAWYERS ASSOCIATION, AND ADJUNCT PROFESSOR, CORNELL UNIVERSITY LAW SCHOOL, ITHACA, NEW YORK

Mr. YALE-LOEHR. Thank you. First, I want to give you a background about the H–1B non-immigrant visa category. Then I want to talk about H–1Bs, the global economy, and free trade agreements, and then finally end with proposals to improve the H–1B category.

As background, the H–1B category allows U.S. companies to temporarily hire foreign nationals who have at least a bachelor's degree or equivalent. Congress carefully built protections for the U.S. labor market into the program. Employers have to pay the higher of the prevailing wage or the actual wage. In addition, H–1B employers have to sign four attestations as part of the process.

They have to attest that, number one, they will pay the prevailing or actual wage. Number two, they have to attest that they will give the H–1B worker the same benefits as other comparable U.S. workers. Number three, they have to attest that there is no strike or lock-out at the facility. And, number four, they have to attest that they will pay the return transportation of the H–1B worker back to their home country if they are let go.

Enough about the overview. Let me focus on a few key issues. As Senator Hatch pointed out in his opening remarks, the H–1B cap is scheduled to drop down to 65,000 beginning in a few weeks, October 1. Moreover, it appears that fewer than 65,000 numbers are really available the next fiscal year. I have heard estimates from the Immigration Service that about 22,000 cases that are subject to the annual cap have been filed in this fiscal year, but will be decided in the next fiscal year.

Moreover, the free trade agreements that were recently concluded with Chile and Singapore set aside another 6,800 H–1B numbers per year for use by professionals from those countries. Adding those two figures together, that leaves only about 36,200 numbers really available for H–1B usage in fiscal year 2004.

A chart attached as Appendix A to my testimony sets out the statistics on H–1B usage over the last several years. Those figures show that H–1B usage is market-driven. The number of petitions increases when the economy is good and declines in a recession.

The chart shows that in the peak economic year of fiscal year 2001, the former Immigration and Naturalization Service approved 164,000 H–1B petitions that were subject to the cap. However, the next fiscal year the number dropped by half to 79,000, equaling a mere six-tenths of 1 percent of the total U.S. labor force.

According to government statistics, about 57,000 H–1B petitions subject to the cap were approved through June 30 of this year. At that rate, approximately 76,000 H–1B petitions subject to the cap will be approved by the end of the fiscal year.

Turning to the types of people who use H–1B petitions, over 60 percent of H–1B workers in fiscal year 2002 were not in computer-related occupations. This shows the importance of H–1B workers to all parts of the economy, not just IT workers. Examples include H–1B doctors who provide care in medically underserved areas and researchers at universities.

Moreover, in fiscal year 2002 approximately 65 percent of the beneficiaries of initial employment were in the United States in another non-immigrant status already. This shows that two-thirds of all H–1Bs are already in the United States, most of them graduates of U.S. universities. It does no good to train them and then tell them that they cannot get a job here because the H–1B cap is too low. Otherwise, we are just training our foreign competition.

In terms of how the H–1B category protects U.S. workers, Department of Labor enforcement statistics show that they are enforcing the law. Over the last decade, the Department of Labor started 886 H–1B investigations and concluded 482 of them. During that time, the Labor Department found almost $12 million in back wages was due to over 2,300 H–1B non-immigrants who had not been paid the correct amount.

Those numbers should be measured against the size of the overall H–1B program—2,300 H–1B non-immigrants not paid the correct wage, versus over 1 million H–1B petitions for new employment approved during that same decade. Thus, the number of H–1B non-immigrants found to have been underpaid is only about two-tenths of 1 percent.

My own view is that the Department of Labor is enforcing the H–1B program adequately, and that most employers are complying with the attestation regime set up by the H–1B program. Supporting this view is the fact that the Department of Labor has found willful H–1B violations requiring debarment from the program in less than 5 percent of its investigations. It would seem that many employers simply are experiencing difficulty in complying with the complex H–1B-related regulations.

I know that you want to consider the impact of H–1B workers on comparable U.S. workers. It is hard to do that and I am not an economist. The only comprehensive effort to date was done in 2000 by the National Research Council of the National Academy of Sciences. They concluded that the magnitude of any effect the H–1B program has on wages is difficult to estimate with confidence. The report noted that the effect, if any, may be not to depress wages, not to hurt employment opportunities for U.S. workers, but rather to keep wages from rising as rapidly as they would if the program did not exist. Another study in 2001 similarly concluded that if the H–1B program does have any effect on comparable U.S. workers, the effect must be very subtle because they couldn't find the data in its report.

H–1Bs and globalization: Globalization, or the cross-border movement of goods, services and people, is one of the most important characteristics of this 21st century. Some have raised concerns that globalization and the related activity of overseas outsourcing or offshoring, as it is sometimes called, can hurt the U.S. economy.

In my view, the H–1B category, if properly administered, monitored and enforced, can be an antidote to concerns about overseas outsourcing. Use of H–1B visas encourages work in the United States, and thus can help keep and grow jobs in the United States.

Ask yourselves this question: Isn't it better for an H–1B foreign national to be working in your State, buying goods from your constituents, paying taxes on the $60,000 salary or whatever they are

getting, instead of working in India or China for a $7,000 salary, none of which gets spent in the United States?

Finally, turning to proposals on how to improve the H–1B category, I have two types of proposals. One is exemptions from the cap. Exemptions are already in the program, but they can be strengthened and improved. Potential new areas for exemptions include jobs deemed to be in the public interest if the Federal Government, a State government or a non-profit requires an H–1B professional; second, jobs requiring an H–1B professional that a State economic development agency deems important due to a positive economic impact in that State; and, third, jobs that facilitate the retention of foreign students educated in the United States. All these three areas are detailed in more detail in my testimony.

Finally, talking about the H–1B cap, an annual cap of 65,000 is simply too small. Even in the recent recession, actual H–1B usage subject to the cap has averaged about 75,000 to 80,000 a year. Moreover, as I mentioned, it appears that really only 36,200 numbers are available for new H–1B petitions this coming fiscal year.

Even if there were 65,000 fresh H–1B numbers a fiscal year, which there aren't, that is not enough. I believe that a modest H–1B increase of 115,000 for fiscal year 2004 would alleviate our immediate labor pressures, while permitting employers to hire H–1B workers to fill various positions that require specific sets of skills.

If Congress does not do anything, companies, hospitals in medically underserved areas, and universities will not have access to needed workers. In the longer term, Congress needs to look more comprehensively at how to better prepare U.S. students and workers for the jobs of the 21st century and how immigration, both temporary and permanent, fits into that strategy.

The government, industry, and educational institutions need to work together on this important challenge. That, however, cannot be done by September 30 of this year. Therefore, I think we need to do something in the short term, whether it is to keep the status quo or to perhaps increase the cap a little bit for now and then have a longer-range solution.

In sum, Congress needs to support an H–1B program that reflects our Nation's needs for highly educated foreign professionals and allows U.S. employers access to their talent now and in the future, while at the same time protecting U.S. workers. The existing H–1B program accommodates both sets of interests. Changes set to take place October 1, however, will upset that delicate balance and I urge Congress to do something to try to restore that balance quickly.

Thank you.

[The prepared statement of Mr. Yale-Loehr appears as a submission for the record.]

Senator CHAMBLISS. Thank you very much.

Ms. Dickson, we are sure pleased to have you here and we look forward to hearing from you.

STATEMENT OF ELIZABETH C. DICKSON, DIRECTOR OF IMMIGRATION SERVICES, INGERSOLL-RAND COMPANY, WOODCLIFF LAKE, NEW JERSEY, ON BEHALF OF THE U.S. CHAMBER OF COMMERCE

Ms. DICKSON. Thank you very much for inviting me today. My name is Elizabeth Dickson and I am responsible for global immigration at Ingersoll-Rand Company. In addition, I do Chair the U.S. Chamber Subcommittee on Immigration and I am actually testifying today on the Chamber's behalf.

The U.S. Chamber of Commerce is the world's largest business federation, representing more than 3 million businesses and organizations of every size, sector, and region. The Chamber has had a long history of involvement in immigration issues, including the H–1B visa. Chamber staff and Chamber members have testified on immigration issues no less than 8 times in the last 5 years, 4 times specifically on H–1B and highly-skilled workers. I have previously testified on this issue myself.

My testimony today reflects my experience with Ingersoll-Rand's ability to find vitally needed workers. It comes from the perspective of a big multinational company which is trying to comply with more and more complex immigration laws.

Ingersoll-Rand is a Fortune 200 company with 50,000 direct employees worldwide; 30,000 of those employees are here in the United States. The company is a major diversified industrial equipment and components manufacturer.

We do understand that immigration is a complex issue, particularly in the wake of September 11. The Government has focused on a lot of security initiatives and that has been a priority since that time. We do understand that. There is this necessary focus, but we have to bear in mind that we also have an ever-present need to utilize a shrinking H–1B visa program to hire the best engineering and other professional talent that directly impacts on my company's productivity and global competitiveness, and that contributes to the American economy.

Stephen has already taken you through what is an H–1B worker, and we realize that these are very highly qualified and talented people. He also made mention of the fact that it is a pretty difficult visa category to administer, with a lot of attestations, a lot of documentation, and a lot of paperwork to ensure that we are paying the appropriate prevailing wage and providing all the other benefits and other issues that are mandated by the regulations. I do believe most companies are complying with this. I know we work very hard to make sure we comply at Ingersoll-Rand.

When the cap reverts to 65,000, we are going to have a lot of problems that we experienced both in 1997 and 1998. I had the same job in those years and I certainly did experience what happened with my company. We had petitions that were pending that were placed on hold. We had people that had to be taken off payroll. We had new hires that we could not bring into the United States for three or 4 months. Sometimes, that ended up putting very important projects, particularly engineering projects, on hold.

We can't really afford to let arbitrary caps dictate U.S. business immigration policy. As a big, global company, we must be able to tap the top talent we need both domestically and abroad. Ingersoll-

Rand has the majority of its manufacturing operations in the United States; in fact, we have plants in 24 States. It is important to remember that 45 percent of our profits are tied to export sales.

We have experienced in particular fields of engineering a problem identifying and retaining certain workers. Recruiting engineers within the U.S. often results in foreign-born applicants. At a time when Americans continue to earn fewer graduate degrees, particularly in math, science and engineering, our need for such knowledge continues to grow.

My testimony includes a lot of examples of how we use the H–1B category and I would just like for this hearing to concentrate on some of the engineering specialties that drive our need for foreign-born H–1B workers. When I took this job initially, I always thought an engineer was an engineer, and I learned very quickly that that is not true. Engineering is like the medical profession; there are very specific specialty occupations.

Some of the engineers that we have recruited for actively are metrologists. Engineering managers tell me that there are only five or six universities in the United States that have master's programs in metrology and, of them, there are almost no Americans that are completing those programs.

Our Waterject Cutting Systems business spent 20 months searching extensively, using professional recruiters as well as advertisers, to get an engineer that was experienced in industrial robotics and pressurized product development. We finally found one in Canada.

Metallurgical engineers have always been a shortage occupation in the United States and are very key contributors to machinery development projects, particularly for our mining and drilling products. Our Thermo King climate control sector had a 13-month search to find a qualified plastics engineer, and again we hired somebody from Canada.

Currently, we have a number of Ph.D.'s who are working in critical product development for three of our different business units. Dresser-Rand, the oil compressor business; Drilling Solutions, which is mining and that kind of technology; and Thermo King, the climate control and refrigeration systems, all have recruited Ph.D.'s who are performing innovative, very, very important research and development to bring us into the next generation of products that are going to be globally competitive. Again, there are a number of other examples that I have cited in my written testimony.

We constantly hear the request from the Government and other people to train U.S. workers, and I believe most companies do that actively. Training and employee development are part of our culture at Ingersoll-Rand Company. All of our manufacturing plants have training centers at their facilities. Many of them interface with community colleges and vocational-technical schools.

We provide certificate and college degree programs. We sponsor distance learning. We have a full tuition reimbursement program for both bachelor's and advanced degrees. We provide many corporate on-site training programs and we encourage cultural exchange from our facilities abroad in order to enhance diversity and awareness. Ingersoll-Rand University was established in 2001 and

is responsible to train Ingersoll-Rand employees from worldwide locations.

Additionally, Ingersoll-Rand remains a major contributor to U.S. colleges and universities, and we fund a number of scholarship organizations, as well as in some locations we have developed relationships with universities and actually fund some of the research projects at the graduate level.

We continue to conduct extensive recruitment in the U.S. market for our unfilled positions. We have job fairs. We advertise in both newspapers and journals. We advertise electronically. There are a number of job openings at any given time on the IRCO website. We do pay for relocation and we offer highly competitive wage and benefit packages for all employees.

Employers will continue to need H–1B workers, particularly when we are looking for people with highly specialized skills that are going to keep us competitive. We are looking for a reasonable, market-driven H–1B policy. Stephen did allude to how the numbers have fluctuated based on the need, and I think his testimony stands for that. But, basically, based on general economic trends, the numbers do mirror the needs of the market. I think when we are looking to find a solution here, we want to be looking ahead and think, if we have a recovering economy, what are our needs going to be long term.

Some people say H–1B workers displace American workers and lower American workers' wages and working conditions. It is hard to displace a U.S. worker when you are recruiting for a job and you can't find anybody here with the specific skill set that you are looking for.

But, additionally, we feel very comfortable that we are paying the prevailing wage, and also that these people are contributing to our taxes, to our social system, and all the other things that are required as part of the program. Really, it is a lot, lot more expensive to hire a foreign worker.

I am actually in kind of a unique position because I do global immigration work, so I have seen how our immigration laws impact our ability to move people around and hire people. We have one of the more complicated visa processes, and that certainly is the case with the H–1B.

An HR manager can go out and hire almost anybody and I never know about and nobody else in the company knows about it. If it is a U.S. worker, they just go and do it and there is no big deal. But when you are trying to hire a foreign worker, you end up going through corporate headquarters and before a job offer is ever made, we are looking at prevailing wage, we are making sure the business unit understands the requirements of the H–1B. We are making sure the documents are properly posted, that we can properly do the attestations, and that the business unit totally understands what they have to do to comply with every aspect of the program. Additionally, the HR manager has to pull a lot of paperwork together to work on this, and then there are the legal fees, the application fees, and these workers also require ongoing support.

When you actually bring somebody in from a foreign country, it is not unusual for the total cost of that worker to be double or triple their salary in a year, particularly if it is somebody who is com-

ing in for a short period of time and you are planning to send them back to their home country. There are a lot of dual taxation issues, relocation expenses, and other things that I include in my testimony.

I believe that American cannot maintain its global advantage without an adequate supply of top-quality engineers. Immigrants build wealth and create jobs for native-born Americans, and I agree with Stephen that they keep manufacturing in the United States.

In the near term, we simply must have access to foreign nationals. Many of them have been educated in the United States. By sending them home, we are, at best, sending them to our own foreign plants, and at worst we are sending them to our competitors. I have seen other countries relaxing their immigration laws to try to get access to this top talent. It is something that, if we want to maintain a global edge, we want to have the best and the brightest working for us in the United States.

I encourage the Committee to explore the economic issues surrounding the H–1B program and I hope that you can come up with a solution that will work for all of us.

Thank you.

[The prepared statement of Ms. Dickson appears as a submission for the record.]

Senator CHAMBLISS. Thank you very much, Ms. Dickson.

Mr. Steadman, we are also very pleased to have you here and appreciate your testimony at this time.

STATEMENT OF JOHN W. STEADMAN, PRESIDENT-ELECT, INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS-UNITED STATES OF AMERICA, WASHINGTON, D.C.

Mr. STEADMAN. Thank you, Mr. Chambliss, and thank all of you for the opportunity to testify on the subject of H–1B visas. My name is John Steadman and I am here today in my role as the President-Elect of the Institute of Electrical and Electronics Engineers-United States of America.

Senator SESSIONS. Mr. Chairman, I would just like to note that we are delighted to have Dr. Steadman at the University of South Alabama, where he just became Dean of the Engineering School there. We are also proud of his prestigious position as National President of the Institute of Electrical and Electronics Engineers.

Mr. STEADMAN. I appreciate that, Mr. Sessions, and I am pleased with the warm welcome I received at the University of South Alabama, where I, in fact, am currently Dean of Engineering. Previous to that, I was head of electrical and computer engineering at the University of Wyoming.

The IEEE is a trans-national professional society with more than 380,000 electrical, electronics, computer, and software engineering members in 150 countries—the largest single engineering organization in the world. IEEE–USA was established to promote the professional careers and public policy interests of IEEE's 235,000 U.S. members.

My prepared statement goes into greater detail on a number of concerns. I am going to summarize by focusing on just three key issues. First, the H–1B visa is exacerbating the problem of engineering unemployment in the United States. Two, abuses of the L–

1 visa compound this problem. And, three, these guest worker programs accelerate outsourcing to offshore companies and create security concerns. I will conclude in my oral remarks with some specific policy recommendations on behalf of IEEE–USA.

The first point: H–1B visas exacerbate the problem of engineering unemployment. Between fiscal year 2000 and fiscal year 2002, the INS approved almost 800,000 H–1B visa petitions. During the first three quarters of 2003, the new Bureau of Citizenship and Immigration Services approved 140,000 new, renewal and exempt visas. This results in nearly 1 million guest workers just in the last 3 years.

During that same 3-year period, unemployment among electrical and electronics engineers in the United States increased sharply from 1 percent in 2000, more than quadrupling to 4 percent in 2002. Among computer scientists, it jumped from 2 percent in 2002 to 5 percent last year.

Thus, the unemployment rate for electrical and electronics engineers has reached an all-time high of about 7 percent in the first quarter of this year. This translates to hundreds of thousands of unemployed U.S. engineers. Now, I grant you that not all engineers are alike, but we are all degreed and capable. U.S. engineers with good skill sets ought to be finding employment.

Yes, it would be better to have a person hired in a U.S. corporation working in your State than be doing that work in India. But wouldn't it be better yet to have U.S. citizens employed in your State, spending their earnings in your State and contributing to your economy, rather than sending in, many cases, 70 or 80 percent of their wages back home to support a family?

The second point: Abuses of the L–1 visa are compounding this problem. The L–1, or intra-company transfer visa, was established by Congress in the 1950's to enable multinational companies to periodically relocate foreign executives, managers, and workers with specialized knowledge of their employers' products and services to branches and subsidiaries in the United States.

Let me make it clear that IEEE–USA supports the L–1 visa program when used for the purposes Congress intended. It is currently being used by non-U.S. engineering services firms to import significant numbers of technical workers, IT professionals, and engineers through their U.S. subsidiaries, who are then outsourced to U.S. companies and subsidiaries, with those U.S. firms in turn laying off their U.S. workers.

In many instances well documented to this Committee, the displaced workers have to train their non-U.S. replacements in order to obtain a severance package. This is clearly an abuse of the L–1 visa and outside the intent of Congress in establishing this visa category.

The L–1 visa has been exploited due to the absence of even minimal workforce protections and because it allowed some employers to avoid, at least for a short time, the public scrutiny and the negative publicity associated with the H–1B visa program.

The bottom line is that the U.S. is continuing to import significant numbers of skilled workers at a time when the U.S. electrical engineering, computer, and information technology workforce is experiencing sustained and historic highs in unemployment.

My third point: Guest workers and offshoring often go hand-in-hand. Everyone is worried these days about the loss of U.S. jobs offshore, especially in the manufacturing sector. Let me assure you, offshoring is not just an issue for blue-collar workers these days. It is increasingly a major concern of white-collar professionals, including engineering, information technology, and other technical specialties.

The argument is often made that the U.S. has to choose between importing guest workers and offshoring our technology jobs. IEEE–USA believes this argument rings hollow, as it greatly oversimplifies the reality of the economic forces driving globalization.

Even though companies have enjoyed ready access to guest workers through H–1B, L–1, and other related visas, the offshore outsourcing of engineering, design, and R and D work is increasing to such an extent that even U.S.-based companies are starting to acknowledge the potential backlash, not to mention the national security, economic growth, and proprietary intellectual property concerns that outsourcing brings.

If reducing costs and increasing short-term profits are the only driving criteria for management, then offshore outsourcing will occur regardless of how far we open the door to guest labor, because the relative cost of acquiring labor and facilities is presently so far tilted toward offshore production that there can be no realistic competition.

The Chairman of the American Association of Engineering Societies recently put that clearly in focus by asking the question, how do you compete with an $800-a-month engineer? I commend that recently published article to you for your reading.

IEEE–USA believes the increasing reliance on guest workers is actually fueling the trend toward offshoring. H–1B guest workers are increasingly being brought to the U.S. specifically to facilitate outsourcing by taking advantage of their connections, their language skills, and their familiarity with the offshore business partner.

An unintended consequence is that they take proprietary company information with them when they return to their home country. Guest workers take home with them an acquired knowledge of the U.S. market and business practices, a network of contacts, and exposure to U.S. technology and its applications. With that knowledge, coupled with lower foreign labor costs, they are well positioned to compete with U.S. firms for work.

Here are some specific policy recommendations. IEEE–USA believes it is time to rein in the H–1B program, not terminate it. We believe that business does need some access to talented, specific foreign workers. But it is time to adopt meaningful safeguards to protect the ability of skilled U.S. high-tech workers to compete for jobs on a level playing field.

The H–1B visa quota should be reduced to its originally authorized level of 65,000 per year. All H–1B workers should be paid a prevailing wage that is not less than the median salary paid to similarly qualified U.S. workers, and there needs to be a better understanding of exactly what the prevailing wage is.

Protections currently associated with H–1B-dependent employers should apply to all firms, not just those that are H–1B-dependent.

I note that Senator Hatch quoted that a study concluded that H–1B workers were paid $55,000 annually, while the average for all B.S. degree-holding employees was $46,000. It seems to me that is comparing apples to oranges.

The vast majority of the H–1B workers in that study were degreed engineers and computer scientists, and I certainly know of no degreed electrical engineers from my institutions who recently have left the university and are working for $55,000. That is substantially below median salaries for electrical engineers. In fact, a recent salary study for electrical engineers put median annual salary at $90,000. So I think we must be careful when we compare these average salary numbers and see whether or not, in fact, H–1B workers are depressing U.S. salaries.

The Department of Labor should be empowered to enhance compliance and reduce abuse by having authority to audit the labor conditions. Where H–1B workers are employed the $1,000 training fee should be retained and redirected so that it actually aids U.S. IT professionals and engineers. Using more of those funds for the NSF scholarships is one option to ensure that the money is used for the purposes it was levied. Another is to provide more flexibility to enable displaced U.S. workers to obtain the training they need.

IEEE–USA also urges Congress to pass the U.S. Jobs Protection Act, (S. 1452/H.R. 2489) bipartisan legislation that would help plug loopholes and prevent abuses of both the H–1B and L–1 temporary visa programs. The balance of our recommendations are outlined in my prepared statement.

To reiterate my main points, first, the H–1B program is exacerbating record unemployment among U.S. engineers. Second, the L–1 visa abuses compound this problem. And, third, importation of foreign workers is accelerating the loss of U.S. jobs through offshore outsourcing.

In closing, let me reiterate that these are difficult times for IT and electrical engineering professionals in the U.S., but there is a lot more at risk here than jobs for our members. If we continue down this path, the United States will become increasingly dependent on foreign technical expertise both here and abroad.

I think all of the speakers you have heard agree on at least one thing: that we ought to be finding ways to encourage more U.S. citizens, especially women and other underrepresented groups, to pursue degrees and careers in engineering, computer science, and information technology.

Remember that the congressionally mandated National Academy study in 2001 concluded that the H–1B program depresses U.S. wages in these high-tech job categories—whether you say it was through lower wages or that it kept wages from rising. Surely this is not going to encourage more young people to pursue degrees in engineering and information technology. The H–1B visa and other high-tech guest worker programs are putting our domestic talent pool at risk.

I thank you very much for the opportunity to address you.

[The prepared statement of Mr. Steadman appears as a submission for the record.]

Senator CHAMBLISS. Thank you very much, Mr. Steadman.

Mr. Duffy, thank you for being here and we look forward to your testimony now.

STATEMENT OF PATRICK J. DUFFY, HUMAN RESOURCES ATTORNEY, INTEL CORPORATION, CHANDLER, ARIZONA

Mr. DUFFY. Thank you, Mr. Chairman and members of the panel. My name is Patrick Duffy. I am from Phoenix, Arizona, and I am a human resources attorney with Intel Corporation. I thank you for the opportunity to share with you Intel's perspective about the important role that H–1B workers play in our economy.

What I would like to do today is tell you a little bit about the nature of Intel's business, our immigration philosophy, how we use the H–1B visa. I would like to briefly talk a little bit about how we use the L visa, discuss the training fee, as well as make some concluding remarks about some of the pending legislative proposals that are being debated about whether to reintroduce them in this body.

Intel Corporation is an engineering company that was founded in the United States 35 years ago. We design, manufacture and market micro computer components and related products. We are identified and recognized as the technological leader in the semiconductor industry. We have the developed the semiconductor technology on which the entire personal computer industry has been built. Our products have continually revolutionized the industry and redefined the role of the computer in our everyday lives. This impact is a testament to our talented workforce at Intel.

We are a U.S.-based company with global operations. Besides having facilities throughout the United States, we have major sites in Ireland, Israel, Costa Rica, Malaysia, and the Philippines. We also have an increasing presence in our fastest growing markets such as China, India, and Russia. Seventy percent of our revenue comes from outside the U.S.

The majority of our research and development work occurs within the U.S. In fact, 4 of our 5 most advanced 300-millimeter manufacturing plants are located in the U.S. This represents an investment of more than $8 billion in Intel's U.S. manufacturing capacity.

We believe that the benefits to the U.S. economy from multinational corporations like Intel are enormous. We employ close to 80,000 individuals worldwide. We had revenue of $26.8 billion in 2002, with a net profit of $3.1 billion. If we grow, jobs grow. We recognize at Intel that the key to growth and the key to being number one in the high-technology industry is we need the world's best engineering talent who can develop innovative products that generate demand and spur growth.

With respect to our immigration philosophy, we view employment-based immigration from two distinct perspectives. First, we look at business immigration from the perspective of needing to fill critical gaps among our U.S. workforce through sponsorship of foreign nationals through the H–1B program and then later on through the permanent resident process.

Secondly, we use the L program to move our global workforce for temporary assignments to facilitate technology development and

ramp our global factories to high-volume manufacturing of our products.

We have a clear philosophy with regard to hiring foreign national employees in the U.S. First, we seek U.S. workers when we need to fill a U.S. position. We have a visa sponsorship guideline that provides an example of this philosophy.

Before we will agree to sponsor a foreign national who requires an H–1B visa to work in the United States, we require the business group to demonstrate to us that they have engaged in good-faith efforts to source-recruit qualified U.S. workers for this position and they have been unsuccessful. This is above what the law requires. Nevertheless, it reflects Intel's commitment, we believe, to the U.S. worker.

As a result of our visa sponsorship guideline, our H–1B employee population in the U.S. is less than 5 percent of our U.S. workforce. This small percentage of our workforce is comprised of individuals possessing unique and difficult to find skills which can only be acquired through advanced-degree, university-level education.

In terms of Intel's use of the H–1B visa, just like many companies in the U.S. today, our overall external hiring has decreased since the beginning of the economic slowdown in 2001. Consequently, so has our hiring of employees who require H–1B sponsorship. Nevertheless, we do continue to hire a number of employees requiring sponsorship for those positions where we cannot find qualified U.S. workers with the advanced education, skills, and expertise we need to compete in this global economy.

Examples of these jobs include design engineers at the master's and Ph.D. levels in fields such as electrical and computer engineering, and process engineers at the master's and Ph.D. levels in fields such as chemical and materials engineering. The vast majority of the H–1B workers we sponsor are educated at U.S. universities. We expect that we will continue to sponsor H–1B employees in the future, for the simple reason that we cannot find enough U.S. workers with the advanced education, skills, and expertise we need.

As I think every member of this panel has noted, the problem and the solution are found in the U.S. university graduation statistics. About half of the graduate students in physical sciences in U.S. universities are foreign nationals. That percentage increases the higher the degree and the more prestigious the school. At Intel, we need engineers operating at these rarified levels of knowledge in order to spur our research and development efforts, and to generate the products that we hope will spur growth and demand in our economy.

It is important to also note that many U.S. companies and the U.S. Government collectively contribute billions of dollars to universities to support cutting-edge research, and much of that work is done by graduate students, many of whom are foreign nationals. If these individuals are to remain in the U.S. and contribute to our economy, they need to have H–1B status in order to work.

There are U.S. employers who are eager to hire them, but if the H–1B program is burdened by fewer numbers, more bureaucracy, and delays in processing, employers will not have the option and gifted students will leave the U.S. We believe that we lose economi-

cally, intellectually, and culturally if our policies force these students to leave the U.S. and go to countries and companies that compete with U.S. companies such as Intel.

Intel's experience with the H–1B program is that hiring such talent through the H–1B program does not displace any U.S. worker because our experience has shown that U.S. workers with the same education and skills are simply not always available in sufficient numbers to satisfy our hiring needs. Hiring this level of engineering talent is the way in which we invent new products, ensure quality and efficiency in our production, and grow the company in both revenue and jobs.

As some have noted in arguing against the H–1B visa, or even the abolition of the system, they quote unemployment statistics to prove that H–1B visa workers are not necessary. The common argument is we look at the unemployment rate for electrical engineers. It is important to note that not all electrical engineers are the same and that the disciplines are not interchangeable.

For example, many electrical engineers direct and coordinate operation, maintenance, and repair of equipment at customer sites. This is quite different than the type of electrical engineer that Intel hires who requires H–1B sponsorship. Our engineers are primarily component design engineers with master's degrees or Ph.D.'s who have highly specialized skills in very large-scale integrated circuit design, complementary metal oxide semiconductors, and device physics. Engineers with such education remain in short supply in the U.S. workforce.

Our experience has also shown that engineers without such education cannot acquire it by on-the-job training or by a short course in a vocational setting. Rather, our experience has shown that this education can only be acquired in the course of a structured academic program that, in turn, relies upon the person already having the requisite math and physics academic building blocks. Access to these highly educated engineers is critical to development of our future generation of products and technology, and to our ability to maintain our position as a global leader in our industry.

Clearly, the real issue here is the lack of highly educated U.S. candidates for jobs for which we experience shortages. We are so convinced that academic training is both where the problem and solution lies that we contribute over $100 million per year to improve teaching and learning. It is important to note this is more than the amount contributed by the $1,000 assessment for H–1B visa applicants for all of 2000.

Our goal is to spark interest in the hard sciences and engineering among U.S. students in order to generate a highly educated workforce of U.S. engineers. Emphasizing academics in the hard sciences and engineering is the only way to build a U.S. workforce that eliminates reliance on foreign talent. But it is important to remember this is a long-term process. The requisite education needs to begin in elementary school and continue through advanced university curriculums if it is to meet our industry's needs.

Next, I would like to discuss how we use the L visa. Intel's use of the L–1 visa for intra-company transferees is quite different than our use of the H–1B visa. The vast majority of cases for which we sponsor an L–1 is in connection with temporary assignments in

the U.S. rather than to fill a shortage of highly educated engineer positions that exists in the U.S., as we do with the H–1B visa.

Our L–1 temporary assignments are primarily for employees who work on our new products where we have worldwide collaborative design efforts. We know that our use of the L–1 visa is consistent with the legislative intent of the program.

Key personnel who are employed by Intel and do work only for Intel abroad are brought to the U.S. for temporary assignments at Intel and only Intel. Last year, 95 percent of the employees we sponsored for L–1 visas came to the U.S. on temporary assignments and when their assignments ended, they returned to their home sites to work for Intel as Intel employees.

There are rare instances where we use the L–1 visa to fill a U.S.-based position, but it is usually to transfer a key manager or executive to the U.S. because there are domestic operations at our corporate headquarters that require that individual's global experience and knowledge. This is the same reason for which we will place U.S. employees in other countries.

It is important to recognize that in today's global workplace, we need to consider key workers as part of a global workforce rather than tied to any one site, whether foreign or domestic. It is a new and urgent dynamic in our industry.

We design, manufacture, and sell to a world market. Our human capital, just as our products, needs to be easily transferred if we are to compete in this world market. U.S. policies that isolate or obstruct our ability to move our human resources can seriously compromise our success, and our failure is certainly not good for either the U.S. economy or U.S. workers.

Next, I would like to offer you some brief perspectives on the training fee and the reach of the training programs. Intel does support the $1,000 training fee.

Senator CHAMBLISS. Mr. Duffy, I don't want to cut you off, but I am afraid we are going to get interrupted by a vote. I know your detail of all of this is in your written statement. If you could summarize right quick so we can get to questions, please.

Mr. DUFFY. Sure. Basically, don't throw the baby out with the bath water. Recognize there are legitimate uses of business immigration visas, and it is important that this body consider that it not do anything that impedes the ability of U.S. business to compete in this marketplace and tilts the playing field in favor of our foreign competition, who are trying to hire the same workers.

[The prepared statement of Mr. Duffy appears as a submission for the record.]

Senator CHAMBLISS. Thank you very much.

We have been joined by several of my other colleagues here who have not had the opportunity to make any sort of opening statement. We are going to have rounds of ten-minute questions, and I would tell each of you that if you want to make any sort of brief opening statement, do so at first, and then we won't charge that against your ten minutes.

I will move directly to Senator Kennedy.

STATEMENT OF HON. EDWARD M. KENNEDY, A U.S. SENATOR FROM THE STATE OF MASSACHUSETTS

Senator KENNEDY. Thank you, Mr. Chairman. I will put my full statement in the record.

[The prepared statement of Senator Kennedy appears as a submission for the record.]

Senator KENNEDY. I want to thank you very much for having this hearing. It is a very, very important hearing because it is basically about the workforce in our country which is the backbone of our economy both now and in terms of the future.

This hearing is held at a time where we have had a rather important change, a dramatic change in terms of our economy over the recent years, reflected in an unemployment rate of 6.1 percent, with no sign of abating. In Massachusetts, the rate is 5.4 percent, in sharp contrast to 3 years ago when we were looking at the whole issue of H–1B and it was 2.5 percent at that time.

We also have a situation where we have 22,000 applications, through no fault of their own, basically as I result, I believe, primarily of problems in the immigration lag, given the general kind of lag that the Immigration Service has accumulated. We are also looking at the new additions that will be allocated in terms of Chile and Singapore with the free trade agreements.

So you put all of those together and that cuts the 65,000 down very considerably, I guess, to about 40,000, and that is a very significant alteration and change. I personally believe we have to deal with the 22,000. It would be grossly unfair to these individuals who have just gotten caught in the bureaucracy and have been left in limbo.

Comments have been made about the filing fee. I have been one who supported a higher filing fee, but we have seen the determination of the Congress with the $1,000. Even with this, we have seen the amounts that have been allocated toward training and it is really very, very significant. $129 million has been spent in computer sciences, engineering, and mathematics at NSF. Twelve thousand low-income undergraduate and graduate students received scholarships in 2000 and 2002; a $228 million technical training program at DOL, 56,000 individuals to be trained in this. That is not insignificant.

We have had very good testimony about how H–1B ties into the L–1, and I thank the Chair for having a very informative hearing on the L–1. I personally believe we can deal with the L–1 abuses with legislation. There have been pieces of legislation that have been introduced to attempt to do that. I am hopeful we can work that out. I am sure we can.

It is nice to see a number of you back. Mr. Stephen Yale-Loehr, it seems like only yesterday you were here on the L–1 visa, and others as well.

Mr. YALE-LOEHR. I am buying an apartment in Washington.

Senator KENNEDY. Well, we benefit from your experience.

Others are here and want to talk, but I would be interested as someone who spends a good deal of time thinking about this in how do we develop a program. If we are looking into the future, uncertainty in terms of our economy and seeing these changed economic

circumstances, how do we really plan down the road in the future as to what this figure really ought to be?

I always thought what we were trying to do is to have those individuals with very special skills. The fact that they were working here was going to mean that more workers were going to work here and were going to increase our economic capability and capacity. It was going to make us more competitive and it was going to stimulate the economy, and we were going to have a shortage of individuals that had skills and there were training programs to upgrade those skills for Americans to be able to work.

We obviously want to deal with the abuses, and I might come back and give written questions about suggestions that you have about how we can deal with the outsourcing that Mr. Steadman has talked about. We have heard other testimony along those lines. In fact, it is happening and we have had hearings with the different groups that go out there and purposefully do that. We have to deal with the abuses that take place.

We heard today—and I will just wind this up—from one of our colleagues; actually, it was Senator Schumer from New York who mentioned a securities firm in New York City that employs 800 people at the present time with an average income of $150,000. Three years from now, none of them will have a job, all moving overseas for about $10,000, every one of them. And these are highly skilled people, people obviously, clearly, in computer technology, information technology, highly skilled people. I know the total number of people in computers has moved down a bit.

We used to have low-income jobs moving overseas, and now very eloquently from all of you pointing out middle-income engineering jobs are moving overseas. That is maybe a different question, but how do we develop a system where we have to get some numbers up and that is going to be really reflective of where we are in our economy, and still try and maintain—if you agree with me that that was the purpose of this was to try and take special skills that would expand our economy, how do we figure out what that number is?

Mr. YALE-LOEHR. Is that a question?

Senator KENNEDY. Yes, you have got it.

Mr. YALE-LOEHR. That is a very complicated question and there is no easy answer to that. I think that in the long term, industry, government, and educational institutions all have to sit down and figure out what is best for America.

Congress has worked hard over the last several years in the H–1B context to try to make sure there is a balance between allowing skilled workers to come into the country, while still protecting the U.S. workforce. You see that through the training fee, you see that through the labor attestation requirements, you see that through Labor Department enforcement.

I think we have a delicate balance now and I think that in the short term, because of these changes that take effect October 1, the safest, simplest thing maybe to do is to simply say let's keep that delicate balance in place for another year or so while we convene a larger group of people—industry, government, educational institutions—to look at the whole issue, because some of these are not immigration.

You want immigration wagging the economic dog here. Some issues like outsourcing and offshoring really are not directly related to immigration, and I think you need to focus on what is really important both in the short term and the long term.

Senator KENNEDY. That is very helpful.

Would others like to make a brief comment on that? Ms. Dickson.

Ms. DICKSON. I don't think we wanted to see a quick fix here. I agree with Stephen. We need to do something in the interim, but it is a much bigger picture that we have to look at. Every time we run out of numbers, we pass some legislation for a short period of time and we increase the cap, and then a couple of years later, we are back at the same situation. Maybe an interim measure has to be done, but we have got to look at the bigger picture and come up with a better solution.

Senator KENNEDY. That is helpful.

Mr. Steadman.

Mr. STEADMAN. I couldn't agree with you more, Senator Kennedy. The purpose of H–1B visas was highly specialized, enabling access to particular skills. Clearly, many members of my organization would have liked me to urge you to end H–1B visas entirely. I didn't do that. I believe there are justifiable reasons for the program as long as we keep the numbers reasonable, and I have testified as to what that needs to be.

My only additional comment—and I think it agrees with what other witnesses have just said—is that a few decades ago we were very worried about national security in a different context. Our ability to design, build, fabricate, produce nuclear weapons, for example. And there were very well-thought-out programs that encouraged domestic talent to enroll in science and engineering. At that time, computer science wasn't so important. Programs to support graduate study in these disciplines were limited to U.S. citizens. They paid stipends that were very much higher than those for other graduate fellowships.

Senator KENNEDY. The National Defense Education Act?

Mr. STEADMAN. Yes. The NDEA was more targeted to where we needed to go than things in the Department of Labor, in my opinion. These are longer-term, higher education issues, as the gentleman from Intel has pointed out.

Senator KENNEDY. Mr. Duffy, quickly. I am going to run out of time.

Mr. DUFFY. Yes, I am sorry, Senator. Just basically I don't think that it is always a direct connection between immigration and outsourcing, and we really need to look at what is the root cause and what is the U.S. doing in order to ensure that we have the workforce to spur innovation and development.

Senator KENNEDY. Let me come back to the training programs. We have got the figures on that. The individuals selected generally are through the consortia that are worked out, business, labor and community consortia that are worked out to go into these programs, and then the training programs are developed. I am not going to go into what the results have been. I think they have been quite impressive, but I think they could be strengthened.

Let me start with you and go down. Do you have recommendations or suggestions on how they could be done better? With the

amount of money that we have got, how can they be done better? How can they be tied in and achieve the general objective more effectively? What more can be done?

My good friend, Senator Feinstein, is here, and she was very active in the development of this program. We looked at the Department of Labor, Commerce, the National Science Foundation. All of us were interested in trying to get the best here.

What can any of you tell us, based on your experience, about how to make these programs more effective in terms of achieving what we had intended?

Mr. YALE-LOEHR. Senator, I don't have any direct experience with this program, only from what I have read and that is very little. My understanding is that a large chunk of the money is going to the Labor Department for general training and skills development, and I think based on the testimony here we may want to come to a consensus that maybe we need to focus more of that money at the high academic end rather than at basic training.

Senator KENNEDY. Interesting.

Ms. Dickson.

Ms. DICKSON. From my perspective, it was the first time I really got the figures on how much money was spent on training and where it was going, so it was enlightening to me.

I don't think that the program is really communicated perhaps as well as it could be. And, again, what are we looking to achieve with this training and at what level would be something to look at, but I am not sure people even know how to access the money.

Senator KENNEDY. Mr. Steadman.

Mr. STEADMAN. I would absolutely agree with what Stephen just said—that more emphasis on higher levels is appropriate. I would add that I have direct experience with the CSEMS (Computer Science Engineering and Math Scholarship) program at NSF. It has been an outstanding success specifically in attracting women and minorities to math, science, and engineering careers, more so perhaps than anything else that the Division of Human Resources at NSF has done recently.

Senator KENNEDY. The GAO indicates that approximately 37 percent of the students in the scholarships are women, and all the problems that you mentioned.

Mr. STEADMAN. I seldom agree with the GAO, but in this case they are absolutely right.

Senator KENNEDY. Let me ask you just finally, if I could, Mr. Chairman—and this sort of gets back to what we talked about a little bit in the first question about the regional disparities.

Is that out of the question in terms of looking at these regional disparities? We are going to have to set some figures on the overall, and have to develop training programs. This is going to be obviously a national kind of—-immigration is a national issue, but do you have suggestions about anything we could think of, or does that get too complicated too quickly? Could you help us with that, Mr. Steadman?

Mr. STEADMAN. I would stay away from trying to deal with it regionally, frankly.

Senator KENNEDY. Finally, I would submit questions about suggestions on enforcement. There is a difference between the pre-

vailing wage and, as I understand it, a similarly situated worker's wage. That is complicated. I am not going to take the time here, but I would like to hear you out on these issues and recommendations about how we could tighten the program in terms of potential abuses.

I will write to each of you and if those answers could be included in the record, I thank the Chair very much for having the hearing.

Senator CHAMBLISS. Certainly, every member will have the opportunity to submit written questions, if you members of the panel will please receive those and answer them with all due haste, please.

Senator Sessions.

STATEMENT OF HON. JEFF SESSIONS, A U.S. SENATOR FROM THE STATE OF ALABAMA

Senator SESSIONS. Thank you, Mr. Chairman. This is an important issue. I remember when we voted on it before, it was during the Y2K period and the high-tech IT boom. We couldn't get enough workers and we voted to increase the numbers dramatically. Since then, there have been changes.

Anecdotally, I would just say that I had a friend tell me—a Chamber of Commerce type that is a free trader, but he said he saw a former computer engineer working a cash register in his medium-sized town. I have got applications for employment from a Stanford engineering graduate to work on the Senate staff. He had been out of employment, so the unemployment numbers are somewhat troubling to me there. We know at Intel, as you noted, 13 of your 45 Fellows are foreign-born. So it shows how much creativity and fire power we can get when we give bright people a chance to participate. This is not an easy issue for us.

I would just like to ask a few bread-and-butter questions here.

Ms. Dickson, how do people apply? Where do they come from, the ones who apply to your company?

Ms. DICKSON. Generally speaking, our most effective tool is the online IRCO website, and there is an electronic way of submitting your resume.

Senator SESSIONS. Now, are they living in the country, studying at American universities, or are they out of the country with foreign degrees?

Ms. DICKSON. I think most of our applicants are here in the U.S. for U.S. jobs, but I mean technically anybody who has access to a computer worldwide would look at it. Again, we tend to filter out those people. We are mostly looking initially, the same as Intel, to hire U.S. workers. They are cheaper and there are a lot less problems to contend with.

But in the areas of special skills, you will start looking broader and broader. For example, we just hired a worldwide engineering manager. He is actually a Polish national who has advanced degrees, worked in Australia, actually taught in the universities there, now works for a company in Germany, and we have just hired him to come and work for us. And he has very specialized skills.

Senator SESSIONS. Yes. Well, let me just ask this because I have just got a minute and I have to scoot.

Where do you get most of your people, Mr. Duffy?

Mr. DUFFY. Senator, we try to cast as wide a possible net as possible. In terms of our H–1B hires, most of them do come from U.S. universities and colleges.

Senator SESSIONS. They were here through education visas, properly here. They are about to graduate, then they apply under the H–1B program and if you think they qualify and you need them, you go through the process?

Mr. DUFFY. Right. We will interview them through on-campus recruiting, advertisements through the Internet, job fairs.

Senator SESSIONS. Now, of those, how many have bachelor's, master's, and Ph.D.'s, if you have an idea?

Mr. DUFFY. The majority of our individuals have master's and Ph.D.'s, the component design engineers.

Senator SESSIONS. Do we have any idea how many of these people become citizens through various processes that might be available to them, and how many go back after how much time?

Mr. DUFFY. Well, Senator, I can let you know. Even though in the press you see "temporary worker," these are not temporary workers to us. The H–1B is just one step in making these individuals U.S. workers. Since we are hiring them in shortage positions, we sponsor them for permanent residence. They get their green card, they become U.S. worker and remain in the U.S.

Senator SESSIONS. For the rest of their lives?

Mr. DUFFY. Hopefully, yes. Hopefully, they will stay with Intel working the rest of their lives rather than going to a competitor.

Senator SESSIONS. Well, we don't want to be a country that turned down Einstein, but we don't want to be in a situation in which we flood the market.

Mr. Steadman, there is no doubt that labor is like a commodity. If you dump five times as much cotton in this country, the price of cotton is going down. If you dump much, much more labor into this country, the marketplace value of the workers or engineers will go down.

How do you deal with these issues? Do you have any comments so far on what has been said?

Mr. STEADMAN. Well, yes. I think the only thing you hear really wide agreement on, Senator, is that the longer-term solution is to encourage in various ways—and I believe it can be done—more domestic people to pursue what was referred to as hard science and engineering degrees. Now, I am assuming that means the brittleness and not how difficult it is intellectually. I was pleased to hear there is some chance even for a university professor eventually to get a real job at Ingersoll-Rand.

I think in the short term it is accurate to say that in highly specific areas, allowing some H–1B visas with appropriate safeguards is still the appropriate thing to do. In the longer term, we need to think about how we encourage people in all the education levels. I mean, I am not defending only the universities or just attacking the K–12. At all levels, we need some assistance and some focus on what is going to make this country more competitive economically in the future.

Senator SESSIONS. Do we spend more money on taking people, say, with a B.S. degree and help them to—maybe the job market

has changed for them and they are now unemployed—to assist them, experienced workers and engineers, to change so they can meet the current demand?

Mr. STEADMAN. I believe you are right on target for the quickest, most effective way, yes. Take people with bachelor's degrees and encourage them to continue or go back to graduate school to learn about VLSI and the chemical processing that they need in the semiconductor, for example industry. Those are skills we need to encourage.

Senator SESSIONS. And for a relatively small amount of money comparatively, we could help transition a lot of capable people, would you say?

Mr. STEADMAN. I think that is accurate. I understand how tight our time is, I just have to tell you about a concomitant issue that no one has been speaking about here; one that would also encourage a different face on the faculty at U.S. engineering and science departments.

I think right now the face of that faculty is not very encouraging to women and minorities to participate, to pursue careers in engineering. It is just the reality that we all like to go to a classroom and at least occasionally see somebody that we look like. I mean, it is as simple as that, and yet as complicated as that. It is a problem that needs attention.

Senator SESSIONS. It is an interesting question and it is something I look forward to discussing with you further, Dr. Steadman. We are glad to have you at the University of South Alabama and we are just excited about that and hope you enjoy the city.

Mr. STEADMAN. So am I. I hope I will see you down there soon.

Senator SESSIONS. No doubt. If you like baseball, I will be out there at Eddie Stanke Field.

Senator CHAMBLISS. I know Senator Sessions well and he is not going to be an applicant for a metallurgical engineering degree.

[Laughter.]

Senator CHAMBLISS. Senator Feinstein.

STATEMENT OF HON. DIANNE FEINSTEIN, A U.S. SENATOR FROM THE STATE OF CALIFORNIA

Senator FEINSTEIN. Thank you, Mr. Chairman. To the Senator from Alabama, if he wants to see good baseball, he has got to come to San Francisco and see the Giants play.

Senator SESSIONS. Oh, yes.

Senator FEINSTEIN. That is good baseball.

Senator SESSIONS. Well, I have seen USC at the University of South Alabama, which is a competitive national college program.

Senator FEINSTEIN. Mr. Chairman, I just wanted to use my time to make a brief statement.

I am very concerned about these programs. I did a lot of speaking throughout California in August. I cannot tell you how many workers came up to me and said, I have been replaced by somebody I trained and they are getting a third of what I got.

Now, the degree to which this permeates the system, I don't know, but I do know this. Of the Department of Labor investigations, of those 300-plus that have reached final conclusion, over

half of them were found to have some fraud, and there is $8 million in fines against those institutions.

I do know that companies like Intel and Ingersoll-Rand are obviously legitimate companies, but there are other companies that use job shops. And it is a catch-22. This isn't an easy one because we are bleeding jobs offshore at the same time. We don't want to lose the jobs offshore, and yet we want to be able to have American workers fill jobs.

The Department of Homeland Security—and I want this just for the record—has done a report entitled "Characteristics of Specialty Occupation Workers: Fiscal Year 2002." There were a total of 197,537 petitions approved by type that year. Initial employment was 103,584. Of that initial employment, 36,494 were aliens outside the United States, and aliens in the United States were 67,090. Continuing employment were 93,953. This is a huge program.

As we all know, it goes back to 65,000 in 2004. My view is that it should go back to that unless we are able to produce some stronger safeguards, standards, and a mandate that there be some prevailing rate considerations to stop this business of having a worker train another worker, then be fired, and find out that the worker they trained is getting a third the salary.

Now, at the same time, August, I think, was the 37th month in a row we have lost manufacturing jobs, and this is predicted to increase. The jobs go offshore. So it is a catch-22. How do we encourage companies to better train American workers, encourage schools to better train American workers? We tried that, I think, back in 2000 with the high-tech community, and I suspect my State is the highest user of H–1Bs. I don't know, and I would suspect that Massachusetts is probably number two.

I have to check and see how that training program has gone, but as one of the witnesses pointed out, the great weakness in math and science—and this program through the National Academy of Sciences that we authorized was supposed to provide standards and scholarship programs, and really move math and science training.

Now, I am elected, obviously, to represent people from California who are losing their jobs big time. How do we correct this program? How do we put in the safeguards that are necessary in view of this outsourcing, and also in view of the fact that Americans are being replaced? I mean, if you look at the countries, the majority come from India, China, Canada, and some other countries, but India is the big one, China next.

So I would like to have you answer the question, each one of you. What do you say to someone like me where now wherever I go, this program comes up and somebody tells me they have been replaced and they are angry? Does anybody want to take a crack at it?

Mr. YALE-LOEHR. Well, let me start that, Senator Feinstein. I think Congress did a good job in trying to build protections into the law, but like any law, the question is it is going to be enforced adequately? For example, if you have a law saying you are only supposed to drive 55 miles an hour, but there are no State troopers along the side of the road to enforce it, everybody is going to violate the law.

Senator FEINSTEIN. And this law can only be enforced, as I recall, on the petition of the—somebody has to file a complaint.

Mr. YALE-LOEHR. In 2000, Congress amended that and allowed the Labor Department to directly enforce alleged violations of the H–1B program, and that particular provision sunsets as of October 1. For at least the last 3 years, the Labor Department has had the authority to do its own investigations and not have to wait for a complaint.

Senator FEINSTEIN. So we would want to take a look at that.

Mr. YALE-LOEHR. I think you want to take a look at that and you may want to consider increasing appropriations for the Labor Department to better enforce the H–1B program. That may go a long way to making sure that employers really are complying.

The law already says they have to pay the higher of the prevailing wage or the actual wage for that particular job. So it is in the law. The question is how do you make sure that employers abide by that.

Senator FEINSTEIN. Let me stop you. My staff tells me that is only for H–1B-dependent employers, which is only 15 percent of the users.

Mr. YALE-LOEHR. What is only for H–1B-dependent employers?

Senator FEINSTEIN. Fifteen percent of the users of H–1B visas—

Mr. YALE-LOEHR. Right. There are H–1B-dependent employers.

Senator FEINSTEIN. So it is only 15 percent, if I understand what she has just told me.

Mr. YALE-LOEHR. There are two types of employers for H–1B purposes, regular H–1B employers and those who use at least 15 percent of their workforce comprised of H–1B nationals. Those people, because they have such a high dependence on H–1B in their workforce, are called H–1B-dependent employers. They have to live by a higher attestation regime, do more to try to protect the U.S. workforce than regular H–1B employers. Those dependency provisions also go out October 1 unless Congress acts.

Senator FEINSTEIN. Does anybody else have any suggestions?

Ms. DICKSON. I agree with Stephen. I think the enforcement mechanism is there. I think the law has a lot of—it is complex to look at the prevailing wage, the actual wage. I know when someone is hiring an H–1B worker, we really have to talk them through it so that they understand what the salary has to be for that particular employee and what they have to look at to actually establish the correct wage for that employee.

I do think certainly big companies are working hard to comply with the regulations and the enforcement mechanism is in place already. It is just a matter of using it, I would say.

Senator FEINSTEIN. Mr. Steadman.

Mr. STEADMAN. I think largely what you need to say to them you just said to this panel at the beginning of this panel when you said you believe that, in fact, the abuses have to be stopped. You need to say that to those people.

I am a little bit less enthusiastic about the ability and the will of the Department of Labor to enforce some of these things than some of the colleagues at this table, I guess.

First of all, it is accurate what your staff said and what Steve said that there is a higher attestation requirement for those who

are H–1B-dependent employers. I see absolutely no logic to why that shouldn't attach to all people employing them. After all, the purpose of this was not to displace U.S. workers in the first place. It was to allow companies, businesses, to bring in people when they could not get U.S. workers. Why not make them attest that they have tried to get a U.S. worker before they do this? It seems to me a straightforward thing that ought to be done. So many of those tools are right at hand and it appears to me the Senate is right on track to make it happen.

Senator FEINSTEIN. Mr. Duffy.

Mr. DUFFY. Senator, I think it is important to be careful to recognize the distinction that there is not always a direct connection between an H–1B visa and business decisions to outsource. So we need to look at that carefully.

In terms of attestation requirements, we believe the current scheme is accurate, and it is also careful again to balance that those employers whom you view as dependent who have to attest there has been no displacement tend to be the ones who maybe aren't really focusing on the true intent of the program in terms of the skill shortages.

You want to be careful not to penalize the legitimate users of the program with a process that becomes so burdensome and slow that it impedes our ability to hire these skill-shortage positions in the U.S., because again that impacts our research and development which helps create jobs.

Senator FEINSTEIN. But you have to understand that it is not easy when somebody comes to you and says, this is a program you helped create and I am losing my job because of it. That is the concern that I have. It is one thing not to have a position filled and not to be able to really recruit or find anyone so that you can attest that you have tried to recruit, under penalty of perjury, and bring somebody in.

It is another thing to have an American worker have to train their replacement; I mean, the indignity of finding out they are training somebody who is going to work for a third. And interestingly enough, it always works out, at least among the people who have come to me in different places in California, that their replacement is paid about a third.

Do you agree, Mr. Steadman?

Mr. STEADMAN. I certainly have heard that those things happen, and I agree that it is disturbing beyond belief. Clearly, that is an abuse of the program that needs to be stopped.

Senator FEINSTEIN. If any of you have any suggestions, I would certainly appreciate it. I mean, the numbers don't drop until next year, so we have a little bit of time. But I think whatever the number is going to be, there is going to have to be attached to it some guarantee to prevent this sort of undercutting of the American worker in the way I have just related.

Do you have any other comment?

Mr. YALE-LOEHR. No. As Mr. Duffy said, I think you cannot say there is a one-to-one correlation between the business decisions of a company and H–1B or immigration. I think sometimes people try to see there is a correlation when there is not necessarily.

Second, just to go back to my earlier point, I believe that again greater enforcement will help the program. Third, I want to say that some of the reasons companies are using the H–1B program to hire people temporarily is because it is taking so long to get people here permanently.

If we are trying to encourage people to work permanently, let's speed up the permanent visa process. If people could get their green cards more quickly, they wouldn't necessarily have to use the H–1B, and then these would be people who would be working permanently in the United States and contributing permanently. Some of the concerns my fellow panelists have mentioned about information going overseas to our foreign competitors would not be in effect.

Senator FEINSTEIN. Let me take back what I said. The H–1B numbers drop October 1, 2003. I have got to go into rapid motion.

I appreciate that, but the point is that the employer tries to find a qualified American worker and makes a showing that he or she cannot find that qualified worker. That is what is really important to me, and that the Labor Department, as you say, has the ability to see that that is done, to institute an investigation, to require an attestation under penalty of perjury. I am really worried about the back pay, $8 million. That is a substantial amount.

Do you have any other comment? I am really looking for suggestions because now we have got to move fast.

Ms. DICKSON. Well, I do believe that the critical piece here is to enforce prevailing wage. That mechanism is already there and we just have to be looking at that. If you are saying that some of your people are telling you they are making one-third less, well, what was their original salary?

Senator FEINSTEIN. Two-thirds.

Ms. DICKSON. Two-thirds. Pardon me.

What is the prevailing wage and what is that employer paying other people that are similarly employed? The statute is very, very clear that you have to pay the higher of either the geographical prevailing wage or what you pay other U.S. workers in the same or similar occupation. So if that statute was enforced, that should resolve some of those issues.

Senator FEINSTEIN. I just want to point out that the area of our State that is most troubled by this is the Silicon Valley community, where there is the most unemployment right now and a lot of layoffs, as well. So it has had just huge repercussions in the State of California.

How this figures in long term, I think, Mr. Chairman, we really have to give a great deal of thought because I don't think any one of us wants to run into some of the constituents that I have run into who are very aggrieved and very upset by this program.

If you have any other comments, I would like to hear them.

Mr. STEADMAN. Only to thank you for the opportunity to be here. It has been a pleasure.

Senator FEINSTEIN. Thank you, Mr. Chairman.

Senator CHAMBLISS. Thank you, Senator Feinstein.

If what I am hearing is correct, I think all of you have said that the resources out there from which you have to choose really are not that great from the standpoint of finding the right kind of engi-

neer. If the solution to this problem is what I am hearing, then it is not something that we are going to fix by lowering this cap once again to 65,000, or for that matter raising it to 200,000. It is more of a long-term fix that is going to have to take place with the education of our children beginning early on and bringing them through a master's or a Ph.D. program, which is going to take us a long time.

Just very quickly, if you all would just go down the line starting with you, Mr. Yale-Loehr, with respect to what the cap number should be, just give me a figure—65,000, 195,000, more, less, somewhere in between?

Mr. YALE-LOEHR. Let me give you two answers. One is I think in one sense we should not have to have a cap. If you are having appropriate protections of U.S. workers, if you are having adequate enforcement by the Labor Department, the H–1B process will be market-driven. Therefore, we are going to get the kinds of workers that we need and still protect U.S. workers. So in that sense, you don't need a cap at all.

As the National Research Council pointed out, any figure, any cap on H–1Bs is fundamentally a political decision. There is no economic basis for any such cap. Having said that, putting on my politician's hat, I would say for purposes of fiscal year 2004, a number of about 115,000 would be appropriate.

Senator CHAMBLISS. Ms. Dickson.

Ms. DICKSON. I would like to see some sort of a number that really represents what the needs are, and I also agree with Stephen that you don't really need a cap if it is market-driven. But obviously when you are talking about what the numbers are going to be for next year, 65,000 certainly looks much too low. Maybe 195,000 is way too high because we certainly didn't use that this year. So if you arbitrarily are going to continue and set a cap, something in between is what we are looking for.

Senator CHAMBLISS. Mr. Steadman.

Mr. STEADMAN. Obviously, my perspective is somewhat different. I think that it should be no more than 65,000, especially with the number of highly-skilled, well-educated U.S. engineers who are unemployed. Hundreds of thousands of them are available. IEEE–USA would welcome the opportunity to help U.S. companies find those people.

Senator CHAMBLISS. Mr. Duffy.

Mr. DUFFY. Senator, I probably agree with the other business representatives here that I tend to allow the free market to work its magic with that. Another alternative that you may want to consider is do you want to broaden the exemptions of those individuals from the cap.

As I noted in my testimony, the Ph.D. and master's-level engineers that we hire—the graduation statistics bear us out in terms of the fact that the majority of those classes are foreign nationals. So for certain individuals engaged in research and development at advanced degree engineering levels, you may want to consider exempting them from the cap.

Otherwise, I think if you have to pick a number, we are seeing right now we are going to end the year at 80,000. Hopefully, we

are beginning an economic recovery. You want to build some room into that number so you are not impeding that recovery.

Senator CHAMBLISS. Well, you answered my next question, and that is do we really need a cap or should the market dictate what the number ought to be?

Does anybody else want to comment on that?

Senator FEINSTEIN. Mr. Chairman, before they do, I have to leave, but may I ask you to place a statement by Ranking Member Leahy in the record?

Senator CHAMBLISS. Certainly. Without objection, we would be happy to.

Does anybody else want to comment on the exemption from the cap for foreign students?

Mr. YALE-LOEHR.

Mr. YALE-LOEHR. I agree with that particular exemption. My testimony also offers several other kinds of exemptions you might consider. For example, if a State or local or Federal Government entity determines that they need an H–1 worker, that is in the national interest. By policy, by regulation, they are going to consider U.S. citizens first, but if they can't find a U.S. citizen and really need an H–1B worker for whatever reason, I think that kind of worker should not be subject to the cap.

Second, non-profits. There are some non-profits related to research institutions or educational institutions right now that are already exempt from the cap, But other non-profits should also be included. For example, if a human rights organization needs an economist to determine the economic impact of certain human rights approaches, there is no reason why that person should be subject to the cap.

Third, you might also consider the fact, which is not really an exemption, but the fact that 22,000 H–1B petitions are already in the pool, but are not going to be decided until fiscal year 2004. That lowers the effective number of new numbers available next fiscal year, and you might do something to correct that problem so that whatever number you come up with is a sort of fresh number of real numbers available to people.

Senator CHAMBLISS. Mr. Duffy—and this may not be a fair question because of the different categories of engineers that are out there, but what is your starting salary for an engineer coming out of college?

Mr. DUFFY. Senator, I don't have those figures with me. I can get them to you so you can have them for the record.

Senator CHAMBLISS. Well, that usually from a supply and demand standpoint, I would assume, should control. And if we have got, Mr. Steadman, hundreds of thousands of engineers unemployed—and we heard some numbers of $90 to $100,000 for graduates—that is a little bit confusing. I am a little bit puzzled by why we need the program at all if you have got that kind of money being paid to folks and you have got that many unemployed.

Mr. STEADMAN. So am I a little bit confused about why it is needed at all, although there are clearly some very specific cases where it is needed, Senator. But I will tell you that statistics show that starting salaries for engineers and computer scientists have, in fact, declined in the last 2 years.

I would respectfully disagree that the 22,000 pending adjudications have anything to do with your question. There have always been pending applications from the previous year being used each year. I mean, that is not in my mind the real issue here.

I wish that every company in this country were as careful about trying to hire U.S. workers first as I hear is going on at Ingersoll-Rand and, because of my personal experience, I know happens at Intel. But the fact is, not all companies are like that. The fact is that abuses have occurred. They are clearly documented.

Some companies are not using the H–1B visas to hire people they couldn't find in this country. They are hiring H–1B worker and displacing U.S. workers after making them train the guest workers. I mean, that is just absolutely clear. So, unfortunately, you deal in a realm where not everybody is going to play by the rules unless you set some rules. That's why I think a cap is needed, in fact clearly needed, as well as safeguards for American workers.

Senator CHAMBLISS. I think it is pretty clear just from statements that we have heard from other folks that both the L–1 and the H–1B are abused by some companies or some individual proprietorships. But on a wholesale basis, I am not sure that is the case. Clearly, there has got to be some regulation of this.

But I will have to say that having dealt with H–2A, H–1B, L–1, and any number of other of our visa programs through the intelligence community, the H–1B works better than any program we have. I attribute that to the fact that there is a real need on the part of employers to get these people here. You are responsible for getting them here, you are responsible for them while they are here, and you are responsible for them to go back once the time frame within which they are authorized to be here is completed. So I think this program from that aspect of the day-to-day operation of it has worked real well.

You all have certainly contributed in a very valuable way today to the issue of how we should treat this in the short term, but I think even more valuable testimony you have given relates to how we need to fix the long-term problem. I again appreciate very much you taking the time to be here.

We will leave this record open for one week for any additional comments from members of the Committee. There will be some questions that some individual members will submit to you. Again, if you would get those answers back to us as quickly as possible, we would appreciate it. Thank you very much for being here today.

The hearing is adjourned.

[Whereupon, at 4:46 p.m., the Committee was adjourned.]

[Questions and answers and submissions for the record follow.]

[Additional material is being retained in the Committee files.]

QUESTIONS AND ANSWERS

Edward M. Kennedy Hearing Questions
Senate Judiciary Committee Hearing on
"Examining the Importance of the H-1B Visa to the American Economy"
September 16, 2003

Responses from
Elizabeth C. Dickson
Ingersoll-Rand Company
Testifying on Behalf of the US Chamber of Commerce

Question 1: From your perspective as an employee of a Fortune 200 company and member of U.S. Chamber of Commerce, can you explain generally why U.S. companies need H-1B foreign professionals? What kinds of industries use H-1B? What are the positions filled by H-1B workers? What professional credentials or specialized skills do H-1B workers possess?

US companies need talented H-1B foreign professionals to fill critical skill shortages found in the US, particularly for high technology jobs that require advanced degrees and/or professional experience in the areas of engineering, computer science, mathematics, and other sciences. Americans continue to earn fewer graduate degrees in math and science and in fact, fall further behind their international competition in virtually any test of math and science literacy. Many H-1B's hired by American companies have been educated at US colleges and universities, particularly at the graduate school level. Additionally, foreign nationals bring bilingual capabilities and multicultural expertise to the companies that employ them that further enhance our capabilities to market our products and services around the world. Our need for such knowledge continues to grow if we are going to maintain our leadership in innovative product design and competitiveness in the global marketplace.

The industries that rely on H-1B workers include manufacturing, information technology, financial services, universities, research centers, medicine, and many others. H-1B workers fill professional highly skilled positions that require a bachelor's degree as a minimum qualification. At Ingersoll-Rand, the majority of H-1B workers are employed in engineering design and product development, information technology that supports business and manufacturing operations, manufacturing management, as sales engineers, and in international financial management positions.

Question 2: In your testimony, you advocate an H-1B policy that recognizes market realities. But there is little reliable data to measure regional labor

shortages, or even shortages in specific sectors. What would a market-driven policy look like? How would you measure shortages in the H-1B specialty categories? How can the analysis be broken down by region?

We really do not believe that there needs to any specific measurement of industry or regional shortages. We believe that H-1B usage will fluctuate depending upon market demand. The Department of Homeland Security's recent report seems to reflect this reality. Usage of the H-1B numbers does in fact mirror the needs of the market. There are currently protections in the law requiring essentially equal pay and benefits. These protections provide adequate safeguards for US workers as long as they are properly enforced.

Inability to meet market demands and company goals will inevitably drive projects overseas, resulting in a loss of more U.S. jobs and a decrease in U.S. spin-off revenue. Trying to second guess a dynamic economy is likely to cause even greater problems.

Question 3: If we enact more restrictions and lower the cap on H-1Bs, what happens if the economy rebounds? Could the new restrictions actually harm our economic growth?

Yes. There is no doubt that further restrictions will harm economic growth. The H-1B visa category is already highly regulated, requiring companies to maintain extensive public access files that document prevail wage data and compliance with all the other attestations mandated by the labor condition application. Additionally, the Department of Labor has the authority to investigate companies that do not properly comply with these regulations. So an effective mechanism for enforcement already exists and I feel further restrictions are unnecessary, burdensome to business, and can limit our economic growth.

As I stated in my remarks, I hope Congress will look for an H-1B solution that is not just based on current economic conditions but will take into consideration that we are beginning to see an economic recovery and understand the skills we need for America to remain competitive in this global economy. We must recognize the fact that there is an unavailability of advanced-degree American professionals in the math, science and engineering disciplines. Education and training of US workers will not fill the gap for many years to come and we have already trained many of these skilled foreign professionals at our own universities. Right now there are many other countries around the globe that are easing immigration requirements to attract foreign-born professional talent for their own economic advantage. We do not want a restrictive immigration policy that limits our hiring ability and lets other countries lure away the talented professionals that generate ideas, innovation, and the prosperity that supports American economic growth.

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September 25, 2003

The Honorable Saxby Chambliss
United States Senate
Washington, DC 20510

Re: September 16, 2003 Hearing on Examining the Importance of the H-1 Visa to the American Economy

Dear Senator Chambliss:

This letter is to follow up on the question you asked me on September 16, 2003 regarding the typical starting salaries for the Component Design Engineer and Process Engineer positions at Intel Corporation.

At the PhD level, the targeted starting salary for candidates in these fields is $83,100. At the Masters level, the targeted starting salary is $64,800.

Of course, this amount may increase if the person has relevant work experience or is successful in negotiating a higher starting salary. In addition, individuals who will work in geographic regions with a higher cost of living (e.g., Silicon Valley, Massachusetts, New Jersey, and Southern California) receive a geographic differential in addition to their salary. The geographical differential ranges from five to 15% depending on the particular geographic area where the person works. For example, the geographic differential is 15% in Santa Clara, California and the differential is 7% in Hudson, Massachusetts.

Moreover, employees receive stock option grants when they are hired. Their other compensation and benefits include bonuses based on the performance of the Company, profit sharing, 401(k) savings plan, stock purchase plan, and medical and dental insurance.

I hope this information answers your questions. Please let me know if you need any further information. Thank you for the opportunity to share how Intel Corporation uses the H-1B and L-1 visa programs.

Sincerely,

Patrick J. Duffy

Patrick J. Duffy
Human Resources Attorney

Edward M. Kennedy Hearing Questions
Senate Judiciary Committee Hearing on
"Examining the Importance of the H-1B Visa to the American Economy"
September 16, 2003

Patrick Duffy

In your written testimony, you urge members of Congress to proceed cautiously before implementing any legislation that hinders the ability of U.S. businesses to complete in the global marketplace. You advocate for continuing the status quo rather than acting in haste.

> **Question:** First, why does a U.S. company seek an H-1B foreign professional? Second, if we are to address the H-1B program more thoroughly and carefully, in your opinion, what are some of the factors and issues that ought to be considered at the outset?
>
> **Response:**
>
> **Intel's relies on the H-1B program to sponsor foreign nationals to fill U.S. based job positions for which we experience of shortage of qualified U.S. workers at the advanced-degreed level. We utilize the H-1B visa to obtain work authorization for these employees as we pursue permanent residence on their behalf and they then become U.S. workers themselves.**
>
> **The primary job positions for which we sponsor individuals for an H-1B visa and permanent resident status include Design Engineers at the Master's and Ph.D. levels in fields such as Electrical and Computer Engineering, as well as Process Engineers at the Master's and Ph.D. levels in fields such as Chemical or Materials Engineering. The vast majority of the H-1B workers we sponsor are educated at U.S. universities.**
>
> **These individuals have highly specialized skills in VLSI (very large scale integrated) circuit design, CMOS (complementary metal oxide semiconductors), and device physics. Engineers with such education remain in short supply in the U.S. workforce. A review of the graduation statistics from the graduate engineering programs in the U.S. underscores the fact that U.S. engineers with such education are in short supply. Today, about half of the graduate students in the physical sciences in U.S. universities are foreign nationals, and that percentage increases the higher the degree and the more prestigious the school. The percentage is greatest at the Ph.D. and post-doctorate level, and Intel needs engineers operating at those rarefied levels of knowledge.**

Important factors for Congress to consider when evaluating the H-1B program include:

- **What is the best way to induce U.S. students to pursue education at the advanced degree level and careers in the hard sciences, especially, math, chemistry, physics, and engineering?**
- **Given its historical inaccuracy, is there a need for a cap on H-1Bs at all or can select economic indicators be used to better reflect actual market conditions and needs?**
- **If there will be a cap, does it make sense to count job positions for which U.S. employers experience a shortage of U.S. workers against the H-1B cap? Is it necessary to expand the scope of the cap exemptions to include those disciplines for which U.S. university statistics reflect a lack of U.S. students graduating from such programs? For example, is it appropriate to grant green card status to those foreign students graduating with a Master's or PhD in Engineering from a U.S. university?**
- **Does it make sense to certify certain employers as exempt from the cap where the employer can demonstrate that it uses the H-1B visa to sponsor foreign nationals in those positions for which it experiences a shortage of U.S. workers?**
- **How can the Department of Labor better track the positive economic benefits to the U.S. economy of the H-1B program? For example, how can we tie economic growth to contributions of individuals who have worked in the U.S. on an H-1B visa.**
- **If the "H-1B replacement grant program" is to continue, where should it be housed (e.g., Department of Labor, National Sciences Foundation, Department of Education), and what should its focus be?**
- **What evidence/hard data exists that demonstrates there is a problem with the current H-1B (or current L) program? Based on that data, are we focusing on the correct solution?**

You also criticize the way H-1B training funds are used. You say that the current usage of the H-1B training funds represent a disconnect if the intent in allocating these funds is to eliminate the U.S.'s need for and reliance on H-1B workers.

Question: Can you explain in detail this disconnect and proposals on how to better use these funds?

Response:

The purpose of the H-1B program is to give companies such as Intel access to advanced university level talent in the hard sciences and engineering field. The need for the H-1B program is rooted in the lack of educated U.S. workers, particularly in engineering and other hard sciences.

The current allocation of the training funds is not primarily directed to solving the shortage of U.S. students in the advanced degree engineering and hard sciences programs. Rather, the grants so far have largely been directed to unemployed or underemployed workers. The training programs are intended to teach basic, entry level skills mostly in the nature of vocational training, not to provide advanced, university level education that is the H-1B program's key benefit to U.S. employers. (See Appendix V: Areas of Training for First 43 Skill Grants, September 2002 GAO Report on High Skill Training: Grants from H-1B Visa Fees.)

For example, a review of Appendix V demonstrates a number of grants to train people for jobs as certified nursing assistants, home health aides, licensed practical nurses, medical lab technicians, radiology technicians, registered nurses, dental technicians, pharmacy technicians, and medical unit technicians. None of these job positions are covered by the H-1B program. Using the grants to train individuals in these areas does not eliminate the shortage of U.S. students with advanced university level degrees in engineering and the hard sciences.

The September 2002 GAO Report on High Skill Training: Grants from H-1B Visa Fees demonstrate this disconnect. The report notes at page 21:

> **The skill grant training is designed by grantees to address skill shortages in the local workforce. However the programs, as permitted by law, do not always prepare participants for the specific kind of jobs held by H-1B visa holders.**

Similarly, the report observes at page 3 that "finding students eligible for the scholarship grant program has proven to be a challenge."

If the allocation of training funds is to be truly successful in replacing the need for the H-1B program, then greater funding must focus on academics. The grants must be tied to formal university education in math, chemistry, physics, and engineering at the Bachelors degree level at a minimum, but more urgently at the advanced university degree level. While the National Science Foundation Scholarship Program directed towards low-income students at the Bachelors degree level studying computer science, engineering, and math is a good start; we need to be directing funding at the elementary school level to build the foundation for students to pursue advanced degreed programs at the university level in math, sciences, and

engineering. We also need to recognize that such a process is a long term investment that will show returns over years rather than overnight.

Moreover, educational grants to laid off engineers to enter advanced degreed university programs to obtain Masters and Doctorates in the shortage areas such as VLSI, CMOS, and device physics would assist unemployed engineers from other industrial sectors to obtain the necessary academic training in these emerging technologies. These grants need to be sufficient to enable these engineers to study full time.

We think that part of the disconnect is that the agency in charge of these grants is not involved in formal academics to prepare people for the workplace, but with people who have become unemployed or underemployed. As long as the grant program is initiated through the Department of Labor, an agency dedicated to improving the existing workforce, it will miss the mark. The need for the H-1B program in this country is rooted in the lack of the formally educated worker in the hard sciences, particularly math and engineering, and no ancillary training can cure that void. Perhaps the Department of Education, in coordination with the National Science Foundation, is a better umbrella agency to develop grant programs that are geared towards U.S. students acquiring the necessary academics required for a career in engineering at a very sophisticated level.

Responses by

John W. Steadman, Ph.D., P.E.
President –Elect
The Institute of Electrical and Electronics Engineers – United States of America

To Questions Posed by

Senator Edward M. Kennedy
Committee on the Judiciary
United States Senate

For the Record of Hearings Entitled

Examining the Implications of the H-1B Visa for the American Economy

September 16, 2003

Comments and Questions: In the written testimony, Intel says that although the unemployment rate for electrical engineers is 7%, the company is still unable to find qualified U.S. workers with specialized degrees in electrical engineering. They claim that engineers without such education cannot obtain these skills on the job or through vocational courses, but only through academic studies.

What is your reaction to this statement? Are there IEEE members possessing these highly specialized skills? Can these types of skills be acquired on the job or through training programs?

Response: Based on reports from colleagues who are close to electrical engineering education, my personal experience with EE graduates and recent conversations with IEEE members who specialize in semi-conductor design and manufacturing , I have found that graduates with advanced degrees and experience in very large scale integrated (VLSI) circuit design and manufacturing , including women, minority and older IEEE members, are having difficulty finding jobs in many parts of the country. I would also point out that most electrical engineering students learn the basics of complementary metal oxide semiconductors (CMOS) technologies at the baccalaureate level.

Our most recent biennial salary and fringe benefits survey suggests that there are hundreds of qualified U.S. workers with degrees in electrical engineering and specialized education and experience in semiconductor design and manufacturing who are actively looking for employment.

And while the prerequisite education is normally received in regular degree programs at universities, it is certainly possible to "tune up" the skills of persons with BS or MS degrees in Electrical Engineering through intensive on the job or short courses so they can take on responsibilities associated with newer, fast-changing technologies.

Comments and Questions: I understand that IEEE supports using the H-1B fees to support the retraining of skilled engineers and other U.S. workers, especially those who have been displaced. However, you have concerns about the current training programs.

What are your concerns regarding the kind and level of training currently provided by the grant programs? How can the training programs be improved to meet the needs of U.S. workers and U.S. companies?

Response: Two recent reports, one from the General Accounting Office (dated September 2002) and the other from the Department of Commerce (dated April 2003) were decidedly critical in their assessment of the overall effectiveness of the H-1B technical skills training grants program administered by the US Department of Labor.

In its report, the General Accounting Office concluded that "skills grant programs are based on local workforce needs, although sometimes for lower-skill jobs than those filled by H-1B workers."

In a very comprehensive assessment of "Education and Training for the IT Workforce," the Technology Administration at the US Department of Commerce concluded that "... few of the H-1B training grants from the first five competitions would produce workers capable of assuming the professional-level IT jobs for which U.S. employers recruit foreign temporary professional workers. In addition, these grants have been insufficiently focused on the occupational areas of greatest demand for foreign temporary professional workers, as indicated by the occupational portfolio of those granted H-1B visas, in particular, training to prepare workers for IT occupations."

In contrast, the portion of the H-1B fees going to the National Science Foundation for the Computer Science, Engineering and Mathematics Scholarships (CSEMS) program has been very effective at attracting students from under-represented groups (women and minorities) to degree programs that address employers' needs for US workers with professional level education and training. In particular, the retention rate for students in these NSF scholarship programs has been outstanding, due in large part to the special student services that are provided by the institutions that have been awarded CSEMS grants. Thus we support the retention and expansion of the NSF-administered CSEMS program.

IEEE-USA believes that the Labor Department's Technical Skills Grants program can be improved to better meet the needs of U.S. workers and U.S. employers by redirecting the focus of these programs to the provision of highly specialized skills at professional levels for which foreign professionals (with at least a baccalaureate degree or its equivalent) are being recruited.

In addition we believe that U.S. employers and high tech professionals should have greater flexibility in the choice of qualified training providers than they have had under current law and regulations. And Congress should also consider the use of training vouchers to enable individuals to better meet their own specialized instructional needs.

Comments and Questions: I understand that you also have concerns about the Department of Labor's current authority to investigate H-1B complaints.

What are the shortcomings of the Department's investigative authority? What recommendations do you have to improve the Department's ability to investigate violations?

Response: IEEE-USA has long been concerned that the Department of Labor has very limited authority and limited resources to investigate complaints alleging fraud and abuses in connection with the H-1B and other temporary work visa programs that fall within its jurisdiction.

The most important change should be to extend the applicability of the recruitment and retention (no-layoff) attestations that currently only apply to a handful of so-called "H-1B dependent" employers to all employers who wish to hire H-1B workers. Since the company must already make attestations about other aspects of the work, such as paying the prevailing wage, they should also be required to affirm that they

have made an attempt to find U.S. workers and that they have not displaced similarly skilled American workers before hiring foreign guest workers. Since this would only involve "checking a couple of boxes", we reject any claim by employers that such a requirement would only complicate or unnecessarily extend the labor condition application process. If employers are serious about honoring the intent of Congress in authorizing the H-1B program, they should have no difficulty making these additional attestations..

We also believe that the Department could do more to reduce fraud and abuse in the program if it were authorized to conduct random audits of employers for whom labor condition applications and H-1B visa petitions are approved. The Department could then ensure that employers are living up to attestations that they have tried and been unable to recruit similarly skilled American workers, that they are paying actual or prevailing wages in localities where they plan to employ H-1B workers and that they have not displaced U.S. workers (including citizens, legal permanent residents and other foreign workers who have been legally admitted to work temporarily in the United States) in order to hire H-1B workers.

It is important to remember that the Department does not currently have the authority to conduct random audits. It only has very limited authority to initiate investigations without formal complaints from U.S. or H-1B workers – an authority that is scheduled to expire at the end of FY 2003, unless Congress takes affirmative action to extend it.

In conclusion, IEEE-USA also requests that a report entitled "The Outlook in 2003 for Information Technology Workers in the United States" that has just been released by the Washington-based Commission for Professionals in Science and Technology (CPST) be included in the hearings record.

This report, authored by widely respected engineering workforce researcher Richard Ellis and demographer Lindsay Lowell at Georgetown University's Center for the Study of International Migration and funded by the Alfred P. Sloan Foundation, contains comprehensive statistics and objective analyses of recent trends and issues affecting the size, composition and capabilities of the nation's information technology workforce.

In the face of continuing confusion and controversy surrounding supply and demand for core IT professionals, including computer scientists, systems analysts, software engineers and programmers, this report should be must reading for concerned Members of Congress as well as for workforce and immigration policy makers throughout the Federal Government.

Attach PDF containing the CPST Report

Q:cpc/2003legis/JWSresponses.100103

SUBMISSIONS FOR THE RECORD

NEWS CONTACTS:
Scot Montrey (202) 637-3099
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FOR IMMEDIATE RELEASE

ABLI RELEASES STATEMENT ON H1-B VISA HEARING

Boyd Notes Program Usage is Down, but Option Remains Important

Washington, D.C., September 16, 2003 – The American for Business Legal Immigration Coalition today commended Senator Hatch and the Senate Judiciary Committee for holding a hearing to examine the importance of the H1-B visa to the U.S. economy and to examine the facts about the program and its use.

ABLI Chair and NAM Vice President for Human Resources Policy Sandra Boyd pointed to the recently issued U.S. Department of Homeland Security report entitled "Characteristics of Specialty Occupation Workers (H1-B): Fiscal Year 2002" as evidence that employer use of the H1-B program has clearly tracked the dynamics of the economy.

"The H-1B program continues to be an important vehicle for companies to hire limited numbers of highly educated professionals for specialized jobs," Boyd said. "But there is no doubt that usage of the program is way down." In particular, she noted that:

- Overall usage has declined dramatically. Petitions for initial employment decreased by 48 percent in FY 2002.
- Usage of the H1-B program by industry tracks economic conditions. Petitions filed on behalf of high-tech industry segments declined 62 percent in FY 2002. The number of H1-B petitions approved for workers in computer-related occupations declined by 61 percent. While still the most numerous occupation group, total petitions approved for computer-related occupations dropped sharply from 58 percent in FY 2001 to 38 percent in FY2002.
- Demand was down in every occupational group with the exception of education, medicine and health and life sciences where demand increased in FY 2002 by 19, 14 and 7 percent respectively.
- The educational level was slightly higher in 2002 than 2001 with 47 percent of H1-B's having a Masters degree or above.
- The median annual compensation (which excludes non-cash compensation and benefits) for all H-1B workers in FY 2002 was $53,174. By comparison, according to BLS, the median wage for workers in all occupations in the U.S. in 2001 (the last year available) was $27,060.80.

Despite rhetoric to the contrary, the recent homeland security report demonstrates that there is a relationship between economic conditions and usage of the H1-B program—no matter what the numerical cap limit. In addition, while the program was widely viewed as a "high tech" program in the 1990's, recent data reflects that the actual usage (by occupation and industry) changes as economic conditions shift. Moreover, the report demonstrates that H1-B holders are well-educated and well-compensated.

While the report answers many questions, there are many missing data points. The report does not indicate how many employers use the program. In addition, the report does not indicate whether employers are recruiting H1-B visa holders in the U.S. or abroad and where H1-B visa holders attained their education. In many disciplines at U.S. universities, particularly in math, science and engineering and especially at the graduate level, there is a large contingency of foreign students who U.S. companies hire through routine recruiting.

"Foreign nationals have made enormous contributions to U.S. companies and our economy," Boyd said. "In order to continue our economic leadership we need to ensure that we have access to the talent we need to lead and compete. Educating and protecting American workers and welcoming foreign talent are not mutually exclusive; in fact, they are among our country's best traditions."

American Business for Legal Immigration is a coalition of associations and companies concerned about legal, employment-based immigration.

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American Council on Education

Office of the President

September 16, 2003

The Honorable Orrin G. Hatch
Chairman, Committee on the Judiciary
United States Senate
Washington, DC 20510

Dear Chairman Hatch:

We appreciate this opportunity to submit a statement for the record on the importance of H-1B visas for enabling international scholars and researchers to study and conduct research at American colleges and universities. The undersigned organizations represent over 2,000 colleges and universities from around the country, as well as 89 independent academic research institutes. We appreciate your support for the H-1B program, and we believe that it is working well for the academic community. We urge Congress to reaffirm its support for the H-1B program in its current form.

American academic institutions are among the best in the world, and attract students and faculty from around the world. Many of these visitors, especially postdoctoral fellows in advanced stages of scientific training, use H-1B visas. In addition, colleges, universities, and independent research institutions use H-1B visas for researchers and scholars, as well as professors, fellows, and other important positions with short-term appointments.

Our nation benefits when the academic community is able to recruit and hire promising international candidates. In admitting students and recruiting researchers and scholars from other countries, we seek the best and the brightest, and nationality alone should not lead us to reject the strongest prospects. Students, faculty, and researchers benefit from the opportunity to learn from and interact with the most talented individuals from around the world. Students receive the best education that the world can offer, while scholars can join a very productive community of colleagues. At the same time, business and industry can take advantage of the progress and discoveries that result from the work of H-1B workers in our labs and classrooms. Society as a whole benefits from having an infusion of talented and educated individuals spur new ideas and technologies that contribute to our nation's economy.

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Since 1998, Congress has made significant improvements to the H-1B visa program that have made it much more useful for the academic community. First, in the *American Competitiveness and Workforce Improvement Act of 1998*, Congress clarified the computation of "prevailing wages" in academia. The Act stipulates that the calculation of the "prevailing wage" level for an institution of higher education, a related or affiliated nonprofit entity, a nonprofit research organization, or a governmental research organization, should take into account only employees at similar institutions and organizations in the same area of employment. Prior to this amendment, as a result of the "Hathaway" decision by the Department of Labor, the prevailing wage was based on statistics from for-profit commercial firms that represent a distinct labor market. The now-repealed "Hathaway" policy had the effect of forcing colleges and universities and other non-profit academic institutions to pay artificially inflated non-academic wages and salaries.

Second, when a fee for H-1B employers for worker training and education programs was established in 1998, Congress saw fit to exempt the academic community from this fee. The community sought the exemption, noting that its core mission is one dedicated to training and education and that a fee imposed on academia would be redundant. Congress agreed with us and we remain very appreciative of its support.

Third, in the *American Competitiveness in the Twenty-first Century Act of 2000*, Congress exempted the academic community from the annual cap on the number of H-1B visas. Prior to these amendments, the annual supply of visas was exhausted as early as February in certain years, which significantly disrupted the admission of international researchers and scholars to the country. The academic community, particularly colleges and universities, employs a unique hiring cycle in which most hiring decisions are made during the late spring and early summer months, near the end of any given federal fiscal year. Moreover, H-1B visa usage in academia is not dependent on the state of the economy and does not fluctuate with the economic cycles. Researchers and scholars are needed on our campuses and in our labs regardless of general economic conditions.

After taking into consideration academia's unique hiring cycle, as well as the relatively consistent and modest number of H-1B visas used by the academic community, Congress made the decision to exempt academic institutions and organizations from the annual cap. We thank this Committee and Congress for this critical change.

We are aware that the annual cap for H-1B visas is scheduled to return to 65,000 in FY2004. Under current law, the academic community would continue to be exempt from the annual cap. Researchers and scholars admitted with H-1B visas are making significant contributions to higher education as well as society at large. They are also enriching scholarly endeavors in many other fields. We believe that the academic exemption from the annual H-1B cap is working well for the academic community and should remain in place.

Thank you for this opportunity to submit our comments on this very important issue. Should you or your staff have any questions, please do not hesitate to contact me or Laura Eugster Doyle of my staff at (202) 939-9355 or Sang Han of the National Association of State Universities and Land-Grant Colleges (NASULGC) at (202) 478-6048.

Thank you for your consideration of our views.

Sincerely,

David Ward
President

DW/cms

On behalf of:

American Association of State Colleges and Universities
American Council on Education
Association of American Universities
Association of Independent Research Institutes (AIRI)
College and University Professional Association for Human Resources
Council of Graduate Schools
NAFSA: Association of International Educators
National Association of Independent Colleges and Universities
National Association of State Universities and Land-Grant Colleges

FOR IMMEDIATE RELEASE

Contact: Thom Stohler (202) 682-4437
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News Alert

H-1B Visa Usage by the High-Tech Industry Drops Significantly in FY 2002

High-Tech demand for initial H-1B Visa applications drops from 105,692 visas in FY 2001 to 26,659 visas in FY 2002 – a 75% decline

Washington, DC – September 16, 2003: Usage of the H-1B Visa Program by high-tech companies declined significantly in FY 2002 according to the U.S. Department of Homeland Security Office of Immigration Security report *Characteristics of Specialty Occupation Workers (H-1B): Fiscal Year 2002.*

Commenting on the report, AeA President and CEO William T. Archey stated, "These numbers show that the decline in the use of H-1B visas paralleled the economic conditions of the high-tech sector. As the economy slowed down, the high-tech industry dramatically scaled back its use of the H-1B visa program. These numbers also show that broad cross sections of U.S. industries use the H-1B visa program.

"A significant statistic in the report was that 65% of initial H-1B visas issued went to individuals already in the U.S. on another visa. You can infer from the data that those individuals already in the U.S. receiving their initial H-1B visas were likely graduates from our colleges and universities. Given that 45% of all engineering, mathematics, and computer science Masters Degrees and almost half of the Doctoral Degrees awarded in these fields go to foreign nationals, it is no surprise that companies would use the H-1B visa program to hire these highly educated individuals."

Among the findings of the report:

The high-tech industry's usage of H-1B visas fell dramatically in FY 2002

- The high-tech industry went from using 65% of initial H-1B visas issued (counted against the H-1B visa cap) in FY 2001 (105,692), to less than 34% of initial H-1B visas counting against the cap (26,659) in FY 2002.

- The overall number of approved H-1B visa holders hired by the high-tech industry declined by 60% in FY 2002, from 180,286 to 70,067 visas used.
- The high-tech industry used 54% of all H-1B visas issued in FY 2001. In FY 2002, the high-tech industry used 37% of all H-1B visas issued.
- H-1B visa holders working in the general category of computer occupations fell from 58% to 38% of all approved H-1B visas.
- The number of H-1B visa holders working in the computer systems design and related services industry declined by 60%, from 141,277 to 50,776 visas.
- The number of initial (first-time approved) H-1B visas issued for computer occupations declined 81%, from 84,853 to 16,174.

H-1B Visa holders are highly educated workers

- Almost half (47%) of H-1B visa holders possess a Masters Degree or higher, compared to 9% of U.S. citizens
- 30% of H-1B visa holders possess a Masters Degree, compared with 6% of U.S. citizens
- 5.3% of H-1B visa holders possess a Doctoral Degree, compared with 1% of U.S. citizens

Other Findings

- Approximately 65% of the individuals issued their first H-1B visa were already in the U.S. on another non-immigration visa.
- The median salary for H-1B recipients in computer-related occupations was $60,000, compared to a median U.S. salary of $58,500 for computer system analysts and $52,800 for computer programmers.
- Other sectors of the economy, such as health care (physicians and surgeons) and education (K-12, colleges), showed an increase in the use of the H-1B visa program.

AeA has prepared a detailed analysis of the usage of the H-1B visa program by the high-tech industry, along with charts containing data on the H-1B visa program, both of which are attached to this release. If used, all should be sourced to AeA.

# # #

Advancing the business of technology, AeA is the nation's largest high-tech trade association. AeA represents more than 3,000 member companies that span the high-technology spectrum, from software, semiconductors and computers to Internet technology, advanced electronics and telecommunications systems and services. With 20 regional U.S. councils and offices in Brussels and Beijing, AeA offers a unique global policy grassroots capability and a wide portfolio of valuable business services and products for the high-tech industry. AeA has been the accepted voice of the U.S. technology community since 1943. For more information, please visit www.aeanet.org.

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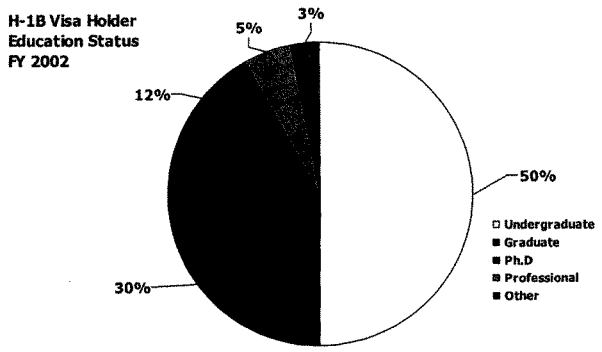
If data is used, it should be sourced to AeA.

High –Tech Industry Segments	All Approved H-1B Petitions		
	FY 2001[1]	FY 2002	% Decline
Computer systems design and related services	141,267	50,776	-64.1%
Telecommunications	9,638	4,357	-54.8%
Scientific research and development services	6,929	6,695	-3.4%
Semiconductor and other electronic component manufacturing	6,171	2,891	-53.2%
Communications Equipment Manufacturing	4,383	1,688	-61.5%
Information Services	3,027	1,676	-44.6%
Computer and peripheral equipment manufacturing	3,000	1,612	-46.3%
Computer and electronic product manufacturing	3,123	1,207	-61.4%
Software Publishers	2,748	1,165	-57.6%
Total of Approved High-Tech H-1B Visas	180,286	72,067	-60.0%
All Approved H-1B Visas	331,206	197,537	-40.4%
High-Tech Percentage of H-1B Visas	**54.4%**	**36.5%**	

[1] *FY 2001 H-1B visa numbers include carryover of petitions from previous fiscal years as well as petitions approved in FY 2001*



Source
Characteristics of Specialty Occupation Workers (H-1B Fiscal Year 2002)
U.S. Department of Homeland Security, Office of Immigration Statistics

Statement of
The Honorable Saxby Chambliss
United States Senator
Georgia

September 16, 2003

PRINTABLE VERSION

Senator Saxby Chambliss
Statement on H1B and L1 Visas
Judiciary Committee Hearing
September 16, 2003

Mr. Chairman, I appreciate you holding this hearing. Professional worker visas have been in the spotlight the last few months, and I'm glad we will have a chance to focus on the H1B visa today.

We are in very difficult economic times in this country, and as a result, we need to reflect on the right approach for both American businesses and American workers. Having the critical skills and top talent from around the world is essential for our economic progress, but at the same time, we must make sure our immigration policies don't have a backlash effect of displacing American workers.

The H1B program has been valuable to our country and particularly to the high-tech industry that needs programmers and technicians to operate their businesses successfully. With the lapsing of H1B authorization this year, including the cap reverting from 195,000 to 65,000, we will have an opportunity to re-evaluate our priorities and our policies for professional worker visas.

A related issue on professional worker visas is the so-called "L1 loophole." The L1 visa allows for intra-company transfers so that our multi-national companies can bring executives, managers, and employees with specialized knowledge into the U.S. However, some companies have abused this visa by bringing in workers with only generic knowledge and then outsourcing those workers to other companies. This kind of offsite placement can, in some cases, circumvent the protections of the H1B visa when the worker is essentially performing that function of that visa. As result, American workers have been displaced, and this must stop.

I will introduce legislation tomorrow that closes the L1 loophole without inadvertent and unnecessary negative effects on business. My legislation is targeted to the specific problem, and it will end the practice of companies who are displacing American workers.

In these economic times, we must ensure that U.S. workers are given every opportunity and protection that is in the law, as well as ensure that our businesses are remain competitive worldwide. My legislation will do both.

Silicon Ceiling 4

Silicon Ceiling 4

an annual report prepared by
blackpressonline.com for
The Coalition for Fair Employment in Silicon Valley
on
equal opportunity in
high technology

Principal researcher: John William Templeton

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High Tech Lags Every Other Non-extractive Industry in Employment of African-Americans

The companies that make and produce computer equipment and software in the United States of America practice extensive racial discrimination in the employment of African-Americans.

Statistics gathered by the U.S. Bureau of Labor Statistics confirm our findings in Northern California in the first Silicon Ceiling report -- that technology manufacturing and production companies routinely hire two-thirds fewer African-Americans than the general labor force -- itself *prima facie* discrimination under current legal doctrine of employment law.

However, we feel comfortable with the indictment of widespread discrimination not just because of the anecdotal evidence we've received from surveys and lawsuits, but because similar industries with requirements for scientific and technical skills actually have overrepresentations of African-Americans.

Even among high technology industries, those professions which tend to be hired by the technology departments of non-technology companies have almost twice as high a proportion of African-Americans working for them.

Unlike the days of World War II defense industries when plant managers had no compunctions about writing letters to civil rights groups that their company had "no jobs for Negroes," today's companies are more concerned with their public images.

Recruiter Mel Monroe, based in Chicago, had a major operating system software firm retain him for the purpose of recruiting minorities and women, specifically African-Americans.

"I submitted 100 persons, already screened because I've been in this business for more than 20 years, and they only hired three," said Monroe.

This is similar to our experience in Silicon Ceiling II, when we conducted a test of 100 jobs in Northern California that had been submitted for attestations for the H1-B non-immigrant visa and submitted resumes of qualified African-Americans. There was not a single response to any of those candidates.

In Silicon Ceiling III, we compared different high-tech clusters. Although there was growth in hiring of African-Americans in the southeastern region and mid-Atlantic states, the actual numbers of black engineers and computer scientists declined in the Pacific and Southwestern states, areas where companies routinely applied for permission to bring non-immigrant guest workers.

This most recent data confirms that these trends are nationwide. Most seriously, outsourcing, use of guest workers and contingent workers are flooding into the sectors of high technology where there has been a tradition of employment among African-Americans.

Why should anyone care about the demographics of the high technology work force so long as there is someone to do the work?

• Family and community stability. African-Americans began moving into high technology jobs in the 1960s as the industry emerged coincident with the passage of civil rights laws. The prevalence of the Department of Defense as the major customer of the early tech firms spread DOD's fair employment practices into those firms, and gave military veterans a channel for post-service jobs. The fact that almost 500,000 African-Americans worked in high tech jobs was a key factor in the growth of the black middle class over the past 30 years -- allowing home ownership, development of businesses and expanded educational opportunities.

• Land use. African-American neighborhoods are concentrated in the most desirable metropolitan locations due to the proximity to transportation and communications links, as Dr. Michael Porter has pointed out in the *Competitive Advantage of the Inner City*. In the Bay Area high tech hub, extensive traffic jams, pollution and toxic waste have been the result of race-based decisions to exclude areas of Oakland, Richmond and San Francisco with high black populations from the development of high technology businesses, therefore making it difficult for their residents to have access to jobs. To bring in outsiders to that same metropolitan area without providing jobs for the current residents has escalated housing prices and dramatically increased the gap between the wealthiest and poorest residents, destabilizing governmental revenues.

• Lost economic growth. If the proportion of African-American information technology firms, now 2,400 and the fastest growing segment of black-owned businesses, were the same proportion as African-Americans in the uniformed armed services, there would be an additional 30,000 companies and perhaps another 150,000 employees. Areas like Huntsville, AL, instead of Mumbai, India, could reap the rewards of high technology jobs.

• Lost consumer buying power. African-American purchases of technology grew five-fold from 1997-2002, the fastest of any ethnic group in the country. A strategy to revive the prospects of the high technology industry, which lost more shareholder value during that period than three years of the federal budget, would logically take measures to increase the interest and intensity of that sentiment. Industries such as fashion recognize the extended influence of the sentiments of African-American consumers to drive the behavior of other groups worldwide.

• Lower quality products. The Oakland-based group Children Now reports that African-Americans are rarely seen in video games, unless as victims of violence or sports figures. The programmer who created the language that drives most interactive games is a Harlem native African-American who would prefer that his techniques be used for purposes such as enhancing instructional software. However, there are few voices like his among the powers that make such decisions or among the workforce in the software development industry. The society is poorer for that lack of diversity in viewpoints.

Fighting corruption and illegal behavior. The labor standards of the high technology manufacturers violate many laws, yet the executives seek preferential treatment

through high levels of lobbying and campaign contributions to elected officials. We are beginning to see the erosion of standards spread to other industries. As well, the companies with the worst equal opportunity records appear to have little respect for any laws. Abuses of executive compensation, financial reporting and anti-trust laws are a daily occurrence.

This should not have been a surprise to policy makers. Ranking Democrat Rep. John Conyers, D-MI told the House Judiciary Committee's Immigration and Claims Subcommittee on May 9, 2000:

> I am extremely concerned that we not fail to significantly invest in U.S. workers to both re-train current workers and educate future workers. It appears that U.S. companies may not be aggressively seeking to hire and train minorities, women, and displaced workers who currently are under represented in the hi-tech industry. For example, according to the Coalition for Fair Employment in Silicon Valley, employers have not made significant efforts to recruit at events hosted by organizations such as the National Council of Black Engineers.

In April 1999, I noted in an opinion column for the *San Francisco Chronicle:*

> In the late 1980s, Silicon Valley led the nation in employing African Americans as top executives.
>
> By the '90s, the story had changed. Last year, a group of African American professional organizations in the Bay Area formed the Coalition for Fair Employment in Silicon Valley and began following up on The Chronicle's findings. By law, most employers must keep records on fair employment practices and many must report to the Equal Employment Opportunities Commission. The coalition determined that only 175 out of 1,454 Northern California high-technology firms required to file had actually done so.
>
> Silicon Valley executives explained the disparities in hiring and inattention to fil ing as: 1) blacks aren't trained for high technology; 2) there is lots of ``diversity" in Silicon Valley, and 3) the whole furor is being instigated by ``outsiders."
>
> These arguments are patently disingenuous. There are more than 130,000 African American scientists and engineers in the country, but only 2 percent work at the companies we surveyed. Based on the number of black engineers residing here, the number should have been 4 percent.

Not only has high-tech had its head in the sand, but some of its leading propo-

nents have taken an activist position in opposition to civil rights measures -- even calling for the abolition of the Civil Rights Act of 1964. The leading contributor for the campaign that brought Proposition 209 to California voters in 1996 was semiconductor company Cypress Semiconductor.

Through mergers and industry-wide alliances, it appears that the difference between the hiring practices of Silicon Valley and other high tech employers around the country has shrunken.

With the help of Bureau of Labor Statistics statistician Stephanie Boraas, we were able to view unpublished BLS data from the first quarter of 2003, the most up-to-date national figures available on this topic.

Deplorable black employment for high technology nationally

An analysis of nine high technology fields reveals that in the aggregate, they employ 211,000 black workers out of 3.8 million, 5.5 percent compared to the general African-American labor force percentage of 10.6 percent (see chart 1). (Source: Employed and experienced unemployed persons by detailed industry, sex, race and Hispanic or Latino ethnicity, Quarter 1 2003; Current Population Survey)

Compared to 12 major industrial categories as described by BLS, the high tech industries ranked tenth, only ahead of mining and agriculture, in the proportion of African-American employees. (see chart 2)

Counterintuitive to the industry's standard claim that African-Americans are not qualified for the high tech jobs is the fact that similar information-based, technology-driven industries such as radio/television/cable (15.4 percent) and telecommunications (13.9 percent) have some of the highest proportions of black employees of any industries, exceeding the normal black

Table 1.
Detailed technology industries and black employment ratio in comparison to other information industries

Industry	Percentage	Number
Computer systems design	7	115,000
Data processing	6.3	9,000
Management/science/tech consulting	5.6	58,000
Communications,Audio, Video Mgf	5.1	11,000
Computer and peripheral mgf.	3.7	16,000
Internet Service providers	2.4	1,000
Navigation,measuring mgf	0.9	2,000
Software publishing	-	1,000
Internet publishing	-	-
Total high technology	5.5	211,000
Compared to:		
Radio/TV/Cable	15.4	66,000
Other telecommunications	15.2	41,000
Wired telecommunications	13.7	167,000
Total labor force	10.6	14,515,000

(Source: Table 2. Employed and experienced unemployed persons by detailed industry, sex, race and Hispanic origin, Quarter 1 2003 Current Population Survey) Bureau of Labor Statistics

employee ratio by almost 50 percent.

The difference is that those industries have a tradition, although diminishing, of effective equal opportunity enforcement from their federal and state regulators, compared to the fact that 80 percent of high tech firms do not even submit the mandatory equal opportunity forms required of all companies with more than 100 employees nationally under the Civil Rights Act of 1964.

Even among the high tech fields, the highest proportions of black employees are in the fields of computer systems design, where 115,000 black workers are seven percent of 1.6 million workers nationally; and management/science/technology consulting, where the 58,000 black employees are 5.6 percent of 1.03 million.

The trend has been that African-American tech workers are more welcomed in the technology department of non-technology companies and government agencies than at the technology companies themselves. However, a growing trend towards outsourcing in such industries as finance, insurance, health care and government is a direct threat to black employment in high technology.

Table 2. Major industries and percentage of black employment in 1st quarter, 2003

Total civilian labor force	10.6
Public Administration	16
Education and health services	13.6
Leisure and hospitality	10.8
Information	10.8
Other services	10.4
Financial activities	9.8
Manufacturing	9.6
Professional and business services	9.5
Wholesale and retail trade	8.5
Construction	5.8
High Tech	5.5
Mining	3.4
Agriculture	2.3

(Source: Table 2. Employed and experienced unemployed persons by detailed industry, sex, race and Hispanic origin, Quarter 1 2003 Current Population Survey) Bureau of Labor Statistics

What happens to a dream deferred?

In Jones' case, his stomach had to be removed early this year from the stress. Yet he is an example of the kind of talent and innovation that is rife among the more than 500,000 African-Americans in information technology.

The gasoline in the cars most Americans drive each day is significantly cheaper because of the extraordinary genius of Dr. Philip Emeagwali, a survivor of the bloody Biafran civil war in Nigeria. But after learning math from his father who made him solve 100 math problems each night. Emeagwali emigrated to the United States as a student in electrical engineering. During his doctoral studies, he sought to solve on the great math problems.

However, discrimination kept him from receiving coveted time on the supercomputers operated by the National Science Foundation. It took him a while to realize that whenever he wanted to reserve time, it would be booked.

So Emeagwali devised a way to use 55,000 different computers across the world to make his calculations by breaking up the equation into that many different parts and then reassembling the results. He calls it his "chickens instead of oxen" approach.

As a result, he achieved the fastest computation of all time in 1989 and became the only individual winner of the Gordon Bell Prize of the Institute of Electrical and Electronic Engineers. Although he has become known as "the Bill Gates of Africa" and is an inspiration to an entire continent, the venture capital boom of the 1990s bypassed a man whom many call the father of the Internet.

His techniques for breaking up data into packets that could flow through multiple channels and then reassemble are a critical part of what made the Internet accessible to the entire world. Emeagwali is the epitome of reaching back. Each day, he converses online with some of the 154,000 school children who visit his site emeagwali.com each week to provide them with lessons on science, particularly the African contributions to it.

The problem that Emeagwali solved was how to simulate in 3-dimensions the natural processes involved underground in likely spots for oil. A more advanced simulation allows a much higher rate of successful drilling and finds hydrocarbons not previously detected.

Another pioneer is John Henry Thompson, a Harlem native who started taking computers apart when in high school, before attending MIT. Thompson is the author of Lingo, the primary programming language that makes web sites, video games and television programs interactive. Popular programs like Shockwave, Director and Flash are based on his language.

Like Emeagwali, Thompson is very oriented towards children and wants African-American young people to begin making games instead of playing them.

Despite the presence of talent like Emeagwali and Thompson, only five percent of the African-American technologists -- most of whom have more than 20 years of experience in the field -- have been able to form their own companies. The 2,400 black-owned information technology companies are fast becoming the stars of African-American enterprise -- topping the Black Enterprise 100 list for several years.

They are not getting money handed to them in giant clumps of venture capital. They're doing it the old fashioned way -- they're earning it.

We've already read about Dr. Ernest Simo of CDMAOnline, Roy Clay of Rod-L Electronics and Eric Adolphe of Optimus Corp., plus Ron Jones.

But who would think that black women in Huntsville, AL would be technology superstars? They are so successful that the national procurement fair for federal government contractors will be held in Huntsville this year.

For the two of the past three years, the winner of the mentor-protege program of the U.S. Department of Defense has been an African-American woman-owned business from Huntsville. More than 50 percent of African-American information technology workers live in the Southeastern states.

For Lisa Williams, president of 3D Research Corp., growing her engineering services firm from one employee to 55 in less than five years was no easy task. But the accomplishment was made less difficult with the help of CSC through its award-winning mentor-protégé program.

Last March, the team of CSC and 3D Research received the prestigious Nunn-Perry Award, which recognizes the outstanding performance of mentor-protégé teams on U.S. Department of Defense contracts. It was the third consecutive year CSC has received the honor, making it the only IT services company to achieve that distinction. 3D Research, based in Huntsville, Ala., specializes in technical services related to the test and evaluation of missile systems.

In addition to being recognized in 2002 with 3D Research, CSC also won the award in 2001 with Huntsville-based Computer Systems Technology Inc. and teamed with Raytheon to win the award with Data Voice Inc. of Palm Beach, Fla. in 2000.

Computer Systems Technology Inc., led by Bobby Bradley, has really blossomed into the second largest African-American-owned employer in the information technology industry with 1,000 employees

Neither Bradley or Williams would fit the profile of whom the largest companies in the technology industry consider their prime candidates for entrepreneurial success.

Rodney Hunt was headed for a career as the next Bob Gibson for the St. Louis Cardinals, before his mother walked onto the field during the state championship game in Maryland carrying his acceptance letter to Cornell engineering school. His father had been a player in the Negro leagues, but the choice of whether he would pitch or go the Cornell had been made for him. Hunt later pitched in the minor leagues after graduation, but threw out his arm. His mother's response was, "I told you so."

By 1992, after stints with McKinsey, Hunt and a partner started RS Information Systems in McLean, VA. By 2002, the firm employed 1,400 workers, 60 percent of them women, minorities or disabled. It is the largest employer among African-American information technology companies, according to a study by souloftechnology.com, sponsor of the 50 Most Important African-Americans in Technology awards.

RS Information Systems is the prime contractor, not a subcontractor, for an eight-year contract with the U.S. Air Force to provide data by satellite from Global Positioning Satellites. The company also supplies Doppler weather radar data from National Oceanographic and Atmospheric Administration satellites to television stations around the country.

Can black IT entrepreneurs compete in the global market?

Two publicly-traded firms are answering yes, in spite of the technology industry downturn. Ault Inc. in Minneapolis, MN is the largest independent manufacturer of external power conversion products based in North America. It is a leading supplier to original equipment manufacturers of communications convergence infrastructure including DSL modems, wireless and wireline telecommunications infrastructure, medical equipment and networking hardware.

TeleCommunications Systems Inc. of Annapolis, MD, makes software that allows cellular phone providers to provide e-commerce and other services over cell phones.

In North Hollywood, CA, Dr. Kenneth Ewebueze runs SageMetrics Inc., which provides software and systems to clients as prestigious as Forbes magazine to mine data. Ewebueze was selected to serve on the President's Information Technology Advisory Committee.

In Philadelphia, PRWT Services Inc., under Willie Johnson, has built a $65 million business supplying information technology-based services to local governments such as running parking meters and traffic lights.

In rural North Carolina, Samuel Clemens' Premiere Circuit Assembly makes circuit boards and other components for electronic equipment.

But what happens when these world-class firms attempt to market themselves to the largest technology companies.

Ralph Jackson, an Oakland, CA-based entrepreneur, sued Sun Microsystems Inc. on behalf of his company Thinket Ink Information Resources, which got a master service agreement with the company, but was not allowed to bid on work at the workstation manufacturer.

"Prior to my contract ending, Sun secretly hired my non-African-American employees to continue working on my project," contended Jackson in a lawsuit filed in Alameda County Superior Court.

In an e-mail obtained through discovery, Mel Friedman, a senior vice president of vendor management at Sun, told Ann Wondolowski, a vice president, about Thinket Ink, "they are a very small company and don't really have the capabilities...they need to get on the Master Service Agreement..They have not pushed hard enough. They basically are used to getting a lot of handholding from other companies they work with, as they are a minority owned business and Sun does not operate that way."

However, Wondolowski tells another Sun procurement manager, "..we are jerking them around with having to complete the Master Services Agreement...This is inexcusable. This company provides a critical service to Sun, providing the support for the Distribution Control System and other key applications...This is almost 60 percent of our business worldwide..the Master Services Agreement is not a requirement."

Surely enough, three years later, the first sentence of Sun Microsystems supplier diver-

sity page talks about restricted products and services which are only purchased on a company wide basis under master service agreements. Firms can't compete for those products and services and company managers are not allowed to purchase those items from other vendors.

A review of the six largest companies in the technology market: Dell, HP, Intel, Microsoft, Sun and Apple indicates that they have not yet learned the supplier diversity lessons of most other large American corporations, even though 25 percent of technology purchases in the U.S. are by the federal government.

Only Dell reports its actual purchasing for diverse suppliers -- $278 million in fiscal year 2003.

Microsoft began its supplier diversity program in 2002 with announcements at two conferences and the hiring of AT&T's former supplier diversity director. The first large contract announced was a joint venture with Thompson Hospitality to supply food service to 35, 000 Microsoft employees.

HP and Intel list fewer than a half dozen diversity events that their staffs attend each year.

Alas, Apple's supplier diversity web site has not been updated since April 19, 1999. During that same time, the company was using the images of Muhammad Ali and Martin Luther King Jr. in its advertisements.

With the exception of Dell, any but the most determined seeker would be hard pressed to find any evidence that supplier diversity is a concern of these technology firms.

Although Southern California-based Computer Sciences Corp. has won the mentor-protege award for three years running, with Alabama-based companies, none of these six companies is using the program to support black-owned businesses.

Not Surprising

Although African-American information technology firms are the fastest growing industrial segment in the black business community, with reseller firms such as WorldWide Technologies of St. Louis and Gale Sayers Organization of Illinois approaching $1 billion in sales, the Silicon Valley segment of the industry might be expected to have a stereotypical view of black-owned technology firms based on their approach to the employment of African-Americans.

The largest contributor to Proposition 209, the measure which has so devastated black-owned companies prospects was the semiconductor firm of Cypress Semiconductor, headed by T.J. Rogers, which gave $100,000 according to California Secretary of State records.

The Coalition for Fair Employment in Silicon Valley followed up on a survey by the San Francisco Chronicle in its 1998 study by Julia Angwin "The Digital Divide," which indicated only 4 percent black employment at 20 large Silicon Valley companies.

In Silicon Ceiling: Solutions for Closing the Digital Divide, the Coalition found that only 253 of 1,454 eligible companies had even filed the EEO-1 form required of

all firms nationally with more than 100 employees, or holding $50,000 in federal contracts.

Among those 253, presumably the better performers, there were only 5,301 black employees worldwide of 142,231 total employees for a percentage of 3.72 percent.

Of 25,101 officials and managers, there were 594 blacks for a percentage of 2.37 percent.

Among 61,238 professionals, there were 1,688 blacks--a percentage of 2.76 percent.

Rogers and other technology executives continue to justify the low numbers by saying there is a shortage of qualified black technologists, a statement blindly accepted by many of their political allies who approved measures to increase the importation of foreign guest workers into the United States -- now numbering close to 1 million.

The argument has more holes in it than Swiss cheese.

Only 40 percent of current technology employees have actual engineering or science degrees, a measure of how quickly technological progress has spread throughout the entire population. By way of perspective, the pervasive World Wide Web was only created in 1996, a mere seven years ago. Someone who started a degree in computer science on that very day would just be completing a masters this year.

However, African-Americans have a substantial and long-standing significant presence in information technology dating from the 1950s and 1960s. Early mainframes were very labor intensive, requiring large numbers of "data processors" to punch cards and create programs. The advent of widespread computer use coincided with the door opening of the Civil Rights Act of 1964.

For instance, Roy Clay was told in 1951 that McDonnell Aircraft "had no jobs for professional Negroes." But in 1954, he was hired to be the programmer of its first computer. "Nobody knew how to program it," Clay recalls. He became one of the pioneers of the computer language Fortran, begun in 1956, the year after the Brown vs. Board of Education decision. By 1958, he was programming the fastest computer in the world, a supercomputer at the Lawrence Radiation Laboratory in Livermore, CA. By 1961, he ran COBOL programs for Control Data and in 1965, he was hired as manager of computer research and development for Hewlett-Packard.

The national security implications of data processing helped open the doors for African-Americans in those early days. Clay's neighbor in Palo Alto was Dr. Warren Henry, a physicist who worked for Lockheed Missiles on the properties of magnetism. Henry's research paved the way for such devices as the compact disc.

By the 1960s, there were growing numbers of African-American military officers, beneficiaries of President Harry S. Truman's order to desegregate the military in 1948. Air Force Capt. Frank Greene, a graduate of Howard University who later received his masters and doctorate degrees from Purdue University, left the service to become a top circuit designer for Fairchild Semiconductor in the mid-1960s. He and Clay are both members of the Silicon Valley Engineering Hall of Fame. Greene went on to create two publicly-traded companies and now runs New Vista Capital, a venture capital fund specializing in minority-owned technology startups. He was also assistant chair of electrical engineering in the fabled School of Engineering at Stanford University.

Henry, who continued to teach physics at Howard University into his 80s, was honored

by the Lawrence Berkeley National Laboratories by technical colleagues from around the world in 1999 including Dr. Glenn Seaborg, former Atomic Energy Commission chair.

Dr. Cecile Barker, a scientist who led the National Aeronautics and Space Administration's Orbiting Astronomical Observatory project in the 1960s, left to form OAO Corp., which became a major contractor to NASA and other federal agencies. Barker actively incubated other businesses such as OAO Technologies and played a great role in developing the concentration of black-owned IT firms in the Washington suburbs.

Dr. Mark Hannah, a second-generation doctoral holder in electrical engineering whose uncle was a programmer with Clay at Lawrence Radiation Laboratory in the 1950s, parlayed his doctoral thesis on the "Geometry Engine" along with his doctoral advisor to create Silicon Graphics Inc., which produced the first 3-D computer graphics.

Before Bill Gates, Steve Jobs and Steve Wozniak, Michael Dell, Larry Ellison or Andy Grove, these scientific pioneers were making critical discoveries and implementing them into products and services that have transformed the world economy.

Their relative invisibility mirrors that of the thousands of African-American data processors, systems analysts, engineers and programmers who learned their skills, sometimes through technical or engineering education, but most often through on-the-job experience like Clay or military or government service like Greene and Barker.

Silicon Valley has pointed to the relatively small number of African-American engineers, about 85,000, according to the Bureau of Labor Statistics, as evidence that there are no qualified applicants for jobs.

However, in 2000, the Coalition for Fair Employment in Silicon Valley tested that hypothesis in its second annual study -- Silicon Ceiling II: How High Tech Firms Break Civil Rights Laws. It obtained a file from the U.S. Department of Labor of the 72,000 Labor Condition Applications for H1-B visas from the western United States. From that list, 100 Northern California firms were chosen at random. The jobs, which according to the applications no qualified Americans were available for, were advertised in a blind study to bulletin boards of African-American and older American engineers. At least several resumes were received for each job. Then the resumes were submitted to the applicant companies, which were seeking permission to bring workers from overseas to fill the jobs. Not a single company responded to the resumes, which had been coded so that responses would come to the survey investigator.

Comparing the number of 1.688 black professionals hired by the 253 Silicon Valley companies, not all of whom would be engineers, to even the 85,000 black engineers nationally, produces a 2 percent ratio.

The fact that there are not enough trained black technologists is irrelevant to Silicon Valley's lack of black employees, because they only hire one out of 50 of those who are available.

The Bureau of Labor Statistics indicated that in the following year, the Pacific states including Washington, Oregon and California, that the number of black engineers actually dropped 20 percent from 1999 to 2000.

Comparing the 5,301 black employees at those companies to the 500,000 African-Americans who work in information technology, according to the Bureau of Labor Statistics, produces a 1 percent ratio for Silicon Valley.

The shortage of black employees, particularly at executive levels, has a direct impact on business opportunities.

Many of the thousands of companies created in the technology boom of the 1990s were founded by disgruntled or unfulfilled employees of major technology firms who were able to benefit from the research or innovation they first experienced on the job. Even more amicable departures create networks of supporters within the former company who can provide access to contracting, venture capital and strategic alliances. In addition, the experience of managing product lines and developing specific niches is a valuable asset for any new entrepreneur.

As a result, allthough Silicon Valley is fabled as the hub of technology, there are very few large black-owned technology firms in Northern California. The largest black-owned IT firms, by employment and sales, are found in locations like Missouri, Illinois, Maryland, Alabama and Virginia.

Michael Fields, former president of Oracle USA, perhaps has had the largest such firm in the the valley when he received $25 million in venture capital, the largest such award to any company at the time, to create Open Vision.

Fields, a military veteran, spent 30 years in sales and marketing of technology on his way to the top sales post at Oracle. With that track record, he was able to demonstrate his ability to manage and achieve profitability. Fields later sold Open Vision for a hefty return to his investors after taking the company public.

Having experienced the complete American business dream, Fields realized how unique an experience it had been. He became a partner with Greene in New Vista Capital and used his own money to buy and renovate a building in downtown Oakland which he calls the Oakland High Tech Accelerator.

Within the building are complete high-speed networks and the business support infrastructure to support five companies, which Fields also supplies with venture capital and management assistance. He calls it an accelerator instead of an incubator because the companies are supposed to be propelled out into free-standing large employers. One accelerator firm created an agreement with the community college in Oakland to hire 300 graduates as entry level employees.

Despite Fields extraordinary civic responsibility to place the job magnet in the heart of Oakland, where blacks are a plurality of the population, other Silicon Valley companies have conspicuously avoided it and other heavily-black jurisdictions in the Bay Area. The city of Oakland, under Mayor Jerry Brown and City Manager Robert Bobb, has assiduously courted high tech, inviting leaders for several conferences and an East Bay tech network. But in the past 10 years, no major Silicon Valley CEO has publicly set foot in Oakland, less than 60 miles away from San Jose.

The job-hungry city offers a business tax incentive, enhanced enterprise community tax

credits, enterprise zone tax credits, industrial development bonds, manufacturer's investment credit, a one-stop capital shop, the Oakland Business Development Corp., other city-funded incubators, a community development bank and the highly-touted Eastmont Computing Center which trains hundreds of residents from elementary to senior citizens in high tech skills. But Silicon Valley companies have ignored the possibility that having facilities closer to the bulk of the black population might provide increased employment opportunities even though Fields has proven it can be done with his own money. The city's demographics belie its image, crafted through news stories about rising numbers of violent homicides. In fact, 64 percent of its residents have attended college. In the largely black neighborhoods of West Oakland and International Boulevard, at least 48 percent have attended college.

Frank Tucker, CEO of Tucker Technology Inc. has built a growing firm as a supplier to telecommunications and cable companies in Oakland. "Oakland has proven a fertile ground for my high tech company from start-up to inclusion in the top 10 of Inc. magazine's Inner City 100 list of fastest growing companies in the U.S. for four consecutive years. Oakland's highly skilled labor force is a key factor in my company's success."

Ironically, Oakland's major economic magnet, the Port of Oakland, is the entryway for billions of dollars of electronic products made in the Far East, a cruel hoax for the thousands of potential job seekers in the East Bay who could supply high tech's labor needs, and then go on to launch their own companies.

However, it is not too late for African-American enterprises to avoid the trap of becoming marginalized as subcontractor as has happened in other industries during the past 30 years.

AN INTERNAL MARKET

The genius of Jones' strategy for SongPro is that it combined his technical acumen, the appeal of entertainment and the growing interest in technology among urban markets.

A 1998 article in Technology Marketing "Industry Ignores $447 Billion Market," pointed out that until the aforementioned Apple ad featuring civil rights leader Martin Luther King Jr. and boxer Muhammad Ali and a campaign by Hewlett-Packard featuring Negro Leagues star Buck O'Neal and an eight year old, that an African-American had not appeared in consumer ads for computers in national campaigns.

The article quoted a study by Packaged Facts that indicated that African-American consumers had become critical market drivers to influence market share for products ranging from automobiles to fashion

None of the companies has done more than add black faces to their television commercials, even though internal studies done for Apple showed that black single mothers, the archetype of the stereotype against blacks in technology, indexed highest for

a propensity to buy computers for their children.

Beginning in 1995, as the article noted, African-Americans began spending more for computers than televisions. A later study indicated a five-fold growth in African-American internet usage, the highest rate of growth for any ethnic group, by the year 2000.

That means the market for African-American technology--driven in part by the fact that black IT workers are the most numerous professional category of workers (100,000 more than teachers) meaning that one in 12 black families has a tech worker in it--is being neglected by the companies that are making unearned profits from them.

This has been a common story in American economic history, particularly over the past 50 years. A company makes excess profits from black consumers who buy their products despite not being marketed to.

In this case, black consumers are buying products from companies that are at times openly hostile and disdainful of them.

That creates a market opportunity to African-American-owned companies such as WorldSpace to make distinctive products that meet the specific needs of these markets domestically and internationally. WorldSpace addressed the lack of infrastructure in Africa, Asia and the Caribbean by launching three satellites to deliver direct broadcast satellite radio. It then designed a wind-up radio receiver which addressed the shortage of available or reliable electricity. These satellites will be able to deliver 500 channels of clear digital sound.

Atlanta-based SoftBlue has acquired several products and designed some of its own to address the findings of a study by Children Now that 99 percent of video game figures are white males. Blacks are generally only represented in sports video games. SoftBlue has been making educational games geared to black children.

The city of Baltimore has particularly encouraged technology development, partially because of the presence of the Career Communications Group (CCG) which holds the annual Black Engineer of the Year awards. Investment banker Nathan Chapman, already mentioned in chapter 3, has sought to build a technology cluster of businesses as an adjunct to his national brokerage firm by acquiring the assets of NetNoir.

Thousands of "glass-ceilnged" black technical workers are now available to use their expertise to address the daily living issues of their own community. The BLS reported that unemployment of experienced African-Americans in the computer professions topped 20 percent beginning in 2002 on through into 2003. That unemployment rate is twice as high as the unemployment rate for the general black population.

Many of those workers will only gain re-employment in those fields by creating their own companies.

In addition to the U.S. domestic market, the effort to create communications infrastructure in Africa and the Caribbean opens additional opportunities. Caricom offers specific incentives for companies creating information technology jobs and Nigeria has developed an information technology strategy. South Africa's divestiture of state-owned companies like Telkom opens additional markets.

African-American businesses must follow the lead of Frederick Green's Ault, Dr. Maurice Tose's TeleCommunications Systems Inc., Noah Samora's WorldSpace, Roy

Clay's Rod-L Electronics, Dr. Ernest Simo's CDMAOnline and Cada Vez, Michael Fields' High Tech Accelerator and Ron Jones' SongPro to create the same kind of markets for themselves that they've created for other businesses.

Technology firms are likely to be the companies that can pay the highest wages, that can create the largest number of jobs, spur the largest number of supporting businesses, underwrite technological improvements at nonprofits and schools and promote role models for young people to aspire to.

Entire industries can be created by a single policy decision such as a frequency allocation or standard.

It is incumbent that African-American owned businesses learn from the lessons of the past and avoid an individualistic approach to development of the technology economy within their communities domestically and worldwide.

POLICY RECOMMENDATIONS

• Leadership should organize a membership organization comprised of the 2,400 African-American information technology companies that would serve as an adjunct to the national chamber and through local and regional subgroups to local chambers as well

-this Technology Cluster would lobby government agencies for policies to promote expanded contracts and job growth in the Information Technology sector

--it would develop an information technology strategy for the African-American population with specific goals and timetables for numbers of persons trained in high tech skills, usage of online and other services,

-it would also attract financing for promising ventures or technologies and link larger firms for strategic alliances

--this group would take the lead in promoting e-commerce and other technologies to others black-owned businesses and non-profit groups

--this group would create a model for information technology training programs and job placement in the African-American community that can be relied upon by localities and institutions.

• That a specific investigation be launched into supplier diversity and equal employment opportunity at high technology companies receiving federal contracts using employment and business encounter testing techniques to ascertain the extent and impact of discriminatory barriers by the General Accounting Office

• That individual cities create duplicates of Oakland's High Tech Accelerator to promote high tech entrepreneurship and job growth.

• That Congress follow the recommendations of the American Society of Engineering Societies and the International Electrical and Electronic Engineers-USA and return the limit for H1-B non-immigrant visas to 65,000.

• rather than depressing state revenues with a continued moratorium on Internet taxation, collect the fees as a federal excise tax and distribute it to states and school districts for higher education in mathematics, science and

technology and improved access to technology at the k-12 level. "The same leaders who complain about the state of education do not want to pay to improve it," said Templeton.

• change the H1-B and L-1 programs to require that visa applicants hold a Ph.D degree and have published peer reviewed research; that visas be limited to one year after which the person would have to apply for a green card; that fees be raised to $10,000 per application to fund education and retraining programs and that L-1 applicants have worked for the company seeking a transfer for more than five years before being brought to the U.S.

• now that the Supreme Court has validated the use of diversity in public programs, remove moratoriums placed by the Bush administration on small disadvantaged businesses and focus on the job-creation potential in high unemployment areas for contract awards, particularly in homeland security and defense contracts where use of American citizens enhances national security.

• Congress should block attempts to outsource massive proportions of government agencies to private businesses because of the potential impact on increasing black unemployment. Already, African-Americans are 20 percent of all unemployed, although only less than 11 percent of all workers.

The Outlook in 2003 for Information Technology Workers in the USA

ABSTRACT

The purpose of the IT Workforce Data Project is to identify and disseminate trustworthy statistics on information technology workers in the United States. A earlier series of reports, released in 1999, provided an overview of the IT workforce, reviewed the supply and utilization of people with appropriate academic training, examined employment of foreign-origin workers in U.S. IT jobs, and assessed the demand for talent. Now, four years later, there have been major changes in the industry:

- Employment has been declining since reaching peak levels in 2000; unemployment began to rise in 1997 and is now at unprecedented levels.
- Increased enrollments in computer science during the late 1990s have fueled a rise in the numbers of new graduates, but the demand for these new graduates is now weak.
- During the past decade, the share of foreign-born persons in the IT workforce has doubled. Use of L-1 visas for foreign employees of multinational businesses has tripled. Outsourcing IT work to foreign locations has quadrupled.

Views differ on the outlook for U.S. IT workers. The Bureau of Labor Statistics and the RAND Corporation expect strong growth in the industry, but this does not necessarily mean that all of the jobs that may be generated will go to Americans. People in the technical professions are wondering if the United States can be a cost-effective source of labor in a global employment market.

NOTE: this report updates statistics provided in the original IT Workforce Data Project series. For more information about rationales for choices of sources of data, readers may wish to consult those documents, available at www.cpst.org.

The IT Workforce Data Project

Queries about this project are welcome. The principal investigators are Richard Ellis of Ellis Research Services, Carlisle, Pennsylvania (717-218-9818 or raellis@earthlink.net) and Lindsay Lowell of the Institute for the Study of International Migration (ISIM), Georgetown University (202-687-2602 or lowellbl@georgetown.edu).

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Acknowledgments

Our thanks and appreciation to Tom Nardone and his staff of employment data specialists at the Bureau of Labor Statistics, for detailed occupational statistics for 1983-2002; to Aurora D'Amico of the National Center for Education Statistics, for help with data on degrees in 1998-1999; and to John Sondheimer of the U.S. Department of Commerce's Bureau of Economic Analysis, for data on imports of services.

August 28, 2003

Information technology ("IT") involves the production and application of computer hardware and software. The impacts of IT have been ubiquitous and profound, and their ends are not in sight. Already we have witnessed the automation of countless activities, personal computers everywhere, the use of microprocessors to improve the reliability and flexibility of machines like appliances and automobiles, world-wide commerce and communication over the internet, and more.

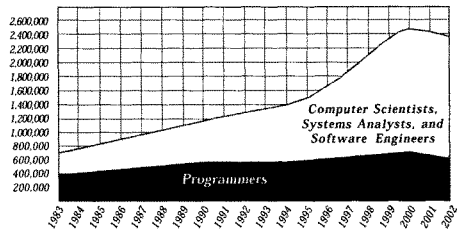
Conditions in U.S. information technology have changed a great deal since the final years of the 20th Century. An economic boom in the internet and telecommunication industries has ended. Demand for information technology specialists has swung 180 degrees and now is relatively weak. Despite these changes in economic conditions, some observers continue to maintain that the nation is not doing enough to provide an adequate IT workforce; policymakers continue to debate the merits of supplementing the supply of IT people with foreign high tech specialists brought into the country on temporary work visas; outsourcing of IT work to locations in other countries is rising rapidly; and American technical professionals are voicing increased concerns about threats to their careers.

This report provides new data and commentary on these developments, including information on:

- *Recession effects:* what has happened to IT employment since 1999?
- *Changes in the pipeline of students:* what are the recent trends for enrollments and degrees in IT fields?
- *Trends in immigration:* in a post-9/11 world, has the use of foreign technical specialists with H-1B or L-1 visas changed?
- *Trends in outsourcing:* what do new data tell us about movements of technical work to locations outside the USA?
- *Changes in demand:* what are the implications of these trends for long-range career prospects in information technology?

Figure 1

Employment in Core IT Professions, 1983-2002

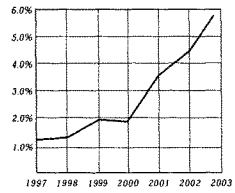


Source: annual estimates from the U.S. Bureau of Labor Statistics, based on data from the Current Population Surveys

Figure 2

Recent Unemployment Rates for Core IT Professionals

(computer scientists, systems analysts, software engineers, and programmers; annual data for 1997-2002; preliminary 2003 trends from data for first two quarters)



Source: Bureau of Labor Statistics Current Population Surveys (unpublished data)

Trends in Employment and Unemployment

In the last twenty years, the number of U.S. jobs in core IT occupations (measured by data on computer scientists, systems analysts, software engineers, and programmers) have more than tripled, from 719,000 in 1983 to 2,498,000 at the sector's peak in 2000 (see Figure 1 above). No other broad area of work in the United States has experienced such growth (and if anything, the growth has been understated; see the sidebar, below).

About 150,000 of these positions were lost in 2001 and 2002, almost two-thirds of them in programming. The occupational title of "programmer" has become ambiguous. It takes in both relatively low level coders whose work may easily be shipped overseas, and relatively high level developers of new systems, who have been hard hit by the collapse of high tech investment markets. Such conditions help explain why programming has been especially vulnerable to losses of jobs during the last two years.

As noted in our earlier series of reports, unemployment rates in the core IT professions began to rise well before the peak years of the technology bubble, going

A Large Group Now Looks Even Larger: Changes in Occupational Classification Systems, Put Into Effect in 2003, Have Increased Estimates of the Number of People in Core IT Jobs

Data are also available at this writing on employment in IT during the first two quarters of 2003, but comparisons with earlier figures are difficult. Major changes are being made in federal systems for the treatment of occupational data. Older taxonomies of job titles are being replaced with a new Standard Occupational Classification ("SOC") system. A virtue of the new approach is that it provides much better treatment of IT specialties. The old system grouped software engineers with "computer scientists and systems analysts," while hardware engineers were treated as part of electrical engineering. Programmers were treated as technicians, not as professionals. In contrast, the new SOC provides specific professional job titles for all these specialties, as well as for database, network and systems administrators; network and systems data analysts; other computer support specialists; computer hardware engineers (along with other engineering specialties); and computer and information systems managers (along with other management specialty occupations). When this new job classification system was applied to the Bureau of Labor Statistics' employment data for 2003, it seems to have led to large increases in counts of people in IT occupations. If only those specialties that closely match the job titles used in the past are counted, the numbers of core IT workers jump from 2,347,000 in 2002 to 2,939,000 in the first quarter of 2003 and 2,832,000 in the second quarter of this year. If other newly defined IT specialties such as the hardware engineers and computer and information system managers are also counted, the numbers rise again, to 3,343,000 and 3,260,000 for the two quarters, respectively. At a time when the U.S. is experiencing "the most protracted job-market turndown since the Great Depression" (Jon E. Hilsenrath, "This Recovery Feels Like Recession: Economy Expands, Payrolls Shrink," *Wall Street Journal*, May 29, 2003, page 1), these increases cannot have come from added employment. Instead, they reflect changes in the ways that data are collected and processed.

Further studies of the new occupational codes are underway at the Bureau, and will provide more detailed information about their effects on enumerations of the nation's IT workforce. In the meantime, the new estimates of IT employment in 2003 are consistent with results for the same population from a separate BLS survey, discussed in the final section of this report, of business establishments. This result lends confidence that the new numbers are trustworthy. If so, the older data may have underestimated growth in the IT professions during the latter part of the 1990s.

Figure 3

Increases in the Number of Persons with IT College Degrees, 1999-2001

Group	*Number*	*Source Data*
A. Total stock of persons with IT degrees in 1998	*861,800*	*From the IT Workforce Data Project, Report II, "The Production of U.S. Degrees in Information Technology Disciplines." Includes persons with either a computer science or a computer engineering undergraduate degree, or a non-IT undergraduate degree plus an IT graduate degree. Does not include substantial numbers of persons with degrees in business information systems, or whose undergraduate training included completion of a minor field of study in computer science.*
B. Subsequent new IT degree awards:		*For awards in computer and information science and in computer engineering in 1998-1999 and 1999-2000, see the DIGEST OF EDUCATION STATISTICS 2001 (Washington, D.C.: National Center for Education Statistics, 2002), Tables 259 and 258. For the same data for 2000-2001, see the 2002 edition of the DIGEST (released June 2003), Table 255. In all cases, counts of people earning IT degrees were derived by adding one-third of the number of new master's degrees to the total number of new bachelor's awards. For further details and commentary on estimation procedures, see Report II in this series, cited above.*
1998-1999	*37,500*	
1999-2000	*45,900*	
2000-2001	*52,900*	
C. Total stock of persons with IT degrees in 2001	*998,100*	

from 1.2 to 1.9 percent between 1997 and 1999. Levels of joblessness in IT hovered at just under two percent during the following year, and then shot up to 3.6 percent in 2001, 4.3 percent in 2002, and an average of 5.9 percent for the first two quarters of 2003 (see Figure 2).

The overall size of the sector remains impressive, although employment in IT has certainly declined and is probably continuing to do so. Job markets are reported to be especially poor in locations that were centers for dot-com and other speculative ventures. Other kinds of IT jobs entail more prosaic applications of IT in more traditional industries, and those kinds of positions have been less vulnerable.

The Educational Pipeline

The second report in the original IT Workforce Data Project series, "The Production of U.S. Degrees in Information Technology Disciplines," included points about IT training that are worth repeating here. A majority of those employed in IT jobs were trained for other professions, typically engineering or other scientific fields. In addition, the possession of appropriate academic credentials does not guarantee that a person will be working in an appropriate job. In 1999, more than a third of those with degrees in core IT disciplines were not working in core IT positions. To be sure, some of those people may have been working in closely related jobs (for example, computer or information systems managers).

The Computing Research Association (CRA) tracks enrollment and degree trends in computer science and computer engineering. The association is mainly interested in doctoral degrees, but it also tracks trends at the bachelor's and master's degree levels at the schools it surveys.

The high tech boom of the late 1990s encouraged young people to pursue studies in computer science and related disciplines. In the CRA report on trends for the 1995-1996 academic year, its author exclaimed:

> To put it succinctly: enrollments are up... Most dramatically, the number of new bachelor's students is up from 10,099 to 14,239, a 40% increase on top of last year's 5% rise![1]

This explosion in undergraduate computer science enrollments continued in 1996-1997, and more modest levels of growth were recorded after that point, peaking in 1999-2000. In the meantime, the students in the pipeline have begun to graduate, leading to record numbers of new degrees in IT disciplines through the 2001-2002 academic year, according to CRA. More comprehensive data from the National Center for Education Statistics confirm that a steep rise in the production of newly trained IT specialists has lasted through at least 2000-2001 (see Figure 3, above). Unfortunately, this rise in the supply of qualified people occurs at a time when demand for their skills has diminished. Noting that the number of new undergraduate students in computer science programs dropped slightly in the fall of 2002, the most recent CRA report says "Perhaps the decline in the technology industry is making computer science and engineering less alluring..."[2]

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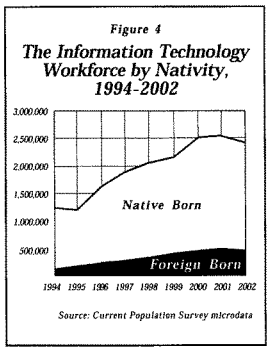
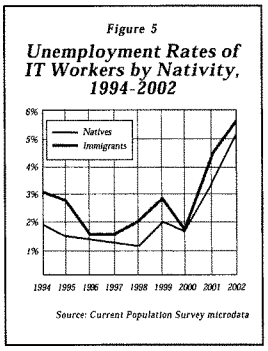
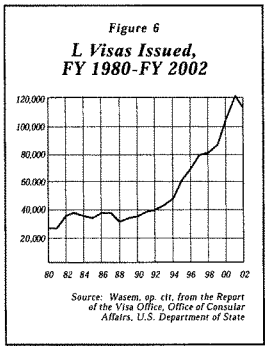
[1] Gregory R. Andrews, "1996 CRA Taulbee Survey: Grad, Undergrad Student Enrollments Up," *Computing Research News* (Computing Research Association, March, 1997), pp. 1-5.

[2] Moshe Y. Vardi *et al.*, "2001-2002 Taulbee Survey: Survey Results Show Better Balance in Supply and Demand," *Computing Research News* (Computing Research Association, March, 2003), pp. 6-13.







Trends in Immigration

Foreign-born persons account for a growing share of all core IT workers in the U.S., doubling from about a tenth of this labor force in 1994 to over a fifth of it in 2001. The number of immigrants in IT did not drop as much between 2001 and 2002 as did the number of natives, so the immigrant share of IT jobs continued to rise during the recent recession (see Figure 4).

Microdata from Current Population Surveys, combined in a year-long dataset known as the Merged Outgoing Rotation Group (MORG), show how immigration contributes to changes in the ethnic makeup of the IT workforce. As recently as 1996, 74.3 percent of those in core IT occupations were native-born whites. By 2002, this share had declined to 66.9 percent. Asians now account for 15.1 percent of all IT workers, and 85.3 percent of those Asians are immigrants. Nearly a third of all these Asian IT immigrants are from India. Another 5.1 percent of the IT workforce is Latino; of those, 31.4 percent are immigrants. White immigrants account for 5.4 percent of the IT labor force. The remaining 7.5 percent of the core IT workforce consists of native-born blacks and a small number of people with "other" ethnic backgrounds.

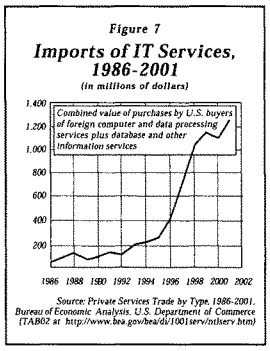
The same data show that immigrants in the IT workforce are both younger and better educated than their native counterparts. In 2002, 53.3 percent of the immigrants with core IT jobs were under the age of 35, compared to just 41.0 percent of the natives. 41.1 percent of the immigrants had graduate degrees, compared to 16.2 percent of the natives. Despite their relative youth and advanced educations, immigrants tend to be more likely than natives to be unemployed (see Figure 5).

Other characteristics of immigrant IT workers, noted in our earlier reports, continue to apply, notably their geographic concentration in a few states. In 2002, 11.4 percent of all native IT workers were located in California; nearly a third (31.1 percent) of the foreign-born IT specialists were in this state. Similarly, New Jersey accounted for only 2.7 percent of the native IT workers, but 10 percent of the foreign-born workers.

The increase between 1994 and 2002 in foreign participation in U.S. IT labor markets was facilitated by legislation that expanded the annual number of allowable admissions of persons with H-1B temporary worker's visas. These higher ceilings on admissions are due to expire this Fall; if no further actions are taken, the caps will revert to lower levels, from 195,000 in Fiscal Years (FY) 2001, 2002 and 2003, to 65,000 in FY 2004. Many persons with these visas have been reaching allowable six-year limits on their stays. Renewals of these temporary visas for workers who are already here are allowed if an application is made within three years, and the numbers of these renewals have increased. Other persons who have worked in the U.S. under H-1B visa arrangements may extend their stays by finding new employers.

Other kinds of visas for temporary workers from abroad are contributing to increased reliance on foreign-origin IT workers. NAFTA and other trade agreements authorize TN visas that can be used by IT professionals. L-1 visas are intended to help multinational businesses by supporting transfers of executives and managers to locations in the U.S. for up to seven years, and transfers of "specialized knowledge" workers for up to five years. A recent Congressional Research Service report[3] acknowledges that firms may be using these visas to transfer

[3] Ruth Ellen Wasem, "Immigration Policy for Intra-company Transfers (L Visas): Issues and Legislation," Congressional Research Service, June 12, 2003.



rank-and-file employees. Some companies are reported to use employees with L-1 visas to staff service contracts with other companies. Other firms may be turning from H-1B to L-1 visas because the latter have no caps and no requirement to match local prevailing wages. The number of L visas has tripled in the last decade (see Figure 6). Indian citizens are the largest users by far, accounting for a quarter of all these visas in FY 2002. Legislation addressing these issues has been introduced in the current session of the Congress.

Offshore Outsourcing

In addition to competition from foreign temporary workers, IT professionals in the United States are threatened by a growing tendency for firms to ship technical work overseas. A measure of the trend is provided by data from the U.S. Department of Commerce on imports of IT services. These transactions have grown from under $300 million in 1995 to over $1.2 billion in 2001 (see Figure 7). A report in *EE Times*[4] cites a McKinsey & Co. estimate that "projected software and service exports to the U.S. in 2003-04 are expected to come in at $8.5 billion" from just India alone.

Outsourcing white-collar jobs has become a general business trend, and includes transfers of work in law, architecture, financial services and insurance, management, and many other sectors as well as information technology. A widely cited Forrester Research report released in November 2002 predicted that 3.3 million white-collar jobs, worth $136 billion in U.S. wages, will be shifted out of the nation by the end of 2015. This forecast includes 473,000 IT positions, over and above those already lost to earlier movements of this kind. More recent estimates dwarf the Forrester numbers. Gartner, Inc., a Connecticut consulting firm that specializes in advice on outsourcing business arrangements, claimed on July 15, 2003 that 10 percent of all U.S. professional jobs in IT services firms would be transferred overseas by the end of 2004, along with five percent of the IT positions in other types of organizations.[5] According to Gartner, offshore outsourcing has become the fastest growing IT industry segment. Certainly many IT employers are engaging in such shifts. In addition to earlier announcements from such companies as Apple and Motorola, new reports describe plans for major transfers of IT activities at EDS, IBM, Hewlett Packard, Microsoft, Oracle, Sun Microsystems, and many others.

Demand and the Outlook for Careers in IT

For more than half a century, the Bureau of Labor Statistics' *Occupational Outlook Handbook* has been the nation's basic guide for career planning. Forecasts are essential for this project. BLS is careful to state assumptions that underlie its predictions, to make their limitations clear, and to revisit previous projections to see where they may have erred.[6] The current (2002-2003) edition of the *Handbook* relies on work done before the terrorist attacks of September 11, 2001 and the dot-com/telecommunication bust that became evident late that year,[7] and so it may reflect an era of optimism about prospects for careers in the IT professions. Data from the Bureau's ongoing survey of business establishments (which, as noted above, used the new SOC occupational titles) yield an estimated 3,276,000 IT jobs for the baseline year of 2000. Projected 2010 employment for the same set of occupations is 5,432,000, a figure that if reached will preserve IT's status as both the fastest growing employment sector in the nation and also one of the largest occupational groups.

BLS's outlook is "benign" in the sense that it assumes a steady continuation of long-term trends. A different "benign" view of IT is offered by a recent report from the RAND Corporation.[8] More akin to a futurist scenario than a statistical forecast, RAND's study predicts continued strong growth for information technology and continued North American domination of the field. The authors state that "A period of IT consolidation, in response to the 'dot-com crash' and the implosion of the telecom industry, is both likely and healthy. This consolidation should

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[4] K. C. Kirshnadas, "India's tech industry defends H-1B, outsource roles," *EE Times*, July 10, 2003.

[5] *Economic Times of India* (U.S. edition), "Outsourcing to cut 10% IT jobs in US: Gartner," July 16, 2003.

[6] For example, see "Assumptions and Methods Used in Preparing Employment Projections," at http://stats.bls.gov/oco/oco2006.htm.

[7] "The BLS projections were completed prior to the tragic events of September 11. While there have been numerous immediate economic impacts, the nature and severity of longer-term impacts remains unclear." See http://stats.bls.gov/emp/emppak1.htm.

[8] Richard O. Hundley *et al.*, *The Global Course of the Information Revolution: Recurring Themes and Regional Variations* (Santa Monica: RAND, 2003).

lead to a stronger foundation for substantial and sustainable IT growth in the coming decades."

RAND's report is about the IT *industry;* it pays little or no heed to the IT *workforce.* Indeed, IT could be dominated by North American multinational businesses without becoming particularly dependent on North American technical talent.

A different view of the outlook for IT workers may be inferred from a more general assessment of prospects for the entire scientific and engineering ("S&E") workforce, currently being circulated as a draft by the National Science Board (NSB).[9] Excerpts from the introduction convey the message of this report:

> Science and technology have been and will continue to be engines of US economic growth and national security... Current trends of supply and demand for S&E skills in the workforce indicate problems that may seriously threaten our long-term prosperity, national security, and quality of life... The Federal Government and its agencies must step forward to ensure the adequacy of the US science and engineering workforce. All stakeholders must mobilize and initiate efforts that increase the number of US citizens pursuing science and engineering studies and careers.

Recommendations call for substantial increases in support for scholarships, university research, graduate stipends, etc. Similar arguments have been advanced in the past. A major problem is that many serious observers of U.S. scientific and engineering labor markets simply do not accept the premises on which the NSB's draft report depends. It is not at all certain that the supply of high tech talent in the U.S. is inadequate, nor is it clear that there will actually be future demand for a much larger S&E workforce in the United States. However, the NSB may be right to raise questions about what happens to U.S. technical prowess and national security if the U.S. depends on foreign talent, and to remind us that if Americans cannot compete with world-class technical people, they are not likely to be able to obtain work in science, engineering, or fields like information technology that are blends of both.

IT professionals have different concerns about the prospects for careers in the field. Where some academic and industry spokesmen see shortages of talent and a lack of adequate capacity, IT workers tend to see surpluses of qualified people and an inability to make good use of the existing pool of labor. A recent series on "The Disposable IT Worker" which appeared on the iSeries Network's web site is representative of the views of IT professionals.[10] It looks at rises in the numbers of foreign temporary workers with L-1 visas and at trends in outsourcing, and concludes that the boom days of the late 1990s are not likely to return.

Paul Kostek, a past president of IEEE-USA (the American branch of the International Institute of Electrical and Electronics Engineers) and the 2003 chair of the American Association of Engineering Societies, speaks for many technical professionals in the United States when he writes:

> *Business Week* magazine recently reported that for $650 a month you can employ an aerospace engineer in Russia with a master's degree in math or aeronautics. His U.S. counterpart makes about $6,000 a month. So how do U.S. engineers compete in this new global marketplace? ...[They] won't be able to compete on price by accepting salaries that are below U.S. poverty levels... I have to ask myself if an overseas competitor in Belarus, Beijing or Bangalore possesses the same skills that I do, and if proximity isn't important, and if they'll work for $800 a month, then why hire me at $8,000 a month? It's a question that is increasingly hard to answer. For the next generation considering a career in engineering, it will be even harder.[11]

Kostek's question is indeed hard to answer. It raises all kinds of additional issues, matters which go far beyond the capacities of a report like this one. For example, are the costs of outsourced jobs balanced by trade benefits for high tech exports and low cost goods for American consumers? Can the U.S. continue to be a prime market for the rest of the world if it is a stronghold for neither manufacturing nor technical services? What are the long-run implications of these trends for American standards of living?

Still other questions arise. If global labor markets are posing problems for American workers, just how rapidly will these problems continue to grow, and how far will their ultimate impact reach? Disinterested, authoritative information about such matters has not been easy to find, but on August 5, 2003, the U.S. General Accounting Office announced that it would study some of these questions. That initiative is a welcome beginning.

The job market for domestic IT professionals has weakened, but that market is still very large. For the near run, normal turnover alone will generate opportunities for people who are determined to work in the field. The long-run outlook is more problematic. The United States does not lack, either now or in the foreseeable future, sufficient numbers of capable people who would like to work in IT. But those people may not be willing to conclude that long-run demands for their services will be good enough to support IT as a sensible career choice.

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[9] *Draft report, Task Force on National Workforce Policies for Science and Engineering*, NSB, May 2003. Available at http://www.nsf.gov/nsb/documents/2003/nsb0369/sb0369_drft.doc.

[10] Mary Lou Roberts, "The Disposable IT Worker" (three-part series; iSeries Network, May-June 2003); archived at http://www.iseriesnetwork.com.

[11] Paul Kostek, "Competing with the $800 a Month (or less) Engineer" (Washington: IEEE-USA, June 14, 2003).

Testimony of

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On behalf of the

U.S. Chamber of Commerce

Before the

Senate Committee on the Judiciary

"Examining the Importance of the H-1 Visa to the American Economy"

September 16, 2003

2:30 PM

Mr. Chairman and members of the Committee, good afternoon. Thank you for the opportunity to testify today before the Committee on the subject of the importance of the H-1B visa to the American economy. I am Elizabeth Dickson, a Human Resource Specialist and a member of the Global Mobility Services Team for Ingersoll-Rand Company. I am also Chair of the U.S. Chamber of Commerce Subcommittee on Immigration and am pleased to testify on the Chamber's behalf.

The U.S. Chamber of Commerce is the world's largest business federation, representing more than three million businesses and organizations of every size, sector and region. The Chamber represents a wide spectrum of industry sectors from manufacturing, to retailing, services, construction, wholesaling and finance in a variety of locations around the country. The Chamber also represents over 850 trade associations and professional societies. The Chamber has membership in all 50 states and 95 American Chambers of Commerce abroad. The U.S. Chamber has a long history of involvement in immigration issues, and specifically with regard to

the H-1B visa. Chamber staff and Chamber members have testified on immigration issues no less than eight times in the last five years; four times specifically on H-1B and highly skilled workers. I myself previously testified before this Committee in 2001 for the Chamber.

My testimony today reflects my experience with Ingersoll-Rand's ability to find vitally needed workers. I hope that I will be able to share with you some direct observations from the perspective of a multinational company trying to comply with more and more complex immigration laws and policies.

Ingersoll-Rand is a Fortune 200 company with about 50,000 direct employees worldwide, including 30,000 domestic employees. The company is a major diversified industrial equipment and components manufacturer serving the global growth markets of Climate Control, Industrial Productivity, Infrastructure Development and Security and Safety. Its international headquarters is based in Woodcliff Lake, New Jersey and in 2002, the company had annual sales in excess of $9 billion. Ingersoll-Rand Company operates manufacturing plants in over 21 countries around the world and markets its products and services, along with its subsidiaries, through a broad network of distributors, dealers and independent sales and service/repair organizations.

As you have heard from the distinguished panelists today, immigration is a complex issue. Following the attacks of September 11, 2001, the U.S. Government's focus on national security priorities and the creation of three separate immigration agencies under the new Department of Homeland Security presents new challenges for U.S. companies that employ foreign nationals in the United States. This necessary focus on national security combined with our company's ever present need to utilize the shrinking H-1B visa program to hire the best engineering and other professional talent directly impacts the company's productivity and global competitiveness.

The H-1B visa is available to those individuals whose services are sought by a U.S. employer in a "specialty occupation." The position to which the individual is being sent must be professional. Professional positions include engineers, computer systems analysts, financial analysts, attorneys, accountants, and many others. To qualify for H-1B temporary worker status, an alien must have at least a bachelor's level degree—or the foreign equivalent—in a field which

is regarded by the government as a profession. The employer must first attest to the Department of Labor that the alien will receive a salary commensurate with the prevailing wage for U.S. workers, in the same job category. The employer must also make certain attestations to show that U.S. workers are in no way disadvantaged by the hiring of the foreign national. The employer must also attest that it offers its U.S. and H-1B workers the same benefits. The attestations must be posted internally along with the offered salary and the prevailing wage.

An employer is also limited by an annual cap on the total number of new H-1B workers. There are 195,000 H-1B visas allocated for fiscal year 2003. This will revert to a cap of 65,000 H-1B visas beginning October 1, 2003. It is unclear what, if any rationale, was used in developing this cap. What is clear is that the cap, when reached before the beginning of the new Fiscal Year, causes great economic hardship to U.S. employers. In Fiscal Years 1997 and 1998, we reached the cap. Many petitions that had been filed were put on hold until the beginning of the next Fiscal Year. This put candidates in limbo and required employers to remove valuable employees from payrolls. It also delayed the hiring of needed professionals. We cannot afford to let arbitrary caps dictate U.S. business immigration policy.

Immigration policies and procedures must be rationally based and include consideration for economic security and competitiveness. We must be able to tap the talent we need both domestically and abroad. Companies like Ingersoll-Rand live this reality on a daily basis, and when Human Resource Managers cannot fill key positions with workers from the domestic workforce, they are forced to look outside the U.S. to hire or outsource the work.

Ingersoll-Rand prides itself on being a U.S. based company that strives to keep the majority of its manufacturing operations within the U.S. borders. We have manufacturing plants in 24 states and 120 facilities located throughout the United States. Over 45-50% of our profits are tied to export sales. Unfortunately, market forces and the lack of highly qualified U.S. workers have created a problem of identifying and retaining U.S. workers. Indeed, recruiting engineers within the U.S. often results in foreign born applicants. U.S. colleges and universities are graduating many foreign born engineers and scientists; in some disciplines, more than half of the graduates are foreign born. Let me give you some examples of the difficulties we face:

1. Our Air Solutions Group has employed a foreign national as its Original Equipment Manufacturer ("OEM") Technical Sales Manager. We advertised extensively for this position and found no U.S. worker. The position entails managing new business development efforts for rotary products in the geographical regions of the Americas and the Asian Served Area, which includes Asia, North America, Central America and Canada. The minimum requirements for this position are a Bachelor's Degree in Mechanical Engineering and two years of sales management experience with OEM products including rotary screws and reciprocating compressors. In 1995 Air Solutions acquired a UK business, Simplair Ltd., a developer of compressed air piping system, as a component of its industrial air compressor products. The former owner of this business was hired and brought to the United States in H-1B status as Worldwide Product Manager – Simplair, with responsibility to explore, identify, develop and manage new and existing business opportunities for the Simplair product line. His technical product knowledge of the Simplair compressed air piping system is unequaled and he has been directly involved in the sales and marketing of air compressor products for over 20 years.

2. As the company continues to expand its quality initiatives, Metrologists have become a professional engineering occupation in very short supply. There are only about five universities in the U.S. with Masters programs specializing in metrology and almost all the students enrolled in such programs are foreign nationals. Human Resource Managers advise me that they simply cannot find Americans to fill such positions. Our Waterject Cutting Systems business in Baxter Springs, Kansas and Farmington Hills, Michigan spent 20 months searching extensively using advertisements and professional recruiters to find an engineer experienced in industrial robotics and pressurized product development before finally hiring a qualified individual from Canada. Metallurgical engineers have been an identified shortage occupation for years in the United States and are key contributors to machinery development projects for our mining and drilling products. Thermo King conducted a 13-month search for a qualified plastics engineer for their product development team and hired another Canadian national.

3. Ingersoll-Rand's Specialty Equipment Business Unit, part of the Infrastructure Sector, manufactures a broad line of drilling equipment and accessories with industrial, mining, and water well drilling applications. This Unit has annual bookings of $38 million, with an operating budget of $1.5 million. We employ a Vice President and General Manager of this business unit on an H-1B visa. He has 18 direct reports and oversees operations of one U.S. and three international locations. He provides leadership to develop and implement the strategic goals and objectives as well as tactical deployment of resources to achieve sales goals, increase market share, effect operational improvements, and reach financial goals for the business unit. This position requires a Bachelor's Degree in Finance or Business Administration plus ten years experience in business management with demonstrated financial growth. We also require five years of information technology experience in a manufacturing environment as the current competitive environment requires Specialty Equipment to dramatically reduce the lead-times in the manufacturing of its products as well as to collaborate with other IR brands to increase market share. We could not find a U.S. candidate that met our requirements and turned to a qualified Canadian applicant who entered the U.S. on an H-1B visa. This individual has a base annual salary of $124,000.

4. We are always looking for innovative Engineers. Recently we recruited for a Product Development Engineer for our Dresser-Rand Advanced Controls systems. We needed someone to work with minimal direct supervision and be responsible for development and implementation of modeling, advanced control and optimization software products. The minimum requirements for this position are a Ph.D. Degree in Chemical Engineering plus three years of experience in generating advanced control solutions for process related industries. This experience must also include at least two years experience in integrating advanced controls for turbomachinery into process applications. We found no U.S. workers that met our requirements. However, we did fill the position with a U.S. educated foreign national.

5. We have also recently recruited for Product Design Engineers. In one position the engineer is responsible for the management and coordination of specific products

including oversight of engineering personnel assigned to product development; designing and developing new components, systems and products such as air systems, hydraulic systems, coolers and drill feed systems. The minimum requirements for this position are a Master of Science Degree in Mechanical Engineering. The Product Design Engineer must also possess three years of experience in the position or in a related heavy equipment design/engineer position, specifically large rotary drills. We have been unsuccessful in locating a U.S. worker, but did identify another U.S. educated foreign worker.

6. We recently hired an H-1B as the Director of Manufacturing Operations for our Thermo King de Puerto Rico manufacturing plants. The position requires the applicant to direct the total operations of the Thermo King manufacturing facilities in Puerto Rico to achieve plant and division manufacturing objectives for growth, profitability, quality and reliability, on-time performance, and customer satisfaction. This position reports directly to the Climate Control Director, Americas Operations, and commands a salary of $140,000 plus discretionary bonus. We require experience as a manufacturing manager with demonstrated ability to improve production processes, contain costs, and provide the leadership necessary to maximize as well as a Bachelor of Science degree in Electrical Engineering. Bilingual and cross-cultural skills were also requirements for this position.

7. We also recently filled the position of Worldwide Engineering Manager – Drilling Solutions with an H-1B employee. This is a key managerial position responsible to provide the coordination of all Product Engineering functions for the Drilling Solutions business on a worldwide basis at Drilling Solutions manufacturing facilities in the United States, India, France, China, Japan and the United Kingdom. The position will be responsible for a superior level of machine design, manifested in superior marketability, quality, reliability, customer acceptance, and government regulation compliance. Requirements for the position include a Bachelor's degree in Engineering with ten years professional work experience. We recruited extensively and hired an Australian candidate to fill the position.

Training and Recruiting U.S. Workers

Through the media and other sources the business community hears the mantra—train U.S. workers; invest in the domestic workforce. We at Ingersoll-Rand and my fellow members at the U.S. Chamber do just this and more. We have training centers at almost all our manufacturing facilities—designed to improve technical manufacturing skills and meet our employees' personal needs; we collaborate with community colleges and vocational technical schools—providing certificate and college degree programs and sponsor distance learning on-site; we have a tuition reimbursement program for employees pursuing bachelor's and advanced degrees; we provide many corporate on-site training programs; and we encourage cultural exchanges from our facilities abroad in order to enhance diversity and awareness.

Let me give you a few examples:

1. Ingersoll-Rand University was established in 2001 as a dedicated training facility on the Industrial Solutions campus in Davidson, North Carolina that provides a broad spectrum of professional training including a School of Business Management, a Leadership and Team Development School, and also provides Competitive Advantage (marketing) and Operational Excellence training. Esteemed business school faculty, leading consultants and our top executives teach these programs. Additionally, IR University OnLine is the e-Learning delivery mechanism for IR University, providing the most effective way to deliver education with maximum accessibility to Ingersoll Rand's geographically dispersed employees. All IR locations offer full tuition reimbursement programs to support employees studying independently at local colleges and universities.

2. Dresser-Rand Company in Olean, New York has entered into partnership with the local vocational school to hold on-site classes to train (and hopefully recruit) high school students to assume skilled positions at their manufacturing facility upon graduation. The Construction and Mining Group has it's own welders' school in Pennsylvania and the Air Compressor Group in Davidson, North Carolina provides co-operative training in conjunction with local high schools to develop interest in technical careers. The Air Compressor Group has a dedicated training center at the Davidson, North Carolina campus as well.

3. At corporate headquarters in New Jersey, the company sponsors a college degree program through Thomas Edison University in conjunction with our neighbor, BMW, and employees from both locations take weekly college-credit courses led by a professor on-site.

4. There are two-year corporate professional management programs for recruited university graduates in the fields of engineering, manufacturing, finance, human resources, and sourcing designed 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, Ingersoll-Rand remains a major contributor to U.S. colleges and universities as well as national organizations such as the International Road Education Foundation, the National Hispanic Scholarship Fund, and the National Urban League, to name a few.

We continue to conduct extensive recruitment in the U.S. market for our unfilled positions. We hold and participate in job fairs. We advertise in print publications including professional journals, newspapers, and newsletters. We advertise electronically on the internet and on our own website. We offer to pay for relocation and offer highly competitive wage and benefit packages for all employees.

Employers currently need and will continue to need H-1B workers. Through the U.S. Chamber of Commerce and in coalition with businesses and trade associations across the spectrum, we seek a reasonable, market driven H-1B policy that recognizes market realities. Earlier this month the Department of Homeland Security issued a Report entitled "Characteristics of Specialty Occupation Workers (H-1B): Fiscal Year 2002." This report, which is mandated by Congress, tracks the H-1B usage over the past 3 fiscal years. It is interesting to note there has been a 37% decrease in the number of petitions filed between Fiscal Years 2001 and 2002. Additionally, less than 40% of the total number of approved petitions

were issued for computer-related occupations. Approximately 33% were issued for engineering, education and occupations in medicine and health. Based upon general economic trends, the numbers do in fact mirror the needs of the market. Inability to meet market demands and company goals will drive projects overseas, resulting in a loss of U.S. jobs and a decrease in U.S. spin-off revenue.

Cost of Employing H-1B Worker

Some argue that H-1B workers displace American workers and lower American workers' wages and working conditions in certain job sectors. It is hard to displace U.S. workers when you don't have any U.S. workers to choose from. If anything, there are spinoff jobs and benefits. Wage levels are competitive, and by law must be the higher of the prevailing wage or actual wage paid to similarly situated workers.

Employers are required to give H-1B workers the same benefits as U.S. workers. We provide health plans, stock option plans, and pay into the social security system for all our foreign nationals. Indeed, hiring a foreign worker is much more costly and difficult for Ingersoll-Rand than hiring a U.S. based worker.

I do not want to understate the amount of work hiring an H-1B worker requires for the company. As the head of all of our global mobility work, I have the unique position to be able to compare the requirements for U.S. immigration law with those of other countries. I can say that the United States has one of the more complicated visa processes of any of the countries where Ingersoll-Rand operates. For each H-1B worker the company decides to sponsor, our Human Resources personnel spend dozens of hours, compiling the necessary documentation for corporate headquarters to submit, and overseeing the process. We take extraordinary care to be sure that before we "check the box" on any form, we have verified with all relevant internal records, and, when necessary, with outside counsel, that we are fully in compliance. In addition to the H-1B paperwork, application fees and legal costs for the initial petition, H-1B workers require ongoing support to facilitate visa revalidation and international travel.

When an H-1B worker is transferred from a country abroad, the cost of an international relocation and dual taxation obligations at home and host countries can easily double or triple

that worker's annual salary. For example, a recent cost projection for a two-year H-1B temporary assignment for an engineer from Switzerland to the United States based on an annual salary of $55,000 will ultimately cost the company about $300,000 due to relocation and storage expenses, international salary administration, benefits payments, dual taxation obligations, and temporary housing and automobile allowances provided. The one year cost for a new hire recruited from Germany and relocated to the U.S. at an annual salary of $120,000 will total $235,000 for first year of transfer. The company would not invest this kind of money in these individuals unless there was a sound business need for their skills and services in the United States.

America cannot maintain its global advantage without an adequate supply of top-quality engineers, including immigrants. Immigrants build wealth and create jobs for native-born Americans. According to a recent report from the Immigration Policy Center of the American Immigration Law Foundation, foreign born individuals are 28 percent of all Ph.D.s in the U.S. who are engaged in research and development in science and engineering. (See, American Immigration Law Foundation, Immigration Policy Center, *Immigration Policy Focus: The Global Battle for Talent and People*, September 8, 2003; Stuart Anderson; Volume 2, Issue 2.) If the government refuses to recognize market needs and demands, the only alternative for American companies will be to move more of their operations offshore. The solution is not, as some have suggested, to cut access to foreign talent and wait while the promise of high wages pulls U.S. students through the pipeline. In the near-term, we simply must have access to foreign nationals. Many of them have been educated in the United States. By sending them home, we are at best sending them to our own foreign plant sites, and at worst to our competitors. The U.S. needs to maintain its global competitiveness and not let other countries lure away the talented professionals that generate ideas, innovation and prosperity. In the future, we will still want to hire the best and the brightest, whatever their nationality.

We are encouraged that the Committee is exploring the economic issues surrounding the H-1B program, and hope that some constructive solutions can be can be identified. Thank you for allowing me to testify. I look forward to answering any questions that you might have.

Testimony of Patrick J. Duffy, Human Resources Attorney for Intel Corporation
Senate Judiciary Committee
September 16, 2003

Thank you, Mr. Chairman and Members of the Judiciary Committee, for holding this important hearing about the role H-1B workers play in our industry. I am very happy to be here today to offer Intel's perspective on the important role that business immigration plays in creating jobs and expanding economic growth.

Introduction to Intel

Intel Corporation is an American engineering Company. Intel designs, manufactures and markets microcomputer components and related products. The Company's products include microprocessors, microcontrollers, memory chips, computer modules, motherboards, network and communication hardware and software products, personal conferencing software, and parallel supercomputers. Intel is the technological leader in the semiconductor industry. We have developed the semiconductor technology on which the entire personal computer industry has been built, and our products have continually revolutionized the industry and redefined the role of the computer in our everyday lives.

Intel is a U.S. based company with global operations. We have major sites in Costa Rica, Ireland, Israel, Malaysia, and the Philippines, and an increasing presence in our fastest growing markets such as China, India and Russia. Seventy percent of our revenue comes from outside the U.S. The majority of Intel's research and development work occurs within the U.S., and four of our five most advanced 300 millimeter manufacturing plants that are either completed or under construction are located in the U.S. representing an investment of more that $8 billion in Intel's U.S. manufacturing capability.

The benefits to the U.S. economy of multinational corporations like Intel are enormous. Intel currently employs close to 80,000 individuals worldwide, with revenues for fiscal year 2002 of US$26.8 billion and net profit of US$3.1 billion. If we grow, jobs grow.

We know the key to growth. To be number one and to stay number one in the high technology industry requires an understanding that human capital, sheer brilliance in the underlying science of computer technology, is the key. We are an international leader because we have been able to locate, hire and retain the world's best engineering talent who in turn develop innovative products that generates demand and spurs growth.

Our immigration philosophy

We view the employment-based immigration system from two distinct perspectives: Our ability to fill critical skill gaps in the U.S. through sponsorship of foreign workers, and our ability to move employees globally for temporary assignments to facilitate technology development and ramp our global factories to the high volume manufacturing of our products. Multinational companies must be able to transfer their top executives and managers and specialists among their worldwide offices and into the United States

just as much as they must be able to recruit and hire new talent that brings cutting edge education in these complex scientific fields. The two needs, which reflect the two major temporary worker visa categories, H-1B and L-1s, are closely linked in our business, and should be considered together by any legislators reviewing the use of critical skilled or highly educated temporary foreign workers.

Intel's philosophy in regard to hiring foreign employees is clear. Whenever there is a U.S. position to be filled, Intel's philosophy is to seek U.S. workers first. Our U.S. Visa Sponsorship Guideline is an example of this philosophy. Our guideline requires that, prior to extending an offer to an individual requiring temporary worker sponsorship, a business group must demonstrate that there is a shortage of U.S. workers with the skills required for the particular job and that the business has made good faith efforts to source qualified U.S. workers. We know that this guideline goes above and beyond what is required by law, but we think it is an essential part of our commitment to the United States.

As a result of our visa sponsorship guideline, our H-1B employee population in the U.S. is less than five percent of our U.S. workforce. That small percentage is comprised of individuals possessing unique and difficult to find skills which can only be acquired through advanced, university level education.

Access to the best educated engineering talent around the world is critical to the company's future success. To demonstrate this point, a review of the bios of the Intel Fellows on our external company website (http://www.intel.com/pressroom/ExecBios.htm) is helpful. The title of Intel Fellow signifies tremendous technical achievement within the company and the industry as a whole. Intel Fellows provide strategic technical leadership and guidance to Intel and represent the company at a variety of industry events and forums. There are currently 45 Intel Fellows, 13 of whom were born outside of the U.S. and many of whom immigrated to the U.S. under our employment-based immigration system. All but one of the foreign-born Intel Fellows currently work for Intel in the U.S.; the one who works for Intel outside of the U.S. has himself entered the U.S. in L-1 status for a temporary assignment requiring his unique experience. All of these individuals have achieved outstanding academic success, and none of them could have acquired their remarkable knowledge and skills outside the rigor and discipline of a university program.

Intel's use of the H-1B visa category

Intel's overall external hiring has decreased dramatically since the beginning of the economic slowdown in 2001 and so has our hiring of employees who require sponsorship for H-1B status. We do, however, continue to hire a limited number of employees requiring sponsorship for those positions where we cannot find enough qualified U.S. workers with the advanced education, skills and expertise we need to compete in this global economy. These positions include Design Engineers at the Master's and Ph.D. levels in fields such as Electrical and Computer Engineering, as well as Process Engineers at the Master's and Ph.D. levels in fields such as Chemical or Materials

Engineering. The vast majority of the H-1B workers we sponsor are educated at U.S. universities.

We expect that we will continue to sponsor H-1B employees in the future for the simple reason that we cannot find enough U.S. workers with the advanced education, skills, and expertise we need. Both the problem and the solution are found in U.S. university graduation statistics. Today, about half of the graduate students in the physical sciences in U.S. universities are foreign nationals, and that percentage increases the higher the degree and the more prestigious the school. The percentage is greatest at the Ph.D. and post-doctorate level, and Intel needs engineers operating at those rarefied levels of knowledge.

U.S. companies and the U.S. government collectively contribute billions of dollars to universities to support cutting edge research. Much of that work is done by graduate students, many of whom are foreign nationals. In order for these gifted students, who have been trained at our finest universities and have excelled at our most demanding programs, to remain in the United States, they must have H-1B status.

There are U.S. employers eager to hire them, but if the H-1B program is burdened by fewer numbers, more bureaucracy and delays in processing and a pejorative enforcement climate, employers will not have the H-1B option and the gifted students will leave the U.S. Economically, intellectually and culturally, the United States loses if its policies force these students to leave, bringing their skills to other countries and companies that are competing with U.S. companies such as Intel. Because U.S. workers with the same education and skills are simply not available in sufficient numbers to satisfy the demand, hiring such talent through the H-1B program does not displace any U.S. worker. Quite the contrary is true. Hiring this level talent is the way Intel invents new products, ensures quality and efficiency in production and grows the company both in revenue and jobs.

Those arguing in favor of severe restrictions - or even abolishment – of the H-1B category quote U.S. unemployment statistics to prove that H-1B workers are not necessary in this down economy. For example, we repeatedly hear opponents of the H-1B program state that the unemployment rate for electrical engineers is approximately 7%. There is a serious flaw with this argument, however. Not all electrical engineers are the same, and their disciplines are not interchangeable. For instance, many "electrical engineers" direct and coordinate operation, maintenance, and repair of equipment at customer sites. This is quite different than the type of electrical engineer that Intel hires who requires H-1B sponsorship. Intel's H-1B electrical engineers are primarily Component Design Engineers with Master's degrees or Ph.D.'s, who have highly specialized skills in VLSI (very large scale integrated) circuit design, CMOS (complementary metal oxide semiconductors), and device physics. Engineers with such education remain in short supply in the U.S. workforce. Engineers without such education cannot acquire it by On The Job Training, or by a short course in a vocational setting. The skills can only be acquired in the course of a structured academic program that, in turn, relies upon the engineer-to-be already having the requisite math and physics academic building blocks. Access to these highly educated engineers is critical to the

development of our future generation of products and technology and to our ability to maintain our position as the global leader in our industry.

Clearly, the real issue here is the lack of **highly-educated** U.S. candidates for the jobs for which we experience shortages. We are so convinced that academic training is where both the problem and the solution lay that Intel contributes over $100 million per year to improve teaching and learning – more than the amount collected through the $1,000 assessment for H-1B visa applications in all of 2000. (See Baldwin, Stephen E., "An Early Review of the H-1B Skills Training Grant Program" submitted to the Employment and Training Administration of the Department of Labor dated August 2001. The report notes that the H-1B assessment generated about $95 million in the year 2000.) Among the many education programs Intel sponsors are: Intel® Innovation in Education, Intel ® Teach to the Future, Intel Computer Clubhouse, Intel International Science and Engineering Fair, and Intel Science Talent Search. Postsecondary education also receives significant support from Intel. The corporation provides equipment and research grants, scholarships and fellowships, and lectures by senior-level Intel technologists to colleges and universities around the country. The goal of Intel's educational philanthropy is designed to spark interest in the hard sciences and engineering among U.S. students in order to generate highly educated U.S. engineers. In our opinion, and in our industry, emphasizing academics in the hard sciences and engineering is the only way to build a U.S. workforce that eliminates reliance on foreign nationals. We also know that it is a long term process since the requisite education must begin in elementary school and continue through an advanced university curriculum if it is to meet our industry's needs.

Intel's use of the L-1 visa category

I recognize that the focus of this hearing is on the H-1B program; however, I think it is important to briefly address how Intel uses the L-1 program for intra-company transferees given the various legislative proposals relating to the L-1 program. As noted earlier in my remarks, U.S. businesses need and use both programs to meet their global competition.

Intel's use of the L-1 visa for intra-company transferees is quite different than our use of the H-1B visa. In the vast majority of cases, when we sponsor an employee for an L-1 visa, it is in connection with a temporary assignment in the U.S., rather than to fill a shortage of highly educated engineers as with do with the H-1B visa. These L-1 temporary assignments are primarily for employees who are working on new products where we have worldwide collaborative design efforts. Our use of L-1 visas is consistent with the legislative intent of the L-1 program: Key personnel who are employed by and do work only for Intel abroad are brought to the U.S. for temporary assignments at Intel and only Intel.

Last year more than 95 percent of the employees we sponsored for L-1 visas came to the U.S. on temporary assignments and when their assignments ended they returned to their home sites **to work for Intel as Intel employees**. In the rare instances that we use L-1 visas to fill a U.S.-based position, it is usually to transfer a key manager or executive to

the U.S. because our domestic operations or corporate headquarters require their global experience and knowledge. These are, in fact, the same reasons we place U.S. employees in other countries. The need to consider key workers as part of a global work force rather than tied to any one site, whether foreign or domestic, is a new and urgent dynamic in our industry. We design, manufacture, and sell to a **world** market. We know that our human capital, our critical skills workers, needs to be as easily transferred as our products in order to compete in that world market. U.S. policies that isolate and obstruct the transferability of our human resources seriously compromise our success. And our failure is certainly not good for either the U.S. economy or U.S. workers.

We have a very proprietary reason to need the L-1 program to continue as a robust part of U.S. immigration law. The participation of engineers and technicians from our non-U.S. sites in development activities and factory implementation plans occurring within the U.S. is part of our Copy Exactly methodology. Copy Exactly, in turn, is the key to our having seamless global operation.

Copy Exactly allows us to rapidly move newly developed technology to high volume manufacturing by preparing employees for the technology transfer through temporary assignments exposing them to the new tools and processes. The Copy Exactly model vastly reduces the time a new factory takes to move from construction and tooling to high volume manufacturing. This Copy Exactly model is employed by Intel for our factory ramps in the U.S. and at our international sites. We want to continue to make the U.S. the centerpiece in R&D and in manufacturing processes and tools, but unless we can easily move our international employees into the U.S. for short term assignments to learn and practice the latest technology, we will have to find alternative sites to continue the crucial Copy Exactly program.

Perspective About the H-1B Training Program

In our opinion, the current usage of the H-1B training funds represent a disconnect if the intent in allocating these funds is to eliminate the U.S.' need for and reliance on H-1B workers. The purpose of the H-1B program is to give companies such as Intel access to advanced university level talent in the hard sciences and engineering field. The need for the H-1B program is rooted in the lack of educated U.S. workers, particularly in engineering and other hard sciences.

The current allocation of the training funds is not directed to solving the shortage of U.S. students in the advanced degree engineering and hard sciences programs. Rather, the grants so far have largely been directed to unemployed or underemployed workers. The training programs are intended to teach basic, entry level skills mostly in the nature of vocational training, not to provide advanced, university level education that is the H-1B program's key benefit to U.S. employers.

If the allocation of training funds is to be truly successful in replacing the need for the H-1B program, then the funding must focus on academics. The grants must be tied to

formal university education in math, chemistry, physics, and engineering at the bachelors degree level at a minimum, but more urgently at the advanced university degree level.

We think that part of the disconnect is that the agency in charge of these grants is not involved in formal academics to prepare people for the workplace, but with people who have become unemployed or underemployed. As long as the grant program is initiated through the Department of Labor, an agency dedicated to improving the existing workforce, it will miss the mark. The need for the H-1B program in this country is rooted in the lack of the formally educated worker in the hard sciences, particularly math and engineering, and no ancillary training can cure that void. Perhaps the Department of Education is a better umbrella agency to develop grant programs that are geared towards U.S. students acquiring the necessary academics required for a career in engineering at a very sophisticated level.

Legislative Proposals

We respectfully urge members of Congress to proceed cautiously before implementing any legislation that hinders the ability of U.S. businesses to compete in the global marketplace.

There is wisdom in continuing the *status quo* rather than doing something in haste. The need for evaluating careful, wise alternatives is especially acute now as we begin an economic recovery. We certainly do not want to do something that artificially impedes that recovery since either a slower recovery or an impeded recovery will harm the U.S. worker.

If we are going to allow ourselves to address the H-1B program more thoroughly and carefully, there are a number of factors that ought to considered at the outset, including: (1) Given its historical inaccuracy, is there a need for a cap on H-1Bs at all or can select economic indicators be used to better reflect actual market conditions and needs? (2) What is the best way to induce American students to pursue education and careers in the hard sciences, especially, math, chemistry, physics, and engineering? (3) How can the Department of Labor better track the positive economic benefits to the U.S. economy of the H-1B program? (4) If the "H-1B replacement grant program" is to continue, where should it be housed, and what should its focus be? (5) For U.S. businesses, what is the relationship between the H-1B and the L programs; can one be divorced from the other? (6) What evidence/hard data exists that demonstrates there is a problem with the current H-1B (or current L) program? Is there a solid economic basis for the popular assumption that hiring an H-1B harms U.S. workers?

Conclusion

If immigration law and regulations create barriers to our ability to hire H-1B workers with the advanced, university level education in engineering and the hard sciences, Intel and other companies will be required to move to those countries where the talent resides since we have not been able to find enough U.S. workers with the advanced engineering

degrees we need. Similarly, restrictions on our ability to move our international personnel into and out of the U.S. under the L program, will force us to consider whether we must move our U.S. development activities to those regions where immigration policies enable multinational companies to compete in a global marketplace. To state Intel's position as simply as possible, as an engineering company, we simply cannot operate without engineers.

The puzzle for our company is why the U.S. government would seriously consider eliminating a program that only brings value to the U.S. economy. While there are anecdotes about laid off U.S. workers, the hiring requirements at Intel are so demanding that they ensure H-1B, with their highly developed skills and advanced education, will contribute and expand the U.S. work force, not replace it. And it is well known that the same H-1B individuals that some of the proposed legislation would exclude from the U.S. are highly sought after by our foreign competitors. How does it help U.S. workers or the U.S. economy to create a playing field that is tilted in favor of foreign competition? Even Alan Greenspan acknowledged that the immigration of highly educated individuals is directly and positively related to our nation's economic growth.

Moreover, the vast majority of H-1B workers we hire are educated at U.S. universities. We do not understand why the U.S. would not want to keep the fruits of that very valuable education in the U.S. By forcing these individuals outside of the U.S., we are in effect educating the talent for our global competitors.

It is important to note that Intel does not just compete with other U.S. businesses. Reducing or eliminating the H-1B visa category does not level the playing field for us. Rather, it gives foreign competitors a huge advantage. We already see Korean, Singaporean, Taiwanese, Chinese, German, and French companies going after the same highly educated talent. If U.S. companies are to compete in this global race for educated engineering skills, it makes no sense for our own government to set up impediments to our success.

The irony here is clear. Although the political rhetoric is about protecting U.S. workers, when played to its conclusion, eliminating or reducing H-1B visas gives foreign countries and companies an advantage in our markets with **resulting U.S. job loss**.

It also is important to remember that we are not dealing with a group of foreign nationals who have a short term stake in the U.S. Rather, in the engineering field, H-1B workers are usually on the way to becoming full U.S. workers themselves. The Immigration law wisely allows a U.S. employer to obtain permanent residence for H-1B workers if the employer can demonstrate that there is a shortage of qualified U.S. workers for the position. So today's H-1B worker is tomorrow's U.S. worker whose advanced education and talent will be available to the U.S. economy permanently. Why would we want to reject this talent at the outset or force it to leave after the individual has acquired U.S. experience? All developed or developing nations are pursuing this same pool of talent aggressively. The U.S. has the advantage of being the first choice of most of the world's

greatest engineering and science talent, but our nation's current anti-immigration attitude puts that historical advantage at great risk.

We do recognize the economic downturn of the last few years has created layoffs of U.S. workers. We also recognize that there will be pressure on the U.S. job market for the foreseeable future as U.S. businesses deal with the pressures created by globalization.

We can deal with this challenge in one of two ways. First, we can try to hide from it by artificially protecting jobs and eliminating business immigration. In my opinion, this is the wrong choice and is not in the long-term interests of our shareholders, or our employees, or the U.S.

Eliminating our access to advanced degreed engineering talent in the U.S. will not work for obvious reasons. By eliminating access of U.S. businesses to this talent, you lessen our ability to innovate (invest in R&D and manufacturing capacity) and therefore we become less competitive. Setting aside the obvious issue of shareholder concerns about profitability, the lifeblood of our industry is new product creation. By eliminating our access to highly educated engineering talent, you take away the option of investing more in R&D.

The other alternative is to accept the challenge of growing the skills of the U.S. workforce, increasing the number of students at the advanced degree level studying the hard sciences and engineering, increasing the productivity of employees, and leading the way in innovation and technology. Only by doing so will we be able to create more jobs and higher end jobs in the U.S.

The keys here are the productivity and innovation of our employees and these, in turn, are directly related to three key factors: education, infrastructure, and R&D investments.

Intel can contribute some in these areas, but much of the responsibility for creating an environment where U.S. workers can effectively compete with their international counterparts rests with the U.S. Government. Hopefully our national leaders will recognize this challenge and forcefully respond with policies and investments to maintain the U.S. as the most productive industrial power in the world.

Thank you for the opportunity to share our perspective with you today.

Statement of
The Honorable Dianne Feinstein
United States Senator
California

September 16, 2003

PRINTABLE VERSION

STATEMENT OF U.S. SENATOR DIANNE FEINSTEIN
HEARING BEFORE THE SENATE JUDICIARY COMMITTEE
ON
"EXAMINING THE IMPORTANCE OF THE H-1B VISA
TO THE AMERICAN ECONOMY"

September 16, 2003

Good afternoon, Mr. Chairman.

Today, the Committee will examine the manner in which the H-1B Visa program impacts the American economy.

Even while the United States' economy ranks among the best in the world, we are suffering today from a prolonged period of economic malaise. The United States economy has lost nearly 3 million jobs since it entered a recession in March of 2001. Despite the fact that the recession was declared to be at an end more than a year ago, we continue to lose jobs on a monthly basis.

One of the saving graces of our economy over the last fifty years is that the technological revolution that has occurred during that time has spawned increased productivity, a host of new industries, and many new jobs.

This was particularly true in the 1990s, when the technical and information revolutions that were born in California drove one of the greatest economic expansions that our country, indeed that the world has ever known. Yet today, even in high technology industries, Americans are losing jobs.

Imagine, then, how difficult it is for those who are losing their jobs to appreciate the calls by some for increased use—or even sustained use—of employment-based visas.

Today, we are living through a so-called jobless economic expansion. What that means for so many of my constituents, and for too many others around the nation, is that they are talented, educated, and ambitious. Yet they are unemployed or under-employed in jobs outmatched by their skills.

It is against that backdrop that I approach today's hearing.

I am proud to represent the State of California—home to 36 million people and the fifth largest economy in the world. The people of my State are building new technologies for tomorrow. They are fiber optic engineers, computer programmers, and software engineers. They produced the intellectual and technological advances that led our nation's economic growth in the last decade.

Today, however, they are among the thousands of professionals looking for work in my State.

Let me share a concrete example of this with the committee. A San Jose Mercury News article reported that Allan Masri, a 52 year old San Jose engineer, was laid off from his quality assurance job at Netscape in 2001. His colleague, an H-1B worker with the same job title, stayed on. Masri said he spent weeks training him on things such as the XML programming language. Masri felt he was replaced by a worker who had come in under the professional visa program.

Today's hearing should carefully examine just how the H-1B visa program is being utilized. Clearly there is a need for the talents and skills of foreign-born professionals in our country. Many bring the knowledge and expertise obtained in their home countries and make significant contributions to our nation's global competitiveness. That is why the H-1B program was established.

However, in light of this need, we should examine whether the program is being accessed only after every effort has been made to find American workers who can perform the job and absolutely no qualified and available American workers can be found? Or is it being used by companies merely as a device to cut their labor costs by hiring foreign workers who are willing to work for less money?

We should examine whether the H-1B program is so subject to abuse that firms are engaging in wholesale violations of the law.

We should examine whether American workers are being displaced by H-1B workers.

And we should examine whether the current labor protections are effective enough to protect U.S. workers, asking ourselves should those protections be strengthened in light of the economic downturn and resulting job losses?

No one would deny an American employer access to a foreign worker if that employer has no alternative American who is capable and available to perform the necessary work But too often, I have heard from constituents who contend that they are actually training foreign workers who go on to replace them. Surely, that is not what Congress envisioned when it established our employment based immigration system.

If we are to sustain our country's global economic vitality, we must reward and invest in the talents and skills of our domestic workforce. And if we are to

prepare for our future economic vitality, we must educate future workers to succeed in jobs that are not yet imagined.

No nation can prosper with a poorly educated workforce, nor can it continue to compete if its current workforce fails to learn continuously. Our nation's competitive edge will depend on the quality of our workforce. I for one do not believe that our workforce is devoid of talent, imagination, and ambition.

Mr. Chairman, on September 5, the federal government announced that the economy shed another 93,000 jobs in August. Of the 93,000 jobs lost in August, 44,000 were in manufacturing. That made August the 37th straight month of manufacturing job losses, now totaling nearly 1.9 million since the recession began in March 2001.

Among the approximately 49,000 service jobs lost in August, some 16,000 were in the information sector while telecommunications shed about 7,000 positions. Professional and business services employment dropped 10,000 jobs in August.

Foreign nationals are a major talent pool for the math, science and engineering professions. A majority of America's civil engineers are foreign-born and more than a third of all engineers are foreign-born.

Certainly we can and should embrace the talents, the great skill and the hard work of foreign professionals who have contributed so much to our nation's economic dominance in the world over the last decade. But our American workers were there, too.

Certainly, we should appreciate the need to engage the services of foreign workers when there is a need to in order to fill job shortages and to make use of their highly specialized skills.

But the H-1B program was never intended to be used as a means for cutting corporate costs. It was never meant to be used as a catalyst for moving U.S. jobs overseas. It was never meant to be used as a means for bringing into the United States captive foreign workers so that they can be abused, mistreated, and even misled about the jobs that they originally entered the country to perform.

H-1B violations
In the last five years, the Department of Labor investigated 656 complaints involving H-1B visas. Out of 308 cases that have become final, the Labor Department found 261 H-1B violations. Of that number, 227 employers owed 1,413 H-1B workers almost $8 million in back wages. The temporary work visa system gives employers tremendous power over immigrants. More than a million people are employed in the U.S. under visas for skilled workers.

The growing trend in H-1B violations is proof that some companies will violate the worker protection laws to protect their bottom-line. This is happening now and in a tough economy, it's going to happen more often.

I imagine that there might be even more cases uncovered if the Department of

Labor and the Department of Homeland Security had the necessary resources to investigate and take action against violators of the H-1B program.

Labor Department's Limited Enforcement Powers
Currently, the Department of Labor is limited in what it can do to ensure that employers are complying with workforce and wage protection laws.

Unlike the Labor Department's enforcement authority under other worker protection laws, it cannot initiate inspections of H-1B employers based on a variety of criteria to determine potential noncompliance.

It cannot survey individual industries to better determine the extent of the compliance with H-1B laws. More importantly, it has no authority to subpoena the necessary records from employers, such as payroll documents to determine whether employers are paying the appropriate wages.

Instead, the Labor Department's authority to investigate H-1B violations must flow from a complaint from an aggrieved person or organization, such as the H-1B worker, an American worker, or the employee's bargaining representative. According to the General Accounting Office, H-1B workers are reluctant to complain about their work conditions because they are dependent on employers to enable them to remain in the United States or to sponsor them for permanent residency.

According to the Department of Labor Inspector General and the General Accounting Office, if armed with the right resources and investigative authority, the Department of Labor could uncover even more instances of non-compliance with existing H-1B laws.

In fact, in its assessment of the H-1B program in 2000, the General Accounting Office indicated that the Wage and Hour Division of the Department of Labor is likely to find more violations in H-1B complaint cases than in complaint cases under other laws.

If we are to believe in the integrity of the H-1B visa program, we should not tie the Labor Department's hands when it comes to ensuring that U.S. workers are adequately protected from unlawful displacement, or ensuring that foreign workers are not subjected to abuse or exploitation by unscrupulous employers. Simply put, there should be a more thorough and more substantive review of compliance by H-1B employers.

Trade Agreements
Before I conclude, I would like to address an issue raised by Stephen Yale-Loehr in his written testimony. In his remarks, Mr. Yale-Loehr seems to take exception to legislation introduced by a bipartisan group of members of the Judiciary Committee that would prohibit immigration provisions from being included in trade agreements.

As the committee knows, the President recently signed fast-track legislation implementing trade agreements with Singapore and Chile. This legislation will

permit 6,800 foreign nationals from those countries to enter the U.S. each year on H-1B visas. Mr. Yale-Loehr cautions Congress from enacting laws that would "violate those bilateral or multilateral agreements."

Mr. Yale-Loehr's statement goes to the heart of my opposition to legislating immigration policy in fast-tracked trade agreements.

Under the fast-track rules governing congressional consideration of free trade agreements, Congress can only engage in limited debate. The rules impose expedited procedures and deadlines. And they provide that no amendments can be offered to the legislation, leaving Congress with only an up-or-down vote on the measures.

In other words, Congress loses all ability to influence the content of a trade agreement negotiated under fast-track procedures.

This is precisely what occurred during the Senate's consideration of the free trade agreements with Chile and Singapore.

In essence, the trade agreements with Singapore and Chile contained provisions that created sweeping and permanent new categories of visas regardless of whether Congress deemed these new entries valid or beneficial to our nation's economy and welfare, our national security, and – even more importantly – regardless of whether Congress might want to change these new categories at some later date.

Let me say this: Making laws is what I and my colleagues on this Committee were elected to do. The U.S. Trade Representative was not elected by the voters in my state to make immigration law. I was elected and I must answer to my constituents when that law carries the consequences of displacing worker, disrupting lives, and destroying communities.

That being said, what I would like to take away from this hearing is simple: policy solutions for restoring credibility to a program that is still subject to abuse.

I look forward, Mr. Chairman, to hearing from today's witnesses.

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PRINTER FRIENDLY VERSION

Statement of
The Honorable Orrin Hatch
United States Senator
Utah

September 16, 2003

PRINTABLE VERSION

September 16th, 2003

JUDICIARY STATEMENT: "EXAMINING THE IMPORTANCE OF THE H-IB VISA TO THE AMERICAN ECONOMY"

Statement of Chairman Orrin G. Hatch

before the

Senate Committee on the Judiciary

Hearing on

"Examining the Importance of the H-IB Visa to the American Economy"

Thank you for being here today. The Committee is holding this hearing because we need to take a careful look at the role of the H-1B visa category in today's economy. Since 1952, this visa category (or its predecessor) has allowed some of the most talented persons in the world to come to the United States. During this time, our nation became a global leader in technology and innovation.

From 1980 to 2000, there was a 623 percent growth in high technology jobs in our country. By the late 1990s, there was a shortage of American workers in that field. In response to the need for a larger high technology labor force, Congress twice increased the numerical limits. In 1998, through the American Competitiveness and Workforce Improvement Act, we increased the annual cap from 65,000 to 115,000 visas.

By 2000, even the newly-raised cap was not sufficient to meet the needs of the industry. For that reason, I sponsored the American Competitiveness in the 21st Century Act, or AC-21. AC-21 increased the level of annual numerical limit to 195,000 visas. We realized that increasing the cap was only a temporary solution to a long-term problem, which is the lack of American students enrolling in fields of math, science, and technology. Therefore, as part of the 1998 Act and again in AC-21, we implemented training and scholarship programs, funded by a $1,000 fee to be paid by H-1B employers, so that our nation would not have to perpetually look for highly specialized workers abroad.

The latest figures I have seen indicate that more than $692 million was raised for the education, training, and retraining of American students and workers. According to the General Accounting Office, these programs are attracting a high proportion of minorities and women into the field of science and technology, providing valuable diversity to the hi-tech workforce of the future. Altogether, funds raised through H-1B applications have helped provide training to more than 55,000 American workers, and have funded scholarships for more than 12,500 students in science and engineering.

At the end of this fiscal year, some of the provisions of AC-21 will sunset. If nothing is done between now and the end of this month, the numerical limitation will revert to 65,000, and there will no longer be statutory authority to collect the $1,000 fee to fund the scholarship and job training programs.

The job market today is much different than it was in 1998 and 2000. There are many who are out of work, including American professionals in the high technology sector. We in Congress have the responsibility to get as much information as we can in order to make the best, most informed decision as to what action should be taken in light of the impending sunset, and what should be done as a long-term solution to protect the interest of American workers without impeding our nation's ability to compete in a global market.

I want to be absolutely clear: I would not support any legislation that is not in the best long-term interest of the American economy and American workers. We should not tolerate any fraud or abuse of the H-1B visa process that would lead to the displacement of hardworking Americans. However, we have to be cautious in identifying the true cause for our nation's unemployment problems. I hope that throughout the course of this hearing, we can find answers to some important questions. Two questions we must answer are whether the presence of highly specialized professionals from other countries actually and significantly impacts the unemployment rate, and whether it is fair to point our fingers to immigrants for all of our economic problems without checking whether facts or figures support such accusations?

For example, we often hear the accusation that U.S. companies are using the H-1B visa to hire cheaper foreign workers. However, recently released figures from the Federal Reserve Bank of Atlanta indicate that the median annual salary of H-1B visa workers, 98 percent of whom hold at least a bachelor's degree, is $55,000, whereas the median income for U.S. workers who hold bachelor's degrees, consisting of 26 percent of U.S. residents over the age of 25, is $46,000 per year.

Moreover, assuming that a legitimate U.S. company follows the law and pays prevailing wage, is there really an economic incentive for that company to hire a foreign worker over an equally qualified American?

In addition, figures provided by the Bureau of Citizenship and Immigration Services show that as unemployment rose in the past year, the number of H-1B petitions has also decreased. Specifically, the number of initial applications for computer-related jobs dropped 77 percent from 110,000 in 2001 to 25,000 in 2002. Given this trend, is there sufficient evidence showing that American workers are losing their jobs to incoming foreign professionals?

As we review the impact of immigration on our job market, we must also view the issue in the larger context of what immigrants have contributed to the United States economy. For example, a study from U.C. Berkley shows that Chinese and Indian entrepreneurs are responsible for 29 percent of the technology business in Silicon Valley; in the year 2000, they created over 72,000 jobs. Given these statistics, what would be the larger impact of keeping international talent away from U.S. soil?

We need to ask whether the current anti-immigration sentiment is in the long-

term interest of the American economy and American workers. If our nation is to stay competitive, can we do so without having access to the most talented individuals from abroad? If we fall behind other industrialized countries, what would that do to our own economic development, and what are the consequences to American workers and their families if we do in fact fall behind? The Bureau of Labor Statistics projects a 42 percent job growth in the field of science and engineering, and an 82 percent growth in computer related jobs between 2000 and 2010. Can we afford not to have the best talent in the world if we are to continue our role as a leader in innovation and productivity?

By the end of this hearing, I hope that the Judiciary Committee, the Senate, the Administration, and other policy makers will be in a better position to consider the appropriate next step with respect to H-1B visas, both in terms of deciding what to do in light of the impending sunset of key provisions, and in terms of reaching a long-term solution that would both protect the interest of American workers and secure America's position as a leader in technology and innovation.

Once again, thank you being here at this hearing as we discuss this important issue affecting the well-being of the American workers and of the American economy.

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from the office of

Senator Edward M. Kennedy

of Massachusetts

FOR IMMEDIATE RELEASE
September 16, 2003

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STATEMENT OF EDWARD M. KENNEDY AT THE SENATE JUDICIARY COMMITTEE HEARING ON "EXAMINING THE IMPORTANCE OF THE H-1B VISA TO THE AMERICAN ECONOMY"

Mr. Chairman, thank you for calling today's important and timely hearing.

In today's world, commerce, like communication, is world-wide. Investments are highly mobile, and the hopes for better lives are universal. No country is beyond America's reach and influence, and every country has the power to reach and touch America. We are connected to the world and Americans earn their livelihoods in both peaceful competition and essential cooperation with those in other lands. For the good of the nation and the economy, we need an immigration policy that reflects the realities of our modern world.

In the past decade, in a period of extraordinary economic growth fueled by the information technology revolution, we needed skilled foreign workers, and Congress responded by increasing the H-1B cap to 195,000.

Today, however, the economy is much weaker. Last month, the national unemployment rate rose to 6.1%, with no sign of it abating. In Massachusetts, the rate is 5.4%, a sharp contrast from three years when the rate was down to 2.5%. Across the country, Americans continue to suffer serious and ongoing job losses in many sectors.

Despite the downturn, the H-1B visa program is still essential to enable U.S. companies to be productive and competitive. We need to pay greater attention to the types of industries using the H-1B program, the positions filled by H-1B workers, and the professional credentials and specialized skills these workers.

Two other factors must also be considered in evaluating the appropriate number of H-1B visas. It now seems that 22,000 H-1B applications filed during FY03 will not be processed before the end of this fiscal year on September 30, and will be carried over to the next fiscal year and counted against next year's cap. That will leave only 43,000 H-1B visas for new applications filed in FY 2004 if we allow the cap to revert to 65,000 as current law provides.

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In addition, the recent Chile and Singapore Free Trade Agreements have created a new non-immigrant visa category for professional workers that will be counted toward the overall H-1B cap.

Also, Congress needs to act on other provisions of the H-1B program that will sunset on September 30 -- especially the $1,000 filing on these visa applications that is used to fund job training programs for U.S. workers and scholarships for U.S. students in computer science, engineering, and math. Between 2000 and 2002, $129.3 million in filing fees were provided to colleges and universities. As a result, 12,526 low-income undergraduate and graduate students have received scholarships.

The Department of Labor also received $228.6 million from the H-1B user fees for job training programs. Grantees have reported to the Department of Labor that, among participants who have completed training, 4,422 individuals received promotions or wage increases, 7,695 earned certificates or degrees and 4,460 were placed in new jobs.

These are all very important issues, and our immigration laws, regulations, and procedures must be fair and reasonable. They must meet the needs of our troubled economy. They must meet the needs of employers, and protect the rights of workers and unemployed. They must also respect our immigrant heritage and history.

I look forward to the testimony of our witnesses and working with my colleagues on both sides of the aisle to deal with this pressing challenge.

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U.S. SENATOR PATRICK LEAHY

CONTACT: David Carle, 202-224-3693 VERMONT

Statement of Senator Patrick Leahy
Ranking Member, Senate Judiciary Committee
"Examining the Importance of the H-1 Visa to the American Economy"
September 16, 2003

When the Congress last considered the H-1 visa program in 2000, the United States was in the midst of an extraordinary economic boom. At that time, we authorized a substantial increase in the number of visas under this program, which allows highly skilled foreign workers to come to the United States on a temporary basis. In a few weeks' time the increases we authorized will end, and we will go from allowing 195,000 H-1B visas annually to allowing 65,000. Given the weakness of our current economy, and the rising unemployment we have experienced under President Bush's stewardship, many who supported the increase in 2000 now believe that 65,000 visas are sufficient. I have not yet heard compelling reasons to increase the cap above 65,000, but I look forward to reviewing the testimony of today's witnesses before making any final conclusions on that issue.

Although members may disagree about how many visas should be available, I hope that we can all agree to extend and even strengthen the protections for American workers that are included in the law and which are also slated to expire at the end of the current fiscal year. For example, under current law employers whose workforce includes a substantial percentage of H-1B visa holders must attest that they have not and will not displace an American worker within a 180-day period surrounding the visa petition. We should extend that provision, and consider applying it to all employers, not just so-called "H-1B dependent" ones. Similarly, the Department of Labor's authority to initiate fraud investigations also expires at the end of this month and that, too, should be extended.

In addition, we increased the fee paid by employers petitioning for H-1B visas from $500 to $1000 in 2000 in order to better fund worker training programs. The fee will revert to $500 at the end of this fiscal year absent Congressional action. We need to act to retain the current fee as soon as possible. I know that the H-1B fees make a difference to training programs in my state of Vermont and around the nation. They also preserve the idea behind this program – that the long-term solution to shortages in workers with specialized skills is to educate the American workforce. I understand that John Steadman, the president-elect of IEEE, will offer suggestions to improve our training programs on behalf of America's engineers, and we should take his advice into account as we review the H-1B program.

Finally, I am curious whether our witnesses today support the "carve-out" of 7,000 H-1B visas for nationals of Chile and Singapore, which was included in the legislation

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Congress passed in July to implement our Free Trade Agreements ("FTAs") with those nations. Statistics released this month by the Department of Homeland Security indicate that neither Chile nor Singapore have been among even the 20 most frequent users of the H-1B program, and yet we are now devoting more than 10 percent of the available visas to those two nations. This is an example of the misguided policies we will have if the Administration continues to include immigration provisions in the FTA's it negotiates. I have joined Senator Feinstein and many others on both sides of the aisle in opposing their inclusion, and I urge the Administration to make the agreements with Chile and Singapore the last FTAs that contain immigration provisions.

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Testimony of

John W. Steadman, Ph.D., P.E.
President-Elect
The Institute of Electrical & Electronics
Engineers – United States of America (IEEE-USA)

To The

Committee on the Judiciary
United States Senate

Examining the Implications of the H-1 Visa for the American Economy

16 September 2003

My name is John Steadman and I am testifying today in my role as the President-Elect of the Institute of Electrical and Electronics Engineers – United States of America (IEEE-USA). Until recently, I headed the Department of Electrical Engineering at the University of Wyoming in Laramie. Last month I became the Dean of Engineering at the University of South Alabama in Mobile.

The Institute of Electrical and Electronics Engineers is a transnational professional society made up of more than 382,000 individual electrical, electronics, computer and software engineers in 150 countries around the world. IEEE-USA was established in 1973 – in the midst of another economic downturn – to promote the professional careers and technology policy interests of IEEE's 235,000 U.S. members, approximately 2% of whom are H-1B visa holders.

Nearly 70% of IEEE-USA's members work for private businesses, primarily in the aerospace and defense, biomedical technology, computers and communications, electrical and electronics equipment manufacturing and electric power industries. Ten percent (10%) are employed by Federal, state and local government agencies. Another 10% teach

at American colleges and universities or work for non-profit research organizations. Most of the rest are self-employed and/or work as consultants to business and government.

Employment-Based Admissions Programs

Responding to speculative predictions that America faced critical shortages of engineers, scientists and other highly skilled professionals, Congress made several important changes to the nation's employment-based immigration laws beginning in 1990.

The Immigration Act of 1990 revised permanent employment-based visa programs and authorized increases in the admission of foreign nationals seeking legal permanent resident status in the United States. It modified temporary work visa programs and created new ones for foreign professionals and other skilled workers. And it expedited admissions processing for foreign visitors coming temporarily to conduct business or to study in the United States.

Proponents argued that these changes were needed to enable businesses and educational institutions to compete for people with specialized knowledge and skills deemed to be in short supply in the United States. Opponents insisted that there was no compelling empirical evidence of shortages that could not be met by improving education and training opportunities for U.S. workers. Others raised concerns about the potentially adverse effects of substantial increases in the supply of temporary foreign workers on employment opportunities and compensation for U. S. citizens and legal permanent residents, especially during periods of flat or declining economic growth.

Among the most important of the new temporary admissions programs - as a source of skilled professionals for U.S. employers and transitional visas for foreign students who intend to apply for legal permanent resident status - is the H-1B visa program.

Key Features of the H-1B Visa Program

To qualify for an H-1B visa, a foreign national must have at least a baccalaureate degree (or equivalent experience) in an occupation requiring the theoretical and practical application of specialized knowledge and skills and a job offer from a U.S. employer.

Employers who plan to hire H-1B workers must file labor condition applications (LCAs) at the U.S. Department of Labor and agree to pay H-1B workers prevailing wages in their intended areas of employment.

H-1B dependent employers (where more than 15% of all employees are H-1B workers) must also attest that they have tried and been unable to recruit U.S. workers and have not displaced and will not displace U.S. workers in order to hire H-1B workers.

These labor condition application requirements are intended to ensure that the admission of foreign professionals on H-1B visas will not adversely affect job opportunities, wages and working conditions for similarly qualified U.S. workers.

As soon as the Department of Labor approves their Labor Condition Application, all petitioning employers must submit an H-1B visa application to the Bureau of Citizenship and Immigration Services (formerly the Immigration and Naturalization Service) in the Department of Homeland Security along with an application-processing fee of $130.

Private sector employers must pay an additional $1,000 fee to help fund technical skills training programs for U.S. workers administered by the Department of Labor, a special educational grants and scholarships program administered by the National Science Foundation and improvements in H-1B program administration and enforcement.

H-1B Visa Ceilings and Admissions Trends

In 1998 and again in 2000, Congress substantially increased the numbers of foreign professionals legally authorized to enter the United States on H-1B visas - from 65,000 a year to 115,000 a year for 2 years beginning in 1999; and to 195,000 a year for 3 years beginning in 2001.

The current 195,000 H-1B visa ceiling will fall back to 65,000 at the end of this month. And, unless they are extended by Congress, the recruitment and retention requirements for H-1B dependent employers and provisions authorizing the use of application fees to fund education and training programs for U.S. workers will expire at the same time.

Immigration and Naturalization Service data indicate that demand for H-1B workers grew slowly during the early 1990's - from 52,000 visas issued in FY 1992 to 60,000 in FY 1996 - and then spiked sharply upward, from 91,000 in FY 1998 to nearly 137,000 in FY 2000.

Since then INS has reported approving more than 200,000 initial H-1B petitions in FY 2001; 103,584 in FY 2002; and 141,520 in the first three quarters of FY 2003. 56,986 of this year's approvals to date count against the current 195,000 cap. The other 84,534 petitions that have been approved so far this year are for persons who are exempt from the Congressionally mandated cap. Exempt workers include those employed by colleges and universities as well as those who work for nonprofit and governmental research organizations. An additional 47,813 petitions are currently pending adjudication, one third of which will count against the cap if they are approved.

If this year's 95% approval rate continues in the 4th quarter, as many as 238,995 could be approved in FY 2003, more than twice as many as were approved last year.

According to INS data, more than two-thirds of the new H-1B visa petitions approved in recent years have been for information technology workers and engineers, including electrical, electronics, computer and software engineers. Most of the rest have been for managers and administrators of various kinds and college and university educators.

The most common country of birth for new H-1B workers is India (with nearly 50%), followed by China, Canada, the United Kingdom, the Philippines and Korea (with 20%).

Nearly 60% have Bachelors degrees; 30% have Masters degrees; and 8% have PhDs or other professional degrees.

The median annual compensation for all new H-1B workers with Bachelors degrees in recent years has been $50,000. New H-1B workers with Masters degrees in computer-related and engineering occupations earn $60,000 a year. Those with PhDs earn between $70,000 and $75,000 a year.

Nearly 60% of all new H-1B workers in recent years came from overseas. 40% had been previously admitted on other temporary visas. 24% held student visas.

1) The H-1B Visa Is Exacerbating the Problem of Engineering Unemployment

IEEE-USA is extremely concerned that current levels of engineering unemployment – precipitated by the collapse of the Dot-Com and telecommunications sectors – are being exacerbated by the continuing reliance of many employers on foreign-born professionals admitted under the H-1B and other "temporary" work permit programs and by the global outsourcing of engineering and other high paying manufacturing and service sector jobs.

Between FY 2000 and FY 2002, the INS approved almost 800,000 H-1B visa petitions (540,000 new petitions and 250,000 renewal petitions).

During the same 3 year period, unemployment among electrical and electronics engineers in the United States spiked sharply upward from 1.3% in 2000 to 4.2% in 2002. The unemployment rate for computer scientists rose from 2.0% in 2000 to 5.0% last year.

And the unemployment situation has become even worse in 2003. According to the Bureau of Labor Statistics, the unemployment rate for electrical and electronic engineers reached an all time high of 7.0% in the first quarter of this year. 6.5% of U.S. computer hardware engineers and 7.5% of all computer hardware engineers were out of work. These were *unprecedented* levels for each occupation.

The impact of H-1Bs on the labor market is also compounded by a significant loss of jobs in the high-tech sector. According to recent statistics from the American Electronics Association, America's electronics industry shed 560,000 high paying manufacturing and service jobs between January 1, 2001 and December 31, 2002. Given contemporaneous increases in the outsourcing of high-end, manufacturing and service sector jobs to lower-cost overseas locations, many of these "high wage/high value added jobs" may be gone for good.

2) H-1B Worker Safeguards are Weak and Ineffective

The H-1B Labor Condition Application requirements were originally intended to help balance U.S. employers' needs for temporary access to specialized skills not readily available in the United States with U.S. workers needs for safeguards against unfair competition for jobs in domestic labor markets.

Employers who intend to hire foreign nationals on H-1B visas are required to attest that: 1) they will pay their H-1B workers the higher of the actual or prevailing wage in their intended area of employment; 2) working conditions for U.S. workers will not be adversely affected; 3) there are no strikes or lockouts at locations where H-1B workers will be employed; and 4) that a notice of their intent to hire foreign workers on H-1B visas will be posted at their intended place(s) of employment.

So-called "H-1B dependent" employers (where 15% or more of all employees are H-1B workers) must also attest that: 5) they have tried and been unable to recruit U.S. workers; and 6) they have not displaced and will not displace U.S workers in order to hire H-1B workers. Employers of H-1Bs who are paid at least $60,000 per year or who have at least a Master's degree or the equivalent in a specialty related to needs of such employers are not subject to these recruitment and retention requirements.

Currently H-1B dependent firms account for only about 2% of the companies that submit H-1B applications (source). The remaining 98% of employers that petition for H-1B workers are not required to try to recruit and retain U.S. workers before hiring H-1Bs.

3) H-1B Investigative Powers and Enforcement Authority Are Also Limited

Largely because the Departments of Labor and Homeland Security have very limited investigative and enforcement authority, the attestation requirements that were enacted to protect job opportunities, wages and working conditions for U.S. workers and help to prevent H-1B workers from being exploited have proven to be weak and ineffective.

Most notably, the prevailing wage attestation requirement is riddled with loopholes. Rather than having to pay current prevailing wages identified using standardized procedures, employers are free to use a wide variety of acceptable sources to establish the validity of the wages they intend to pay. Sometimes wage rates are based on surveys that are two or three years old. In addition, proposed salaries meet the prevailing wage requirement if they are no more than 5% lower than the actual or prevailing wage being paid to similarly qualified U.S. workers in applicable areas of employment.

Several studies have found that many H-1B workers are paid substantially less than similarly skilled U.S. workers (Sources). Others, most notably a 2001 National Research Council report and a 2003 Federal Reserve Bank of Atlanta study, have concluded that the magnitude of any effect that the H-1B program has on wages is difficult to estimate. (Sources) Significantly, the NRC report notes that the H-1B effect may not be to depress wages but rather to keep wages from rising as rapidly as they would if there were no H-1B program.

Because they have very limited authority to initiate investigations or enforcement actions before receiving a complaint, the hands of the Departments of Labor and Homeland Security are effectively tied when it comes to taking prompt and decisive action against employers who abuse the program. Displaced Americans are likely to be long gone before their foreign replacements show up for work. And H-1B workers, who are

virtually indentured to sponsoring employers for periods of six years or longer, are often reluctant to complain to the government if their employers fail to live up to their labor condition attestations.

4) Fee-Based Skills Training Programs are Missing their Intended Targets

A key selling point that helped to persuade skeptical lawmakers to approve an expansion of the H-1B program in 1998, was the imposition of a $500 fee (raised to $1,000 in 2000) on petitioning employers to fund technical skills training programs for U.S. workers; grants and scholarships to enable low income students to study math, engineering and computer science at American colleges and universities; math and science educational improvement projects in grades K-12; and improved H-1B program administration and enforcement by responsible Federal agencies.

According to a recent report from the U.S. Department of Commerce (Education & Training for the Information Technology Workforce, June 2003), very few of the training providers who have received H-1 technical skills training grants from the Department of Labor are preparing U.S. workers for the kinds of professional-level jobs for which U.S. employers typically recruit foreign nationals on H-1B visas. This is due, in part, to ambiguity about the types and levels of training that should be provided and the traditional emphasis of most local Workforce Investment Boards on the provision of entry-level training for unemployed and disadvantaged workers. Similar concerns are noted in a 2002 General Accounting Office report (GAO-02-881).

5) Statistical Deficiencies Continue to Hamper Policy-Makers

The continuing lack of current statistical information seriously limits the ability of policy-makers in Congress and responsible agencies to effectively oversee and manage the workings of the H-1B program.

Numerical and demographic information about H-1B workers and their employers as well as statistics on the results of investigative and enforcement actions must be collected and disseminated much more quickly than they have been in the past. To be optimally useful to decision makers, they should provide more accurate estimates of the size of the H-1B population, not just (as they do now) on variations in the levels of work performed by various agencies (eg., labor condition applications processed by the Department of Labor; visa petitions received and approved by the Department of Homeland Security: and visas issued in the United States by the Departments of Homeland Security and at overseas locations by the Department of State).

6) The Impact of the H-1B is Compounded By Abuses of the L-1 Visa

In addressing the impact of the H-1B, Congress must also consider the implications of the L-1 Visa. The L-1 (Intra-Company Transfer) visa was established by Congress in the 1950's to enable multi-national companies to periodically relocate foreign executives, managers and workers with specialized knowledge of their employer's products and

services to branches and subsidiaries in the United States. It is currently being used by non-U.S. engineering services firms to import significant number of technical workers, IT professionals and engineers through their U.S. subsidiaries, who are outsourced to other U.S. companies and subsidiaries, who in turn, lay off their U.S. workers. In many instances, the displaced U.S. workers are being forced to train their non-U.S. replacements in order to obtain a severance. The L-1 Visa has been exploited in this fashion due to its lack of even minimal workforce protections and because it allows some employers to avoid, at least for a time, the public scrutiny and negative publicity associated with the H-1B visa program.

We don't believe that Congress intended – or could have even anticipated – that the L-1 visa program would be used by some companies to import substantial numbers of technical workers, IT professionals and engineers and then use those employees to provide services under contract or lease arrangements with other U.S. based employers who, in turn, lay off many of their U.S. workers. The practice of requiring displaced U.S. workers to train their replacements in order to qualify for severance benefits is an outrageous abuse and is clearly at odds with the purposes for which the L-1 visa program was originally established.

7) **Increasing Reliance on Guest-Workers Also Fuels Outsourcing**

Another assertion that is often made by the proponents of high tech guest worker programs is that they will be forced to send even more jobs overseas if their ability to import foreign nationals in sufficient numbers without being burdened by any worker safeguards or user fees is limited or otherwise compromised. IEEE-USA believes that this threat rings hollow, because it greatly oversimplifies the economic forces that are driving globalization.

Even though U.S. employers continue to enjoy easy access to guest-workers through the H-1B, L-1 and other work visa programs, the outsourcing of engineering design as well as research and development functions to lower cost overseas locations has been increasing so rapidly that some companies are getting nervous about the possibility of unfavorable publicity and the attendant potential for political backlash. If reducing costs and increasing short-term profits are the principal drivers, then global outsourcing will continue to occur regardless of how wide we open the door to guest-workers, simply because the comparative advantage of acquiring labor and facilities at overseas locations so far outweighs the costs of labor and facilities in the United States that there can be no effective competition. Paul Kostek, a former IEEE-USA President who currently chairs the American Association of Engineering Societies, has said as much in a recently published article entitled "How Can You Compete with an $800 a Month Engineer?"

To make matters worse, we believe that by continuing to import guest workers through the H-1B and L-1 visa programs, U.S. based employers are actually facilitating and expediting the transfer of manufacturing and service jobs to lower-cost overseas locations. Foreign professionals are increasingly being brought to the U.S. specifically to facilitate outsourcing by taking advantage of their connections, language skills, and

familiarity with offshore business partners. Also, as more and more guest-workers return home, they take with them an acquired knowledge of the U.S. market and business practices, a network of contacts, and exposure to U.S. technology and its applications. With that knowledge, coupled with lower domestic labor costs, they are well positioned to compete with U.S. firms for outsourcing work.

The net result is that the United States is making itself increasingly dependent on foreign technical expertise both here and abroad. The best and brightest U.S. students who we would hope are attracted to scientific and engineering careers are smart enough to see that their career paths and earning potential is limited, and will choose alternative careers. Ultimately at risk is America's ability to innovate and to use technology to provide competitive advantage and ensure our national security.

Policy Recommendations

In order to restore the H-1B temporary admissions program to its original purpose; to reduce its adverse effects on job opportunities, wages and working conditions for citizens, legal permanent residents and foreign nationals who have been legally admitted to work temporarily in the United States; and to address current high levels of unemployment among high tech professionals in the United States, IEEE-USA urges Congress to:

1. Reduce H-1B Admissions Ceilings and Limit Authorized Stays

   - The H-1B visa quota should be reduced to its originally authorized level of 65,000 per year when the current level of 195,000 expires at the end of FY 2003.
   - Authorized stays should normally be limited to a single, 3-year, non-renewable term.
   - Additional reforms that will facilitate the permanent admission of foreign professionals with highly specialized knowledge and skills, including foreign-born recipients of Ph.D. degrees in Science and Engineering should also be considered.

2. Strengthen Essential Safeguards for all Affected Workers

   - Mandate that all H-1B workers be paid a prevailing wage that is not less than the median salary paid to similarly qualified U.S. workers in their intended area(s) of employment.
   - Extend the applicability of the recruitment and retention attestation requirements that currently apply only to H-1B dependent employers to all employers of H-1B workers.

3. Improve H-1B Program Administration and Enforcement

   - Increase visa processing efficiencies and reduce backlogs and delays by centralizing key administrative responsibilities that are currently shared by the Departments of Labor, Homeland Security and State.
   - Enhance compliance and reduce fraud and abuse by authorizing random audits of labor condition applications and related H-1B visa applications.
   - Add a credentials verification component to the application process to help ensure that H-1B workers meet minimum educational requirements.

4. Increase the Availability and Effectiveness of H-1B Technical Skills Training

   - Give employers and affected individuals greater flexibility in the choice of qualified training providers than exists under current law.
   - Consider the use of training vouchers to enable individuals to better meet specialized, short-term instructional requirements.

5. Improve the Timeliness and Utility of Statistical Reports

   - Mandate publication of timely reports on numbers of visa applications received and visas issued as well as demographic information on temporary visa recipients, including their age, occupation, educational attainment, level of compensation and country of origin as well as the names and industry sectors of their sponsoring employers, and
   - Commission detailed analyses of the impact of temporary work visa programs and global outsourcing of research, design and manufacturing jobs on national, regional and local labor markets for highly skilled professionals in the United States.

6. Address Immigration Reform: Another important and often ignored issue that Congress must consider when assessing the advantages and disadvantages of the H-1B, L-1 and other temporary admissions programs is the impact of these programs on foreign guest-workers themselves. Most are all too willing to accept relatively low wages and substandard working conditions in order to enter or remain in the United States. Many come seeking an opportunity to obtain permanent resident status, to become citizens and realize the American dream.

   IEEE-USA shares the long-held belief that welcoming foreign nationals with the knowledge, skills and determination needed to succeed and making them citizens has helped to make America great. To the extent that demand for high tech professionals exceeds the current domestic supply, we urge Congress to make needed reforms in the nation's permanent, employment-based admissions system in the belief that an immigration policy based on the concept of "Green Cards, Not Guest-workers" will do far more to help America create jobs, maintain our technological competitiveness, and ensure our economic and military security than continuing to rely on temporary

admissions programs ever will. American policy should be to bring the best and brightest to the U.S. and keep them here.

7. Pass the U.S. Jobs Protection Act (S.1452/H.R. 2849): Congress should actively support the prompt enactment of the USA Jobs Protection Act. This bill was introduced on July 24th by Senator Chris Dodd (D-CT) as S. 1452 and in the House by Representative Nancy Johnson (R-CT) as H.R. 2849.

   If enacted, this critically important legislative proposal will plug loopholes and prevent abuses of both the H-1B and L-1 temporary visa programs. More specifically, it includes provisions that will:

   - Prohibit displacement of U.S. workers by L-1 visa holders,
   - Require employers to pay L-1 workers prevailing wages,
   - Prevent companies from leasing L-1 workers to other (secondary) employers,
   - Require all employers of H-1B and L-1 workers to make U.S worker recruitment and retention attestations. This requirement currently only applies to a handful of so-called H-1B dependent employers, and
   - Strengthen the Secretary of Labor's authority to investigate abuses of the H-1B and the L-1 temporary work visa programs

Conclusion

The bottom line is that U.S. employers are continuing to import significant numbers of skilled foreign professionals on H-1B and other temporary employment-based visas at a time when U.S. engineers, computer scientists and other information technology workers are experiencing sustained and historically high levels of unemployment.

Our collective ability to create and sustain high wage/high value added jobs for U.S. high tech professionals, including women and other traditionally underrepresented minorities, and ensure viable careers that will attract future generations into technical fields are the fundamental issues in the current debate about temporary, employment-based admissions and the global outsourcing of high-end manufacturing and service sector jobs. In this regard, it is critically important that Congress and this Committee maintain the broadest possible perspective and take a comprehensive look at the current and future health of the nation's high tech workforce and not limit its focus to the narrow issue of H-1B visas.

Texas Instruments Incorporated

TEXAS INSTRUMENTS

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September 22, 2003

The Honorable Orrin Hatch
Chairman, Committee of the Judiciary
United States Senate
SD-224 Dirksen Senate Office Building
Washington, DC 20510

Dear Mr. Chairman:

I wanted to submit for the record views from Texas Instruments about the H-1B program. TI appreciates your willingness to review the program as various elements of it are set to expire.

Texas Instruments is primarily a semiconductor company with over 34,400 employees that operates in more than 25 countries. About 75% of TI's business results from overseas sales.

TI's headquarters are located in the United States and about 59 percent of its workforce is currently located here. That percentage has remained reasonably steady over the last several years. The vast majority of TI's semiconductor wafer fabrication assets and R&D capabilities are also concentrated in the U.S.

During the last two years, hiring has been down for TI, as it has for most semiconductor companies. Despite that fact, specialized positions, primarily for design and process engineers, continue to get filled. These engineers are responsible for designing the next generation of product, and the technical process for manufacturing them efficiently. They are, in every sense, the lifeblood of the company.

During the downturn TI's staffing efforts have generally been focused on hiring experienced engineers. We have sought out the best talent in the country and have actively recruited at many semiconductor companies that have downsized their workforce. TI, however, has continued to rely on the H-1B program to meet some of its hiring needs for certain highly skilled electrical engineering positions. Virtually all of these H-1B hires are graduates of U.S. universities with advanced degrees in electrical engineering. In fact, foreign nationals are awarded more than 51 percent of the master's degrees and 59% of the PhDs in electrical engineering from U.S. universities. The reality is that there are just not enough U.S. students graduating from our schools with advanced degrees in these specialized areas.

TI must be able to access the talent produced in U.S. schools if we are to remain competitive. These foreign students are among the best and brightest from their countries and they contribute significantly to TI's growth. Their presence supports and creates other U.S. jobs in sales, manufacturing and other areas. We hire these graduates with the intention of keeping them here permanently, beginning the process to secure green cards for them shortly after they are hired.

TI and other companies invest in basic R&D at U.S. universities, as does the federal government. Much of this cutting edge research is done by graduate students. Yet, U.S. law, in effect, encourages them to return home and work for our competitors rather than to stay here, even when they want to remain.

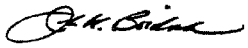
Companies, including TI, are very much aware of the education challenges the nation faces. We have been actively engaged in efforts at the local, state and federal level – at all points in the educational continuum (PreK-16) - and have invested millions of dollars in programs to improve student performance, close the achievement gap, and grow the pipeline of science, engineering and technical graduates from American colleges and universities. This is a long term undertaking that will not be accomplished quickly.

As such, we will continue to rely on hiring a small number of foreign nationals to meet our needs. TI urges Congress to review and rethink the current system that lumps PhDs and Masters degree recipients from U.S. universities with other users of the program. In addition, we should also look at a system that separates truly temporary work from those highly educated professionals who seek to become permanent residents in the United States.

TI also continues to be concerned about allegations about abuse of the program. The law prohibits employers from paying foreign workers less than Americans. We support and urge the Department of Homeland Security and the Department of Labor to root out abuses in order to ensure that legitimate users have access to the visas. The foreign nationals TI hires on the H-1B program comprise about 3 percent of our workforce. According to data from the Department of Homeland Security the entire semiconductor industry utilized less than 3,000 H-1B visas altogether in FY 2002, out of a workforce of roughly 250,000. These individuals are highly sought after and are very much aware of their worth. They command and receive very competitive offers.

In short, having access to a limited number of highly educated professionals to help spur US economic growth is critical to the United States remaining competitive and winning in the global economy. Thank you.

Sincerely,



John K. Boidock
Vice President, Government Relations

Statement of

Stephen Yale-Loehr

of

Cornell Law School

and the

American Immigration Lawyers Association

on

"Examining the Importance of the H-1B Visa to the American Economy"

Before the Senate Committee on the Judiciary

Tuesday, September 16, 2003

Washington, D.C.

Mr. Chairman and distinguished members of the committee, I am Stephen Yale-Loehr. I teach immigration and refugee law at Cornell Law School in Ithaca, New York, and am co-author of *Immigration Law and Procedure*, a 20-volume immigration law treatise that is considered the standard reference work in this field of law. I also am of counsel at True, Walsh & Miller in Ithaca, New York, where I practice business immigration law. I am honored to testify today both as an academic and on behalf of the American Immigration Lawyers Association (AILA). AILA is the immigration bar association of more than 8,000 attorneys and law professors who practice and teach immigration law. Founded in 1946, the association is a nonpartisan, nonprofit organization and is an affiliated organization of the American Bar Association. I chair AILA's Business Immigration Committee.

AILA's mission includes the advancement of the law pertaining to immigration and naturalization, the promotion of reforms and the facilitation of justice in the field. AILA's members focus on a wide variety of immigration issues and are well acquainted with the H-1B program, having significant experience representing and educating both the employers who need essential international personnel and the employees who meet that need. The members of our association represent large and small businesses, academic institutions, research facilities, and government entities that employ foreign nationals.

My testimony today focuses on the following:

- An overview of the H-1B nonimmigrant visa category: its history, legislative background, and usage;
- The importance of the H-1B visa category to the U.S. economy;
- The H-1B program's impact on U.S. workers;
- The important differences between the H-1B program and another nonimmigrant visa–the L-1 intra-company transferee visa;
- H-1Bs, the global economy, and free trade agreements; and
- Proposals to improve the H-1B category.

OVERVIEW OF THE H-1B PROGRAM

Through the H-1B program, U.S. employers are able to hire, on a temporary basis, highly educated foreign professionals for "specialty occupations"– jobs that require at least a bachelor's degree or the equivalent in the field of specialty. Examples include doctors, engineers, professors, accountants, researchers, medical personnel, and computer professionals. Besides using these foreign professionals to obtain essential skills or rare and unique knowledge, U.S. employers use the program to acquire special expertise in overseas markets, trends or distribution (therefore allowing U.S. businesses to compete in global markets), and to alleviate temporary shortages of U.S. professionals in specific occupations.

During the economic boom of the 1990s, highly educated foreign nationals filled vacancies in many sectors of our economy. While much attention focused on H-1Bs filling positions in the information technology (IT) field, H-1Bs also proved essential in many non-technology-oriented industries such as: education (elementary, secondary and higher); engineering; architectural and related services; scientific research and development; semiconductor and other component manufacturing; medical and surgical hospitals and other related medical services; pharmaceutical and medicine manufacturing; and management, scientific and technical consulting services.

Today, many industries continue to need highly educated professionals and turn to the H-1B program to fill these specialized positions that would otherwise remain vacant. In the science-oriented sectors there still are not enough U.S. students graduating with advanced degrees to fill these specialized positions. Other fields, such as education, have shortages in specific areas of the country where positions continue to go unfilled. In addition, as U.S. companies try to revitalize their businesses, they need access to professionals with unique knowledge, skills and expertise in the domestic and overseas markets. These professionals give U.S. companies the ability to develop new products, platforms and programs, enter new markets, and expand their client base. The result is increased productivity and job creation for American workers.

Legislative Background and Numerical Limits

Statutory authority for the H nonimmigrant visa categories is found in the Immigration and Nationality Act of 1952 (INA).[1] Under the 1952 legislation, the H-1 category was comprised of foreign nationals of "distinguished merit and ability" who were filling temporary positions in the United States while maintaining a foreign residence abroad.

Congress has made a series of revisions to the H-1 category over the last 50 years. With the Immigration Nursing Relief Act of 1989,[2] Congress split the old H-1 category into a separate H-1A category for registered nurses and an H-1B category for all other persons of distinguished merit and ability. The Immigration Act of 1990 (1990 Act) established the H-1B program as we know it today by limiting its use to noncitizens who are members of the professions, designated as "specialty occupations."[3] The 1990 Act also added the current labor attestation scheme and did away with the foreign residence requirement.

In addition, as a result of the 1990 Act, the H-1B nonimmigrant classification was for the first time subjected to numerical limits. H-1Bs were initially limited to 65,000 per year. This "cap" was reached (and at times, exceeded) between 1997 and 2000, prompting Congress, through the American Competitiveness and Workforce Improvement Act of 1998 (ACWIA),[4] to temporarily increase the annual allotment of H-1B visas (to 115,000

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[1] Pub. L. No. 82-414, 66 Stat. 163 (codified as amended at 8 U.S.C. §§1101 et seq.) (hereinafter INA). For a detailed treatment of the H-1B visa category see 2 Charles Gordon, Stanley Mailman & Stephen Yale-Loehr, Immigration Law and Procedure § 20.08 (rev. ed. 2003).

[2] Immigration Nursing Relief Act of 1989, Pub. L. No. 101-238.

[3] Immigration Act of 1990 (1990 Act), Pub. L. No. 101-649.

[4] American Competitiveness and Workforce Improvement Act of 1998 (ACWIA), Pub. L. No. 105-277.

for fiscal years (FYs) 1999 and 2000, and to 107,500 for FY 2001). When those increases proved inadequate to meet demand, Congress passed another temporary increase in October 2000 through the American Competitiveness in the 21st Century Act (AC21).[5] The AC21 raised the H-1B cap to 195,000 for FYs 2001-2003, with that number set to revert back to 65,000 two weeks from now, on October 1, 2003. Certain H-1B employees are exempt (and will continue to be exempt after October 1) from these numerical limitations, including those employed by institutions of higher education, a related or affiliated nonprofit, a nonprofit research organization, or a governmental research organization.

The AC21 also brought needed flexibility to the period of admission for H-1B nonimmigrants. Ordinarily, an H-1B worker is permitted to be in the United States for a maximum of six years. Initial admissions may be for up to three years, with extensions of up to another three years. A noncitizen who has reached the normal six-year H-1B cap is eligible for a new six-year period in H-1B status only after living outside the United States for at least one year.

The AC21 created two important exceptions to the six-year limit on H-1B stay. First, H-1B nonimmigrants who are beneficiaries of pending or approved immigrant visa petitions but who are running out of time because of quota backlogs may receive extensions until their adjustment of status applications are adjudicated. Second, an H-1B nonimmigrant with a pending I-140 immigrant visa petition or adjustment of status application may extend beyond the six years if more than 365 days have elapsed since his or her labor certification application or immigrant visa petition was filed. Extensions are granted in one-year increments.

Additional legislative changes to the program are discussed below.

Protection of U.S. Workers

Safeguards in the Program: Congress has been careful to build in safeguards to the H-1B program to ensure that H-1B foreign professionals do not undercut wages paid to comparable U.S. workers. Employers must offer the foreign professional a wage that is the *higher* of either the typical wage in the region for that type of work ("prevailing wage"), or what the employer actually pays existing employees with similar experience and duties ("actual wage"). The employer also must demonstrate that the position requires a professional in a specialty occupation and that the intended employee has the required qualifications. In addition, a U.S. employer using this program must guarantee that: (1) the foreign professional will be paid at or above the rate paid for a similar position at the employer's own offices or at those of its local competitors; (2) the foreign professional will not adversely affect the working conditions of U.S. colleagues; (3) U.S. colleagues will be given notice of the professional's presence among them; and (4) there is no strike or lockout at the worksite. These guarantees or "attestations" are made on a form known as the Labor Condition Application (LCA), which is a prerequisite to H-1B approval. Employers also must document compliance with these requirements in a public access

[5] American Competitiveness for the 21st Century Act of 2000 (AC21), Pub. L. No. 106-313.

file. Sanctions may be imposed upon an employer for failing to meet the LCA conditions or for making misrepresentations on the form, including back pay, civil fines, and temporary disqualification from filing certain immigrant or nonimmigrant visa petitions.

Under the ACWIA, employers who use a higher percentage of H-1B visas ("H-1B-dependent employers") and employers who have been found to commit a willful failure or misrepresentation in LCA compliance in the previous five years ("willful violators") must meet additional requirements, including documenting recruitment in the United States, and are forbidden from laying off American workers to hire an H-1B professional. The ACWIA also increased penalties for companies that violate the law to include fines of up to $35,000, a three-year bar from participating in visa programs, and repayment of salaries and benefits to any under-paid foreign professional. In addition, the ACWIA created a new penalty for retaliation against whistle blowers, and temporarily increased the authority of the Labor Department to investigate an employer's practices in connection with the LCA requirements upon receipt of specific credible information.

Fees Associated with Hiring an H-1B and Training Programs Funded by Fees: While the temporary increases in the H-1B cap, discussed in the preceding section, provided a short-term means to alleviate a shortage of U.S. workers, Congress also passed a more enduring remedy to the apparent mismatch between the skills and qualifications of U.S. workers and the skill requirements of U.S. employers. The ACWIA created a "user fee" of $500 over and above the regular filing fees as a condition for the approval of an H-1B visa petition filed on or after December 1, 1998. This fee was increased to $1,000, effective December 17, 2000.[6] The fees, which are collected for the initial H-1B petition, the first extension of stay (with the same employer) and for a change of employer, fund both a scholarship and training account for U.S. workers and enforcement of the H-1B program.[7] Employers exempt from this fee include institutions of higher education and related or affiliated nonprofit entities, nonprofit research organizations, and government research organizations. Other schools (elementary and secondary) were also added as exempt employers in 2000.[8] Additionally, no $1,000 fee is required where an amendment but no extension is requested, for example upon certain corporate restructurings. This $1,000 user fee is scheduled to end October 1, 2003.[9]

During the past five years, fees paid by U.S. employers to hire foreign-born professionals on H-1B visas have totaled more than $692 million. These fees have helped provide training to more than 55,600 U.S. workers and have funded scholarships for more than 12,500 U.S. students in science and engineering.[10]

Impact on Comparable U.S. Workers: It is hard to determine the impact of H-1B workers on comparable U.S. workers. The only comprehensive effort to date, conducted

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[6] Pub. L. No. 106-311.

[7] For more information on programs funded by the fees, *see* the Department of Labor's website at http://www.doleta.gov and the National Science Foundation's website at http://www.nsf.gov. *See also* Congressional Research Service, Report No. RL31973, *Education and Training Funded by the H-1B Visa Fee and the Demand for Information Technology and Other Professional Specialty Workers* (updated July 1, 2003) [hereinafter CRS H-1B Training Fee Report].

[8] Pub. L. No. 106-311.

[9] INA § 214(c)(9), 8 U.S.C. § 1184(c)(9).

[10] CRS H-1B Training Fee Report, *supra* note 7.

in 2000 by the National Research Council of the National Academy of Sciences, concluded that the magnitude of any effect the H-1B program has on wages is difficult to estimate with confidence.[11] The report noted that the effect, if any, may not be to depress wages and employment opportunities for U.S. workers but rather to keep wages from rising as rapidly as they would if the program did not exist. Another study in 2001 similarly concluded that if the H-1B program has any effect on comparable U.S. workers, the effect must be subtle because it does not appear immediately in the data.[12]

An article issued just last week by a research economist for the Federal Reserve in Atlanta tried to quantify the impact of H-1B professionals on IT workers, which is one subset of H-1B workers.[13] After going through a complicated regression analysis, the author concluded that her results suggest that the number of H-1B workers does not depress wages or wage growth. The study also found that H-1Bs do not appear to have an adverse impact on contemporaneous unemployment rates, although they may have an effect on unemployment rates a year later.

The study also found that median income of H-1B recipients was $55,000 in fiscal 2001, and about 98 percent of these workers at least had a bachelor's degree. In contrast, about 26 percent of U.S. residents age 25 and older had at least a bachelor's degree in 2000, and median earnings among these workers was $46,969, according to Census Bureau figures cited by the Federal Reserve study. This tends to show that H-1B workers are being paid more than the average comparable U.S. worker, at least at a national level.

Another recent review of the H-1B program by the Immigration Policy Center (IPC)[14] cites data from the National Science Foundation that foreign-born professionals actually earn more than their native counterparts when controlled for age and the year a science or engineering degree is earned.[15]

According to the IPC report, some of this difference may result from foreign-born workers being more likely to enter the job market in private sector companies than in public or private universities, which pay less. Controlling for type of employer and occupation shows a negligible difference between foreign-born and native at the bachelor's, master's and Ph.D. levels. Although many individuals in the National Science

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[11] National Research Council, Building a Workforce for the Information Economy (2000). The report's executive summary is available at http://www.nap.edu/execsumm/0309069939.html (last visited Sept. 12, 2003).

[12] Lindsay Lowell, *Skilled Temporary and Permanent Immigrants in the United States*, 20 Population Research and Policy Rev. 33 (2001).

[13] Madeline Zavodny, *The H-1B Program and Its Effects on Information Technology Workers*, *in* Federal Reserve Bank of Atlanta, Economic Review (third quarter 2003), at 1, *available at* http://www.frbatlanta.org/index.cfm (click on "Publications" and then "Periodicals") (last visited Sept. 12, 2003).

[14] Stuart Anderson, *The Global Battle for Talent and People*, Immigration Policy Center, American Immigration Law Foundation (Sept. 2003), at 10-11.

[15] National Science Foundation, Indicators in Science and Engineering: 2002.

Foundation data set may no longer be on H-1B visas, others are, and the ones who are not would in many cases have worked in that status for some period of time.[16]

H-1Bs are not Cheap Labor: It is also important to take into account the money and hassle associated with hiring a foreign-born professional on an H-1B. To hire a foreign national on an H-1B visa a U.S. employer must incur the following costs: $1,500 to $2,500 in legal fees; $1,000 training/scholarship fee; $1,000 "premium processing" fee (not required but often used to overcome long processing times); and $125 or more in additional incidental costs. These combined costs total between $2,600 and $4,600. That does not include additional in-house human-resources costs associated with the extra work involved in the employment of foreign nationals or the time lag in hiring a foreign national vs. a native-born individual.

These costs and the National Science Foundation data noted above do not show the type of systematic underpayments to the foreign-born that would justify the charge of "cheap labor." Moreover, the fact that it is illegal to pay an H-1B visa holder less than a comparable native professional, combined with the difficulty of employers maintaining separate pay scales for H-1Bs and other employees working alongside them, as well as the ability of H-1B visa holders to change jobs and seek the market wage for their services, leads to the conclusion that critics are exaggerating any widespread use of employees on H-1B visas as "cheap labor."

DOL H-1B Enforcement: Statistics from the Department of Labor (DOL) show an increase in H-1B enforcement over time.[17] In FY 1997, the DOL began 33 investigations based on alleged violations of the H-1B program. By contrast, in FY 2001, when the recession hit in full force, the DOL began 200 H-1B investigations. If current trends continue, it appears that the DOL will start about 150 H-1B investigations in FY 2003. Overall, between FY 1992 and March 31, 2003 the DOL started 886 H-1B investigations and concluded 482 of them.

Overall, in the ten and one-half year period between FY 1992 and March 31, 2003, the DOL found that almost $12 million in back wages was due to over 2,300 H-1B nonimmigrants who had not been paid the correct amount.

A review of DOL H-1B enforcement actions concluded in the first half of FY 2003 provides more details about H-1B violators. During those six months the DOL found that 478 H-1B workers had not been paid the correct wage. Of those 478, 351 (71 percent) came from just three H-1B violators: Alphasoft Services Corporation in Walnut Creek, California (186 H-1B nonimmigrants due $141,981 in back wages); People.com Consultants Inc. in Maynard, Massachusetts (96 H-1B nonimmigrants due $609,037 in back wages); and JBAS Systems Inc. in Santa Clara, California (69 H-1B nonimmigrants due $249,758 in back wages). The other investigations typically involved only a few H-1B nonimmigrants each. Several investigations concluded that no back wages were due, but that the employer had failed to comply with the LCA public access requirements. If

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[16] Anderson, *supra* note 14, at 10.

[17] U.S. Dep't of Labor, H-1B Program Data for FY 1992-2003 (on file with author).

this enforcement trend is true for other fiscal years, this appears to indicate that a few companies account for most H-1B violations.

What does all this mean? As usual in the H-1B area, people can look at these statistics two ways. Some may argue that the number of investigations and fines indicate that the DOL is doing an adequate job enforcing the H-1B program. Others may complain that the total number of H-1B workers due back wages and the millions in fines levied under the program show that the H-1B program is flawed, or that DOL enforcement is inadequate, and that either way the H-1B program should be scrapped. Those numbers, however, should be measured against the size of the overall H-1B program. As stated above, in the ten and one-half year period between FY 1992 and March 31, 2003, the DOL found that slightly over 2,300 H-1B nonimmigrants were paid inadequate wages. During that same time the Immigration and Naturalization Service (INS) approved over one million H-1B petitions for new employment.[18] Thus, the number of H-1B nonimmigrants found to have been paid inadequate wages is only about two-tenths of one percent.

My own view is that the DOL is enforcing the H-1B program adequately, and that most employers seem to be complying with the attestation regime. Supporting this view is the fact that the Labor Department has found "willful" H-1B violations requiring debarment from the program in less than five percent of its investigations.[19] This disparity between the number of enforcement actions (886) and the ultimate finding of debarment (43) would seem to indicate that many employers simply experience some difficulty in complying with the complex H-1B-related regulations.

Statistics on H-1B Usage

An examination of the data reveals that H-1B visa usage is market driven. Like other nonimmigrant visa categories, H-1B usage has waxed and waned over the last decade in response to economic conditions. A chart from the U.S. Citizenship and Immigration Services (USCIS), attached as Appendix A, sets forth H-1B admissions and approvals for FYs 1992-2002, further broken down between cap and non-cap approvals.[20]

Past Usage: Between FY 1992 and FY 1996, the former INS approved 62,000 or fewer H-1B petitions per year. From FY 1997 to FY 2001, the booming high technology sector and an expanding economy created demand for both native and foreign-born professionals. In many cases, U.S. employers hired the foreign-born professionals after they completed undergraduate or graduate studies in the United States. Increased hiring of foreign-born professionals was not the result of a concerted effort to find and recruit

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[18] INS, H-1B Admissions and Approvals: 1992-2002, reprinted in Appendix A to this testimony.

[19] U.S. Dep't of Labor, H-1B Program Data for FY 1992-2003 (on file with author).

[20] The number of approved petitions exceeds the number of individual H-1B workers because sometimes more than one U.S. employer submits a petition on behalf of the same H-1B worker, particularly if it is for part-time work. The number of approved H-1B petitions for initial employment exceeds the cap because of employer-based cap exemptions and multiple petitions for individuals. For example, approved petitions for initial employment are exempt from the cap if the sponsors are institutions of higher education or nonprofit organizations affiliated with institutions of higher education.

foreign workers. Rather, in the course of normal recruiting, the employers hired both native and foreign-born individuals. As the IPC report notes, 10 percent of those holding U.S. baccalaureate degrees in science and engineering in 1999 were born abroad. "This figure was 20 percent for master's degree recipients and 25 percent or greater for doctorate-holders (much higher in some engineering and computer science fields)."[21] Therefore, it is natural that employers would hire foreign-born individuals for a portion of available positions. Approximately 42 percent of those hired on H-1B visas in FY 2002 possessed a master's degree or higher, according to USCIS data.[22]

Recent Usage: USCIS statistics show that during the economic peak in FY 2001, the former INS approved 164,000 H-1B petitions subject to the cap.[23] However, in FY 2002, that number dropped by half, to 79,000–equaling a mere 0.058 percent of the total U.S. labor force.[24]

Data also show that the number of H-1B petitions approved for workers in computer-related occupations fell precipitously by 61 percent from 191,400 in FY 2001 to 75,100 in FY 2002.[25] While H-1B usage in nearly every occupation group declined between 2001 and 2002, notable exceptions included education, medicine and health, and life sciences. These occupation groups increased by 19, 14, and 7 percent.[26] These statistics reinforce the fact that H-1B usage is market driven, having followed, in this example, the overall downward trend in the high tech sector. The data also reveal the importance of the H-1B category for non-information technology-related occupations, in particular for the vital and perennially underserved medical, education, and science sectors.

Data also indicate that in FY 2002, approximately 65 percent of the beneficiaries of initial H-1B employment were in the United States in another nonimmigrant status. In 2001, this number was 40 percent.[27] The number of H-1B workers outside the United States approved for initial employment dropped from 115,800 to 36,500 in fiscal year 2002, or 68 percent below fiscal year 2001.[28] The majority of H-1B beneficiaries who are already present in the United States are likely graduates of U.S. universities. These are the people we train to help industry. It is bad policy to train them and then tell them that they cannot obtain a job here because the H-1B cap is too low. Otherwise we are just training our foreign competition.

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[21] Anderson, *supra* note 14, at 12-13 (quoting National Science Foundation, Indicators in Science and Engineering: 2002).

[22] Dep't of Homeland Security, Office of Immigration Statistics, Characteristics of Specialty Occupation Workers: Fiscal Year 2002 (Sept. 2003), at Table 7, p. 11 [hereinafter DHS FY 2002 H-1B Report].

[23] See Appendix A.

[24] Anderson, *supra* note 14, at 2.

[25] DHS FY 2002 H-1B Report, *supra* note 22, at 12.

[26] *Id.*

[27] *Id.* at 5. In a report covering May 1998 to July 1999, an estimated 58 percent of H-1B workers already in the United States in a nonimmigrant status were here as academic students. *See* INS, Characteristics of Specialty Occupation Workers (H-1B): May 1998 to July 1999 (Feb. 2000), at 4, *available at*: http://www.bcis.gov/graphics/shared/services/employerinfo/report1.pdf (last visited Sept. 12, 2003).

[28] DHS FY 2002 H-1B Report, *supra* note 22, at 5.

A USCIS press release on H-1B usage for FY 2003 indicates that 56,986 H-1B petitions subject to the cap were approved through June 30, 2003, the first three quarters of FY 2003.[29] At that rate (6,333 per month) approximately 76,000 H-1B petitions subject to the cap would be approved this fiscal year.

THE L-1 AND H-1B VISA PROGRAMS—TWO DISTINCTLY DIFFERENT CREATURES

Some immigration critics have tended to lump together two very different nonimmigrant visa categories–the H-1B and the L-1 intracompany transferee categories–to the detriment of both. The L-1 and H-1B visa programs are distinct programs meant to achieve different ends. While the H-1B visa allows U.S. employers to hire professional level workers, the L-1 visa allows companies to transfer specific high-level talent that is already present in the company from one location to another in an expedient manner. These visa programs are designed for different purposes, and the requirements of each program reflect these differences. Unfortunately, when the distinct nature of these programs are blurred, as has happened with recent legislation, confusion results and the benefits of the programs are jeopardized. Such a blurring of the programs implies a lack of understanding of the different purposes of the two categories.

As noted above, U.S. employers use the H-1B visa program to hire foreign professionals who provide needed specialized or unique skills, relieve temporary worker shortages, and supply global market expertise. To be eligible for an H-1B visa, a foreign national must possess at least a U.S. bachelor's degree (or its equivalent) in a specific a specialty occupation.

As discussed above, H-1B employers have to satisfy certain requirements to protect the labor market. Employers must pay an H-1B worker the higher of the prevailing wage for the position or the actual wage paid to similarly situated professionals. They must also file an attestation form with the Labor Department agreeing to certain conditions. As part of the attestation process, they must fulfill other obligations such as publicly posting a notice of the offered position at the place of employment and providing notice of the hire to any union representatives. H-1B employers who employ a certain number or percentage of H-1B employees must satisfy additional obligations. These employers are considered to be H-1B dependent and must demonstrate that their hires of H-1B employees have not resulted in the displacement of U.S. workers.

The L-1 visa is designed for the more narrow purpose of helping international companies transfer their key personnel–managers, executives, and employees with specialized knowledge–to assist affiliated U.S.-based operations. To be eligible for an L-1 visa, a foreign national normally must have been employed by the foreign company continuously as a manager, executive, or a person of specialized knowledge for at least one year during the three years preceding application to come to the United States. No degree or other external benchmarks must be met for L-1 eligibility because an applicant's general educational qualifications are not relevant to this visa category.

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[29] See USCIS Announces Latest H1-B [sic] Petitions Statistics for FY 2003 (Aug. 26, 2003), *available at* http://www.bcis.gov/graphics/publicaffairs/newsrels/H1BRelease8-26-03.pdf (last visited Sept. 12, 2003).

Instead, this category contemplates factors pertinent to enhancing an international business's flexibility and productivity such as the length and type of specific experience gained with the affiliated business entity.

L-1 visa holders are current employees who are transferred temporarily within the company to add value or provide expertise based on their international experience with the company. As such, they do not constitute new hires. Moreover, the L-1 visa holder already is eligible to maintain home-country benefits,[30] which in many cases, because of the particular foreign state's social welfare laws, are more valuable than U.S. benefits, and often difficult to measure and compare to U.S. benefit plans.

The different purposes of these visa programs are also reflected by each program's built-in flexibilities. The H-1B visa allows the foreign professional to efficiently move his employment relationship to a different unaffiliated employer. In addition, when the H-1B employee is the pursuing a green card through a sponsoring employer, this category permits extensions of stay beyond the maximum six-year statutory limit.

Such flexibilities are not offered the in the L-1 program since the individual is not actually entering the U.S. labor market, but is only in the United States to perform a job for his or her employer. However, the lack of a cap on the L-1 visa category does provide flexibility to U.S.-based employers by permitting them to transfer these key employees as necessary. Conversely, the H-1B program is not granted such flexibility and remains capped, even though usage statistics indicate that the cap is unnecessary because visa issuance follows market trends.

H-1B VISAS IN A GLOBALIZED ECONOMY

Globalization, or the cross-border movement of goods, services, and people, is one of the most important characteristics of this century. Some have raised concerns that globalization (and the related activity of overseas outsourcing, or offshoring) hurts the U.S. economy. In my view, the H-1B visa category, if properly administered and monitored, can be an antidote to concerns about overseas outsourcing. Use of H-1B visas encourages work in the United States and thus can help keep and grow jobs in the United States.

It is easy to paint the phenomenon of globalization with too broad a brush, characterizing it as either all good or all bad, depending on your point of view. I will address only one subset of globalization: jobs affecting IT workers. Bruce Mehlman, Assistant Secretary of Commerce for Technology Policy, noted in testimony before the House of Representatives in June that it is difficult to separate U.S. IT job losses due to the post-bubble business cycle from slower growth in overall IT employment resulting from global competition.[31] Little data exists to demonstrate one-to-one relationships. It is clear

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[30] *See, e.g.*, Matter of Pozzoli, 14 I. & N. Dec. 569 (Reg. Comm'r 1974).

[31] Testimony of Bruce P. Mehlman, Assistant Secretary for Technology Policy, U.S. Dep't of Commerce, *The Globalization of White-Collar Jobs: Can America Lose These Jobs and Still Prosper?*, House Committee on Small Business (June 18, 2003), *available at*

that as the growth in U.S. IT jobs has slowed for multiple reasons, the volume and value of off-shored work has increased rapidly.[32]

Forrester Research, a high-technology consulting group, estimates that the number of service sector jobs newly located overseas, many of them tied to the IT industry, will climb to 3.3 million in 2015 from about 400,000 this year. This shift of 3 million jobs represents about 2 percent of all U.S. jobs.[33]

As Assistant Secretary of Commerce Mehlman noted, globalization contains both potential and pitfalls for the United States:

> While policymakers try to promote national interests, it is getting much harder to define them as the global economy develops. For example, is it better for America to buy a BMW made in South Carolina or a Ford made in Canada? How about IT services procured through IBM but performed in India, versus services purchased from Infosys but staffed using H-1B workers living and spending their salaries in America? Is it better to help manufacturers remain competitive by enabling them to cut IT costs through off-shoring or help IT service workers remain employed by shielding them from global competition? New Jersey recently wrestled with a similar question when its Department of Human Services (Division of Family Development) off-shored a basic call center used to support a welfare program. In the wake of controversy, the state returned the nine jobs to New Jersey, albeit at 20 percent higher cost (thereby reducing the amount of funds available for the welfare recipients for whom the call center is needed). How will we answer the question when seeking to maximize resources for medical care for the elderly, education for our children or homeland defense?[34]

As Mr. Mehlman also noted, overseas outsourcing of IT work can also benefit the United States and create more jobs for U.S. workers:

> [T]he majority of work sent offshore is lower-wage, represents a small fraction of the overall market for software and IT services, and will never displace a large majority of work done here in the U.S. Indeed, the Bureau of Labor Statistics projected in December 2001 that the number of professional IT jobs in the U.S. will grow by 72.7% between 2000 and 2010. And since global competition is a two-way street, U.S. IT companies gain opportunities to win global business, particularly as developing nations improve their own domestic markets for hardware, software and services. For example, IBM won a $2.5 billion (over 10 years) contract to manage Deutsche Bank's IT operations in December 2003. In fact, in 2001 U.S. cross-border

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http://www.house.gov/smbiz/hearings/108th/2003/030618/mehlman.html (last visited July 25, 2003) [hereinafter Mehlman testimony].

[32] *Id.*

[33] Steven Greenhouse, *I.B.M. Explores Shift of White-Collar Jobs Overseas*, New York Times, July 22, 2003.

[34] Mehlman testimony, *supra* note 31.

exports of IT services totaled $10.9 billion, while imports totaled $3 billion, yielding a trade surplus of $7.9 billion.[35]

These are some of the hard questions Congress must ponder as it decides the proper role of immigration, including H-1B visas, in a globalized economy.

Appendix A: H-1B Admissions and Approvals: 1992-2002

Fiscal Year	Admissions[1,2]	Approvals	Approvals for Initial Employment[3]	Approvals for Continuing Employment	Cap[4]	Cap Approvals[5]	Comments[6]
1992	110,000	NA	49,000	NA	65,000	49,000	
1993	93,000	NA	62,000	NA	65,000	62,000	
1994	106,000	NA	60,000	NA	65,000	60,000	
1995	118,000	NA	54,000	NA	65,000	54,000	
1996	144,000	NA	55,000	NA	65,000	55,000	
1997	208,000	NA	70,000	NA	65,000	65,000	Cap reached 9/1/97; 5,000 petitions carried over and applied to FY98 cap.
1998	241,000	NA	84,000	NA	65,000	65,000	Cap reached 5/11/98; 19,000 petitions caried over and applied to FY99 cap.
1999	302,000	NA	174,000	NA	115,000	137,000	Audit done estimating cap exceeded by 22,000; thousands of other petitions carried forward to FY01.
2000	356,000	258,000	137,000	121,000	115,000	115,000	Cap reached 7/21/00; thousands of approved petitions forgiven from cap by AC21.
2001	384,000	331,000	201,000	130,000	195,000	164,000	Cap not reached; AC21 creates cap exemptions for initial beneficiaries employed by non-profit organizations.
2002	370,000	198,000	104,000	94,000	195,000	79,000	

[1] INS Statistical Yearbook (various years)

[2] Admissions represent the number of visits of of H-1B nonimmigrants admitted during the year. May include multiple arrivals of the same beneficiaries and beneficiaries issued visas in previous years.

[3] Between 1992 and 1998 the petition approval date and initial authorization employment date were not available separately. After 1998, the petition approval date and initial employment date were available separately.

[4] Petitions approved in a given fiscal year may apply to the cap in the following fiscal year beginning in 1999 because approval and initial employment authorization dates were available separately.

[5] Approved petitions counting against the cap

[6] Not meant to completely explain the relationship between approved and cap petitions.

NA---Not available

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