Testimony of

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To The

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United States House of Representatives

On

The Offshoring of High-Skilled Jobs

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I'd like to begin by thanking Chairman Manzullo and the other Members of the House Committee on Small Business for inviting IEEE-USA to testify on the subject of off-shoring high-skilled jobs — an increasingly important issue with serious implications for individual Americans and the future economic and technological competitiveness of the United States.

My name is Ron Hira and I am an Assistant Professor of Public Policy at Rochester Institute of Technology. I am testifying today on behalf of the Institute of Electrical and Electronics Engineers – United States of America (IEEE-USA). I currently chair IEEE-USA's R & D Policy Committee and am an active member of its Career and Workforce Policy Committee.

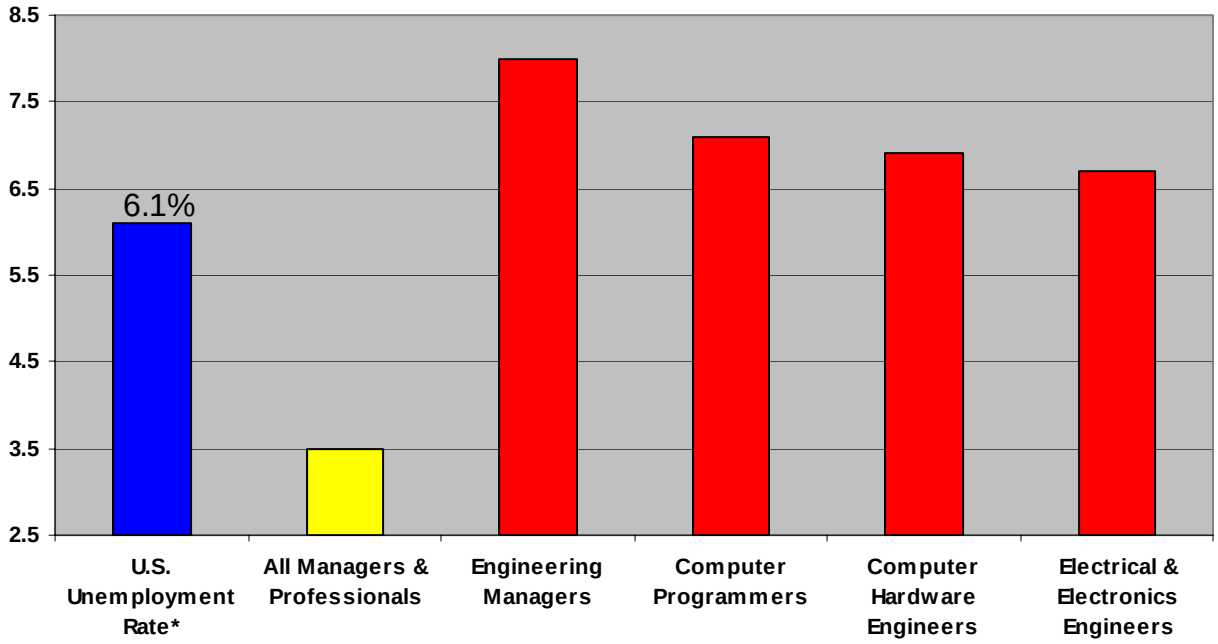
The Institute of Electrical and Electronics Engineers is a transnational technical and professional society made up of more than 382,000 individual members in 150 countries. The IEEE's primary purposes are to advance the theory and practice of electrical, electronics, computer and software engineering, improve the careers of our members and increase their ability to innovate and create wealth for the benefit of the societies in which they live and work.

IEEE-USA was established in 1973 to promote the professional careers and technology policy interests of IEEE's 235,000 U.S. members.

Seventy percent of IEEE-USA's members work for private businesses, primarily in the aerospace and defense, bio-medical technology, computers and communications, electrical and electronics equipment manufacturing and electric power industries. Thirty percent of these industry members work for firms with 500 or fewer employees. Ten percent of our members work for Federal, state and local governments. Another ten percent teach at American schools of engineering or work at non-profit research organizations. The remaining ten percent are self-employed and work as consultants to businesses and government.

Outsourcing is Contributing to High-Levels of Unemployment and Structural Displacement Within The Engineering Profession

According to the most recent data from the Bureau of Labor Statistics, electrical, electronics, and computer hardware engineers continue to face a higher unemployment rate than the general population, and over double the rate for other managers and professionals. The news for engineering managers is even worse, with an unemployment rate of 8%.



Source: U.S. Bureau of Labor Statistic, Third Quarter, 2003
** Monthly Unemployment Rate for Sept. 2003*

It's important to focus on this last statistic for just a moment. To become an engineering manager, you must have a degree in engineering, and in most cases an advanced degree. You also have to have several years of practical engineering experience to successfully lead efforts to develop cutting-edge technologies. And then, after investing the time and money needed to prepare for one of the most innovative and vital professions in the country, you are currently

more than twice as likely to be unable to find work than other American professionals. I think this gives you some idea of how bad labor markets for engineers are right now.

To put this in historical context, in the 30 plus years that the Department of Labor has been collecting statistics, the past two years are the first in which unemployment rates for electrical, electronics and computer engineers are higher than the unemployment rate for all workers . For comparison purposes, the unemployment rate for electrical engineers was 1.2% in 2000, less than one-fifth its current level. And throughout the 1980s, at a time when unemployment rates for all workers got as high as 9.5%, electrical and electronics engineering unemployment rates never rose above 2%.

The Trend Toward Off-shoring of Engineering Jobs Represents a Fundamental Structural Adjustment, Not a Short Term Business Cycle Phenomenon.

In testimony before this committee earlier this year, I described the many problems associated with the movement of America's high-skill jobs to lower cost, overseas locations. And while overseas outsourcing cannot be blamed for all of the unemployment facing American engineers, it certainly is a major contributing factor.

A spate of recent studies from forecasting firms predict the number of jobs that will move overseas. I am reluctant to quote any one of them because they are all speculative in nature. However, it is clear from all of these studies that there is a growing consensus that offshore outsourcing of high-skill jobs will not only continue but accelerate and expand to include an ever widening cluster of occupations.

Forecasters agree that offshore outsourcing is on the rise because the practice is becoming institutionalized at so many companies. A new job title - "Global Supply Coordinator" – has even been created to describe a new cadre of managers who are responsible for figuring out how best to move work to overseas locations and how best to manage it when it gets there.

Many American engineers are becoming increasingly concerned about their job security. A small but increasing number report their companies are closing electronics design facilities in the U.S. and moving them to lower cost offshore locations. In some cases, American engineers have even been given the choice of being laid off or moving to another country, but at a much lower level of compensation than they had been earning in the United States.

Let me also emphasize that these are not low-level jobs that no Americans would want, but high-skill/high value added positions filled by some of our best and brightest engineers and computer scientists. Companies are not only moving production overseas, but engineering design and research and development as well.

Is Offshore Outsourcing Good or Bad?

Unfortunately, policy discussions about offshore outsourcing are often couched in terms of "free-trade" versus "protectionism". This is the wrong way to think about the issue.

Many people who advocate free-trade, including myself, understand that there are consequences to geographic shifts in production and services due to trade. The conventional expectation is that in the aggregate these shifts will result in greater efficiency and therefore increase the overall wealth of both trading partners. But the resulting benefits and the burden of associated costs are not distributed equitably among the citizens of either country. A number of citizens will carry a disproportionate share of costs, and often lose their jobs in the process. This is why many economists recommend that governments should assist citizens who are carrying a disproportionate share of the costs. But even the limited help available through the U.S. Trade Adjustment Assistance program doesn't currently apply to employees in the services sector.

Unfortunately, the offshore outsourcing of high-skill jobs has a number of characteristics that make it hard to compensate those who are adversely affected:

1. It is often difficult to directly identify workers who have been displaced, many of whom may not even know that they have been displaced because of trade. Companies are increasingly reluctant to reveal their plans for fear of the bad publicity that will result. Many workers are too intimidated to publicly identify themselves. They fear losing the severance package offered by their employers or that they will be blacklisted if they speak out.

2. Even if we could identify those who have been adversely affected by trade, it is not clear how we should compensate them. Do we offer subsidized re-training in some other profession?

3. Re-training and other types of assistance programs are very difficult to implement. Is it realistic to expect an electrical engineer with 20 years of experience to spend four years studying to become a nurse?

In sum, we think it is entirely misleading to describe offshore outsourcing as a "Win-Win" proposition for America and other countries, as free trade advocates so often do. The burden should be placed on those advocates to demonstrate how workers who have been adversely affected will be compensated and helped to become productive citizens once again.

These advocates assume, as part of their argument, that displaced American workers will be re-deployed. Instead of assuming, we should ensure that such workers are redeployed in equally high skill and highly paid positions.

Technological Innovation, Economic Growth and National Security Implications

America's economic competitiveness and national security is increasingly dependent on the superiority of our technology and technical know-how. There is a widespread belief -- almost a blind faith among policy makers -- that as communications, semiconductor manufacturing, electronic devices and other key technological capabilities are off-loaded to other countries, the United States will just move on to the next field, to the next "big thing".

Many observers, including government officials, argue that the next "big thing" is going to be nanotechnology, and that nanotechnology is going to generate enormous economic benefits and create many new jobs. We can only speculate on the impact that nanotechnology will have on the economy and jobs, and hope that it will be significant as some predict. However, we should not be complacent. As a nation, we are not alone in our pursuit of the frontiers of nanotechnology. China is currently the second largest producer of technical papers in nanoscience and nanotechnology, even ahead of Japan. With great cost advantages in addition to this advanced technical knowledge, we should anticipate that China will compete strongly for new nanotechnology jobs and manufacturing opportunities.

U.S. manufacturing has also been hit hard by offshore outsourcing. This has important and serious consequences for U.S. engineers and for technological innovation, economic growth and national security. Some wonder whether manufacturing matters very much since it only accounts for about 15% of the Gross Domestic Product. However, from a technological innovation point of view, manufacturing matters greatly. Nearly 48% of American engineers work in the manufacturing sector. The manufacturing sector also accounts for 62% of all research and development (R&D) in the U.S. The prevailing management approach is to locate R&D as close to manufacturing production as possible. As manufacturing moves overseas, it is inevitable that both engineering work and R&D will follow.

High-Tech Guest Worker Visas Facilitate Off-Shoring

The H-1B visa program is designed to allow companies to hire foreign workers when American workers cannot be found with the necessary skills. The L-1 visa program was designed to allow companies to transfer workers with management roles or highly specialized knowledge from one branch of their company, located outside of the U.S., to an American facility. Both programs are being used in ways not intended by Congress. It is not just an issue of displacing U.S. high-tech workers with H-1B and L-1 foreign workers with similar skills and at lower wages, the H-1B and L-1 programs are actually facilitating the export of U.S. jobs and innovation.

Through these programs, enterprising foreign workers are brought into the U.S. where they are trained by some of the best companies in the world and gain valuable experience and business contacts in their field. Then many of them go home to establish or work for new entrepreneurial businesses that compete in the U.S. market. Former H-1B and L-1 employees have significantly enhanced the competitiveness of India's IT services industry, for example. Moreover, as confirmed in a recent study by Hal Salzman of the Center for Industrial Competitiveness at the University of Massachusetts, H-1B workers are being hired specifically to help offshore companies liaison contracts within the U.S.

Response to Andrew Grove's Recommendations

In closing, I would like to briefly comment on the proposals presented by Intel Chairman Andrew Grove at the Global Tech Summit earlier this month. In his talk, Grove called for:

- More government spending on education, so that the United States continues to produce the best and brightest workers in the world.

- Incentives and immigration reform to help the high-tech industry secure talented workers, wherever they can find them.

Everyone agrees that investments in education are important to all segments of society in order to improve technical literacy and enhance skills. But it should be noted that increased education spending to expand the pool of highly skilled U.S. scientists and engineers will fail if there are not rewarding and reasonably secure career opportunities in those fields upon graduation. In that regard, I would note the observations of noted demographer Dr. Michael Teitelbaum in a recent article (Do We Need More Scientists?) for *The Public Interest* (No. 153, Fall 2003):

> Instead of raising the false flag of shortages, those concerned about the future of science and engineering in the United States should encourage objective appraisals of current career paths, as well as innovations in higher and continuing education designed for more agile adjustments to inevitable changes in these dynamic fields. The overarching goal should be to find ways to make these careers attractive relative to the alternatives, for this is the only sustainable way to ensure a supply commensurate with the United States' science and engineering needs.

IEEE-USA would be pleased to work with industry in support of balanced reforms of the permanent immigration system. But so far the only immigration reform that industry has advanced is to expand the H-1b visa caps and exceptions, while also working to limit both H-1B and L-1 visa workforce protections. H-1B and L-1 visas may help employers find low-cost workers, but they do so in a manner that is unfair to both American and foreign workers. They are, in effect, a subsidy promoting the movement of American jobs overseas. Moreover, they undermine efforts to entice American students to embark on careers in engineering or the sciences by dimming the students' chances of finding and retaining technical jobs whose rewards are commensurate with opportunities in other employment sectors.

Policy Recommendations

1. The federal government must begin regularly tracking the volume and nature of the jobs that are moving offshore.
2. Companies should be required to give adequate notice of their intentions to move work offshore so that the displaced employees can make appropriate plans to minimize the financial hardship, and government support agencies can prepare to provide the necessary transition assistance.

3. Congress should rethink how U.S. workforce assistance programs can be designed to help displaced high-tech workers become productive again. We are in a new era of work and lifelong learning, and new and more flexible methods are needed to provide meaningful assistance.
4. Congress should strengthen H-1B and L-1 workforce protections and their enforcement to ensure that the programs serve their respective purposes without adversely affecting employment opportunities for U.S. high-tech workers.
5. Fundamental changes in U.S. immigration law, such as those incorporated in the recent Chile and Singapore Free Trade Agreements, should be made by Congress, and not by trade negotiators.
6. Congress should take affirmative steps to ensure that the U.S. retains the domestic human resource and production capabilities needed to develop and utilize technologies deemed critical to U.S. national and homeland security.
7. As globalization narrows U.S. technology leadership, the Department of Defense and other government security agencies will need to enhance their ability to acquire and assimilate foreign technologies.
8. The U.S. needs a coordinated national strategy designed to sustain its technological leadership and promote job creation in response to the concerted strategies being used by other countries to attract U.S. industries and jobs.