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Senate Judiciary Committee
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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.