



What if we close our doors to the world's best and brightest?



What if federal support for basic research declines?



What if companies move their design centers, research facilities, and manufacturing operations outside the United States?



What if our education system fails to produce graduates who can compete with the best in the world?

What if this  
were our reality?

If we fail to act,  
it will be.

ONE MILLION HIGHLY EDUCATED  
PROFESSIONALS ARE CURRENTLY WAITING  
FOR GREEN CARDS. YET ONLY 120,000  
CARDS ARE AVAILABLE ANNUALLY.

U.S. employers hire highly educated, foreign-born engineers, scientists, researchers, medical professionals, and teachers—working professionals who keep America on the cutting edge of knowledge and innovation and contribute to our economic prosperity. Massive backlogs in employment-based Green Cards leave some professionals waiting up to six years or more for an opportunity to work in America. These are talented professionals our foreign competitors are eager to hire.

ON DECEMBER 31, 2007,  
CONGRESS ALLOWED THE R&D TAX CREDIT  
TO EXPIRE, YET ANOTHER SETBACK TO  
U.S. COMPETITIVENESS.

When Congress originally passed the Research & Development Tax Credit in 1981, the United States put into place one of the most effective R&D tax-incentive programs in the world. Since then, as Congress approved a series of short-term extensions, global competitors have offered generous incentives in hopes of luring U.S. companies. The United States now ranks 17th of the 30 countries in the Organization for Economic Co-operation and Development in offering R&D tax credits.

IN 2007, MICROSOFT OPENED  
A SOFTWARE DEVELOPMENT CENTER IN  
VANCOUVER, CANADA, IN PART TO GAIN  
ACCESS TO PRIZED FOREIGN TALENT.

Microsoft noted that its greatest asset is smart, talented, highly skilled people. By locating its new software development center in Vancouver, Canada, Microsoft was able to recruit and retain highly skilled people affected by immigration issues in the United States.

## 65% OF DOCTORAL CANDIDATES IN SCIENCE AND ENGINEERING IN U.S. UNIVERSITIES ARE FOREIGN BORN.

World-class research is not possible without having an available supply of world-class scientists. Having an ample and reliable supply of such scientists requires an education system that produces graduates who can compete with the best in the world. It also means immigration policies that keep our doors open to the best and the brightest from all over the world are crucial.

The opportunity  
for action is now.

American innovation leadership and competitiveness are at stake.

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**“AMERICANS WILL ALWAYS DO THE RIGHT THING—  
AFTER THEY HAVE EXHAUSTED ALL THE ALTERNATIVES.”**

Winston S. Churchill

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**“OUR LEADERS HAVE DEBATED THE ALTERNATIVES. THEY KNOW  
WHAT THEY MUST DO TO ENSURE AMERICA’S COMPETITIVENESS.  
IT IS TIME FOR THEM TO ACT.”**

George M. Scalise, SIA President

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## LETTER FROM THE PRESIDENT

There is an old adage that from small beginnings, great things grow.

Barely more than 60 years ago, in December 1947, three brilliant scientists working at the Bell Laboratories in New Jersey created a small device—the first solid-state transistor—that laid the foundation for a great industry. We are indebted to William Shockley, John Bardeen, and Walter Brattain for launching a revolution that continues to unfold to this day.

In short order we will observe the 50th anniversaries of two other significant milestones: Jack Kilby's integrated circuit in 1958 followed quickly by Robert Noyce's planar integrated circuit the following year.

In 2007, worldwide sales of integrated circuits for the first time surpassed a quarter of a trillion dollars with total sales of \$255.6 billion. Sales grew for the sixth consecutive year. U.S. producers' market share held steady at approximately 46 percent. Market share is an extremely important metric of global competitiveness as microelectronics has become a truly global industry. Semiconductor sales to the North American market continue to decline and currently account for less than 17 percent of worldwide sales in the face of an ongoing migration of electronics manufacturing operations to Asia.

In 2006 (the latest year for which data are available), the semiconductor industry continued to be America's second-largest exporting industry—both in total exports (\$52 billion) and net exports (\$25 billion). According to the Bureau of Economic Analysis and the Census Bureau, the U.S. semiconductor industry ranks just below the auto industry in total exports and just below civilian aircraft in net exports.

Industry revenue figures, impressive as they are, tend to mask the growing pervasiveness and economic contributions of semiconductors. Advances in microchip technology continue to drive higher productivity by making the tools of production faster, smaller, and cheaper. The most dramatic example of this is the personal computer, which continues to proliferate around the world. The typical desktop PC system of 2007 was at least 100 times more powerful than the typical system of 1997—but cost only about one-third as much: \$630 in 2007 compared to \$1,833 in 1997. Rapidly declining

semiconductor prices coupled with increases in performance and functionality have combined to provide consumers with greatly increased computing power at lower prices resulting in higher productivity.

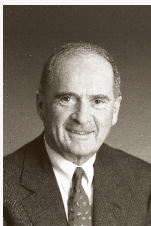
Leadership in technology has paid huge dividends to the U.S. economy and to American citizens. American workers are the most productive in the world, thanks in large measure to rapid deployment of the tools of information technology. Consequently, our citizens enjoy a high and steadily improving standard of living. Technology leadership has driven advances in medical science and health care, and is also the foundation of our national security.

For the past several years, SIA has placed top priority on taking actions to secure our continued leadership in semiconductor technology. We have put our energies, efforts, and a significant amount of resources behind what we refer to as the "Three Pillars of Innovation": maintaining leadership in basic research, strengthening our ability to attract and retain the best and brightest minds in the world, and leveling the playing field for investment in facilities for design, research and development, and manufacturing.

Over the past three years, working with numerous other industry associations and coalitions, we have succeeded in creating a remarkable national consensus on the importance of enhancing the competitiveness of the U.S. high-tech sector. Regrettably, this consensus has not yet been translated into action on our major legislative initiatives.

Conventional wisdom says that it is difficult to enact major legislation in presidential election years. Our industry has grown and prospered for 60 years by shattering conventional wisdom. We must once again do so by persuading our political leaders to take action on these critical issues.

We are deeply indebted to the members of SIA for their continued support and active involvement in support of our initiatives.



*George M. Scalise*

GEORGE M. SCALISE, PRESIDENT  
February 7, 2008

# Opening doors to all of America's best and brightest

Globalization has increased competition for talent. European countries plus China and India are making a bid to attract foreign nationals educated at American universities. We must open the doors to these highly educated professionals.

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**"TO BE COMPETITIVE IN THE GLOBAL ECONOMY, U.S. COMPANIES  
DEPEND ON SPECIALIZED TALENT COMING OUT OF U.S. GRADUATE  
SCHOOLS. THESE SCIENTISTS AND ENGINEERS ARE OFTEN FOREIGN  
BORN, AS MORE THAN HALF OF U.S. ENGINEERING MASTER'S  
STUDENTS AND PH.D. RECIPIENTS ARE INTERNATIONAL STUDENTS.  
YET AMERICA SHUTS THE DOOR ON MANY OF THESE HIGHLY  
EDUCATED GRADUATES, FORCING THEM TO LOOK ABROAD FOR  
OPPORTUNITIES—AND OUR COMPETITORS ARE CAPITALIZING  
ON OUR FAILED POLICIES."**

Craig Barrett, Chairman of Intel Corporation

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**For much of the past century, America has been the world’s leading economic, military, and political leader. In no small measure our leadership is a result of our preeminence as a technological innovator—being first in the application of mathematics and science to invent devices, machines, and processes that have transformed our daily lives.**

The invention of the transistor 60 years ago in the United States secured America’s position as the world leader in technological innovation, producing revolutionary changes in national security and defense, transportation, health care, communications, manufacturing, agriculture, recreation, and entertainment, as well as countless other activities we engage in on a daily basis. The transistor is the basic building block of microelectronics. A state-of-the-art integrated circuit contains billions of transistors on a tiny sliver of silicon. These devices lie at the heart of the technological revolution that is still under way.

The transistor’s invention was not an accident or a random event. It was created by the synergy of a solid bedrock of research, a favorable environment for investment, and a ready supply of world-class talent.

#### **AMERICA CHALLENGED**

For more than a generation, U.S. technological preeminence was uncontested. America was simply the place to be for mathematicians, scientists, engineers, or anyone interested in research or technology—the application of science for practical purposes.

Now our leadership, our way of life, and ultimately, our national security are being challenged. Other countries are sponsoring quality research, offering a favorable climate with generous incentives for investment and competing for the same world-class talent that we need to maintain our preeminent position.

Between 1983 and 2006, the number of science and engineering jobs in the United States doubled, from 4 million to 8 million. That opportunity continues. The U.S. Department of Labor forecast projects a 15 percent increase in all U.S. jobs between 2002 and 2012—but a 26 percent increase in science and engineering jobs.

### Where will the men and women come from to fill these positions?

The National Science Foundation reports that of 21.6 million persons employed in science and engineering jobs in the United States in 2003, 3.4 million—16 percent—were foreign born. Almost two-thirds of them were naturalized citizens.

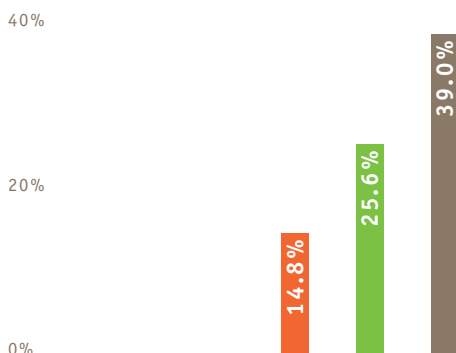
High-tech companies have become an essential sector of American prosperity. The semiconductor industry alone employs 232,000 people in the United States in well-paying jobs and generates revenue of more than \$118 billion annually.

Our need for highly educated foreign talent is growing. Fifty years ago, responding in part to the challenge of the Soviet Union's space program, highly educated, well-qualified Americans emerged from our colleges and universities to take those jobs. Their talent was supplemented by the best and the brightest from around the world, who came here to study and work. Many elected to stay, and the United States benefited from their effort.

## RAPID GROWTH FORECAST FOR TECHNICAL JOBS

Percentage Change, 2002–2012

- All occupations
- All science & engineering occupations
- Mathematical/  
computer scientists

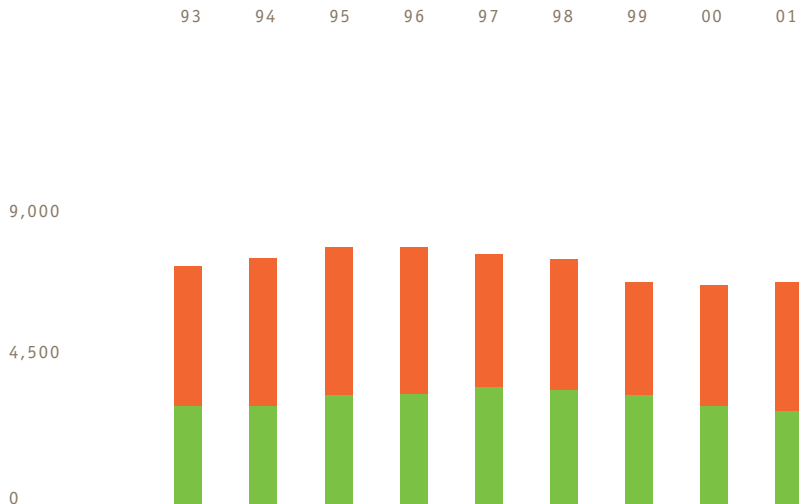


In a number of key technical fields, such as science, technology, engineering, and mathematics, the total number of graduates with advanced degrees has not kept pace with demand. This demand is projected to increase in the coming years, as the chart above shows.<sup>1</sup>

<sup>1</sup> CompeteAmerica and U.S. Department of Labor, Office of Occupational Statistics and Employment Projections

## DOCTORAL DEGREES FROM U.S. UNIVERSITIES IN ENGINEERING, MATHEMATICS, AND COMPUTER SCIENCES

- Foreign nationals
- U.S. citizens



A majority of advanced degrees awarded by U.S. universities in areas of study such as engineering, mathematics, and computer sciences are to foreign nationals. According to the National Science Board, current trends suggest that if left unchecked, the number of U.S. citizens qualified for science and engineering jobs will be level “at best.”<sup>1</sup>

<sup>1</sup> CompeteAmerica and the National Science Foundation, *Science & Engineering Indicators* – 2004

More recently, circumstances have changed. Although the demand for qualified talent in mathematics, science, and engineering has remained strong and even grown, the number of young Americans interested in these jobs has not kept pace. In 2006, 51 percent of all master's degrees in electronics and electronic engineering granted by U.S. universities were awarded to foreign nationals—71 percent of all Ph.D. recipients in those fields were foreign students studying in the United States. Those numbers reflect a trend of more than a decade. What was once a luxury has become a vital necessity. Given the continuing and growing demand, we have found ourselves increasingly reliant on qualified talent from abroad.

Until recently, despite concern about our growing dependency on foreign talent, attracting that talent was not a serious problem. America was still the place to be.

#### THE GLOBAL ECONOMY

Globalization has increased competition for that talent. European countries, China, and India are making a bid for foreign nationals—often educated on U.S. campuses—to work there.

Paradoxically, as competition for highly educated foreign nationals has increased, the United States has made it more difficult for them to take jobs here—even if they received the education and skills they have in this country.

One million highly educated foreign professionals, sponsored by U.S. companies, are currently waiting for permanent work visas—Green Cards—so that they can work here legally. Green Card applicants typically wait five years or more to receive their work visas. By law, only 120,000 Green Cards are issued annually by the U.S. government.

To keep workers here legally, employers apply for temporary H1-B visas, issued to highly educated foreign nationals with special skills. In 2003, the U.S. Congress reduced from 195,000 to 65,000 the number of H1-B visas issued. The demand for those visas is so great that for the past several years the allotment has been exhausted the first day the visas are made available. More recently, Congress provided an exemption for 20,000 foreign students who are here after receiving an advanced degree from a U.S. university. Those visas are also exhausted on day one of their availability.

The result is that thousands of talented foreign nationals who have received advanced degrees in mathematics, science, and engineering from U.S. universities—often subsidized by U.S. taxpayers—are being denied the opportunity to apply that education, to contribute their talent, and to work here.

**They are wanted elsewhere, however.**

The European Union (EU) is considering a Blue Card program that would grant renewable two-year visas to highly educated non-Europeans. Processing time from application to receiving the visa would be one to three months. China, India, and Japan also are competing for the same talent.

A U.S. company unable to get visas for foreign workers must either lose that talent or move the workplace outside the United States. When Microsoft was unable to obtain visas for foreign workers it needed at its Redmond, Washington, campus, it set up a facility across the border in Vancouver, Canada. Other companies use the same solution, often on more distant continents.

## BLUE VS. GREEN

### EU BLUE CARD

**Designed to reduce skills shortage:**

All highly educated non-Europeans will be able to apply for a renewable, two-year visa.

**Targeted at U.S. students:**

Foreign-born graduates of world-leading U.S. colleges and universities will be heavily recruited to “go Blue.”

**Easy and fast process:**

Application process will take 1 to 3 months.

### U.S. GREEN CARD

**Demand exceeds supply:**

U.S. employers do not have enough Green Cards to keep highly educated, foreign-born talent innovating here in the United States.

**Outdated:**

Annual Green Card allocations for highly educated professionals have been the same since 1990, before many innovative high-tech and biotech companies existed.

**Broken process:**

Tens of thousands of highly educated professionals are forced to wait 5 to 10 years for a Green Card.

By making a simple and dramatic change in immigration policy with its proposed new Blue Card, the EU served notice that it is serious about competing with the United States for the world’s brightest and most innovative minds. Meanwhile, outdated visa policies in the United States are slamming the door on highly educated foreign-born professionals—even those who earn master’s degrees and Ph.D.s from U.S. universities.<sup>1</sup>

<sup>1</sup> CompeteAmerica

Allowing highly educated foreigners to work here enables U.S. businesses to keep research facilities in the United States. Keeping research here means creating related jobs and industry, growing both the local and national economy. Increasing the size of knowledge-intensive industry creates well-paying jobs that benefit everyone.

Leadership is not bestowed; it is won by hard work, by cultivating and maintaining the conditions that foster it. For the United States to remain not only preeminent but also competitive, the climate for innovation must be maintained and improved. We must not just keep pace with but surpass our competitors.

The challenges confronting U.S. science and technology are well known: the relative decline of American students in mathematics and science compared to students in other industrialized countries, the decline in government support for basic scientific research, and the failure of the government to make permanent a tax credit for money spent on research and development.

The semiconductor industry recognizes the responsibility it has to cultivate domestic talent in science, engineering, and mathematics. SIA member companies have begun working more intensely to improve student achievement in grades K-12, contributing more than \$350 million between 2001 and 2006. More than 400,000 teachers and 8 million students have been reached by these programs.

The semiconductor industry provides more than \$100 million annually to support research by U.S. universities and invests \$15 billion in R&D for commercialization of products based on advances in technology.

## What about government?

A year ago, the White House and congressional leadership gave us reason to believe that federal support for basic scientific research would be doubled over a 10-year period. **The 2008 budget** failed to meet this commitment.

We had hoped that the Research & Development Tax Credit would be increased and made permanent. **This did not happen.**

We reasonably expected fundamental immigration reform to be enacted. **It was not.**

**In addition to honoring commitments already made, our political leadership can begin to reverse the erosion of America's preeminence in technological innovation by taking four steps:**

- Raise the employment-based immigrant visa cap and include an exemption for foreign professionals with advanced degrees in science, technology, engineering, and mathematics (STEM) from U.S. universities.
- Create a new foreign student visa category to allow STEM bachelor's or higher degree holders who have a job offer to transition directly from student visas to Green Cards.
- Extend postcurricular optional practical training for foreign students from 12 months to 24 months to allow them to more easily go from temporary to permanent resident status.
- Exempt spouses and children of certain employment-based professionals from the employment-based visa cap.

## THE BEST AND THE BRIGHTEST

Over the past 15 years, **immigrants have started U.S. public companies worth more than \$500 billion** in capitalization and added significant value to the U.S. economy.

According to the Kauffmann Foundation,<sup>1</sup> **foreign nationals and foreign residents contributed to more than half of the international patents** filed by a number of large, multinational companies, including:

72% Qualcomm  
65% Merck & Co.  
64% General Electric  
63% Siemens  
60% Cisco

**In the last 15 years, immigrants have started 25 percent of U.S. venture-backed public companies** including major U.S. employers such as eBay, Google, Intel, Sun Microsystems, and Yahoo!.<sup>1,2</sup>

The \$1,500 H-1B fee paid by employers has funded nearly **\$2 billion in U.S. student scholarships and worker retraining programs.**<sup>1,3</sup>

<sup>1</sup> CompeteAmerica

<sup>2</sup> National Venture Capital Association

<sup>3</sup> National Foundation for American Policy

Reforming our immigration policy to reduce the backlog of Green Card applications is ultimately in our national interest. History has demonstrated the value of immigrants to our country. Our economy, our culture, and our society have been enriched by immigrants: theoretical physicist Albert Einstein, nuclear physicist Enrico Fermi, former Secretary of State Henry Kissinger, Google co-founder Sergey Brin, former Intel CEO Andrew Grove, Sun Microsystems co-founders Andreas von Bechtolsheim and Vinod Khosla, Yahoo! co-founder Jerry Yang, former Secretary of State Madeleine Albright, and Governor Arnold Schwarzenegger have all made significant contributions to America, along with millions of other immigrants who chose America as their home.

Ignoring our immigration crisis, letting essential positions remain empty for lack of qualified workers, driving U.S. business offshore, and subsidizing our competition by failing to retain and hire U.S.-educated foreign students fails to serve our interests or honor our traditions.

Enabling highly educated, necessary immigrants to come to America to study and work is not simply a matter of generosity. It *is* in keeping with what is finest and most generous of our tradition, but it is also a matter of profound self-interest. They fill a critical need. We profit from their contribution. Their effort helps to grow our economy and to create more work, more jobs, and more prosperity. If we close our doors to the world's best and brightest, or raise barriers or otherwise make them unwelcome, we will be denying not only them—but also ourselves.

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THE SEMICONDUCTOR INDUSTRY ASSOCIATION IS THE PREMIER  
TRADE ORGANIZATION REPRESENTING THE U.S. SEMICONDUCTOR  
INDUSTRY. FOUNDED IN 1977 BY FIVE MICROELECTRONICS  
INNOVATORS, SIA UNITES MORE THAN 70 COMPANIES  
RESPONSIBLE FOR MORE THAN 85 PERCENT OF SEMICONDUCTOR  
PRODUCTION IN THIS COUNTRY.

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## ABOUT SIA

Our coalition provides domestic semiconductor companies with a forum to advance the global competitiveness of the \$118 billion U.S. chip industry. Through a network of corporate CEOs and working committees, SIA shapes public policy on issues critical to the industry and provides a spectrum of services to aid members in growing their own businesses.

### **Driving Progress and Results**

Among major domestic industries, the semiconductor industry is unique. Every year, chipmakers boost performance dramatically while cutting prices, continually making high-technology goods more productive and affordable for consumers. The benefits to the U.S. economy of this “more for less” manufacturing dynamic are dramatic. Information technology, fueled by faster and cheaper chips, has reduced the U.S. inflation rate significantly and increased the nation’s productivity growth rate substantially.

With the SIA, U.S. semiconductor companies are addressing significant challenges:

- Educating and recruiting a highly skilled workforce.
- Maintaining the nation’s world leadership in semiconductor technology.
- Promoting fair and open trade.
- Providing safe working conditions in production facilities.
- Protecting the environment.
- Tracking and distributing statistical information on market trends.

### **Uniting an Industry of Innovators**

SIA provides every chip company—large, small, integrated, or fabless—with a powerful voice. Collectively, we continue to make tremendous progress in trade, technology, public policy, occupational safety and health, environmental concerns, industry statistics, and government procurement.

Each step forward is a tribute to the willingness of our members to commit time, people, and money to such projects. In turn, SIA member companies influence the industry agenda through their participation on committees—thereby ensuring positive outcomes on critical issues and reaping the concrete rewards of the association’s many successes.

## SIA COMMITTEES

### **Communications Committee**

This committee develops strategic communications programs that build industry awareness and encourage concerted action on critical issues.

### **Environment Committee**

This team prioritizes public policy and regulatory issues at federal, state, and local levels. It also guides the industry in matters of chemical use, global warming, tool design, energy, and recycling.

### **Environment, Safety, and Health Task Force**

The Environment, Safety, and Health (ESH) Task Force of the World Semiconductor Council supports the work of the Joint Steering Committee (JSTC) with respect to global ESH issues. Key ESH managers from member companies meet with their counterparts from Europe, Japan, Korea, and Taiwan twice a year at JSTC meetings to develop and implement cooperative, global ESH programs.

### **Fire and Building Safety Committee**

Working closely with authorities when requirements for semiconductor production facilities change, this committee ensures that the industry's needs are represented, without sacrificing the integrity of fire and building codes.

### **Joint Steering Committee**

The Joint Steering Committee (JSTC) of the World Semiconductor Council supports the ongoing work of the World Semiconductor Council, meeting three times a year. SIA member companies serve on the JSTC with their counterparts representing the semiconductor industries from Europe, Japan, Korea, and Taiwan.

### **Law Committee**

This committee advises the SIA Board and other SIA Committees on legislative and legal matters, especially on environment, safety, health, and intellectual property issues. The committee also files friend-of-the-court briefs on appellate cases of importance to the industry.

### **Public Policy Committee**

This team focuses on legislative and regulatory issues that affect the semiconductor industry—particularly export controls, taxes, intellectual property, and science policy. This committee, SIA, and member companies all work directly with members of Congress, their staff, executive branch officials, foreign governments, and trade associations.

### **Safety and Health Committee**

Safety and industrial hygiene professionals work with this group to analyze important issues that impact industry workers and surrounding communities.

### **SIA China and Japan Chapters**

This chapter provides a forum for local SIA member company representatives to discuss issues of mutual interest and to meet with government officials and domestic industry representatives. SIA also participates in a multi-association advocacy office, USITO, in Beijing. Last year, SIA registered a representative office in Beijing, China, and appointed Mr. Allen Yen as managing director.

### **Statistics Committee**

The SIA Statistics team develops statistical information about market conditions, as well as product and industry trends to help companies make better business decisions. The committee is also responsible for producing the semiannual SIA semiconductor forecast, a three-year outlook for the industry.

### **Technology Strategy Committee**

Working with the Semiconductor Research Corporation and SEMATECH, this committee defines strategies to promote and maintain our world leadership in semiconductor technology. It also formulates the industry's premier forecasting tool, the International Technology Roadmap for Semiconductors (ITRS), a 15-year outlook on key technological trends and barriers facing our industry.

### **Workforce Committee**

The Workforce Strategy Committee has four focus areas: (1) increasing the current and future supply, quality, and diversity of the high-tech workforce; (2) improving K-16 mathematics and science achievement, primarily through programs for 6th- through 12th-grade mathematics and science teachers; (3) helping our member companies understand the most important HR/workforce issues through discussion, benchmarking, and best-practice sharing; and (4) effective advocacy of public policies that impact the high-tech semiconductor workforce.

### **World Semiconductor Council**

Every year, the World Semiconductor Council brings together the industry associations of the world's leading semiconductor-producing nations to collaborate on important global policy issues.

## SIA BOARD OF DIRECTORS



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**WILLEM ROELANDTS** <sup>(1)</sup>  
Chairman of the Board  
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SIA Board Chairman

**HECTOR DE J. RUIZ** <sup>(2)</sup>  
Chairman of the Board and  
Chief Executive Officer  
Advanced Micro Devices, Incorporated  
SIA Board Vice Chairman

**JOHN P. DAANE** <sup>(3)</sup>  
Chairman of the Board,  
President, and  
Chief Executive Officer  
Altera Corporation

**RAY STATA** <sup>(4)</sup>  
Chairman of the Board  
Analog Devices, Incorporated

**RICH BEYER** <sup>(5)</sup>  
Chairman and Chief Executive Officer  
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**JOHN E. KELLY III** <sup>(6)</sup>  
Senior Vice President and  
Director of Research  
IBM Corporation

**CRAIG R. BARRETT** <sup>(7)</sup>  
Chairman of the Board  
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President, Chief Executive Officer,  
and Director  
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President and Chief Executive Officer  
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Chief Executive Officer  
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BRIAN L. HALLA <sup>(11)</sup>  
Chairman of the Board and  
Chief Executive Officer  
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Chief Operating Officer and President  
QUALCOMM CDMA Technologies

RICHARD K. TEMPLETON <sup>(13)</sup>  
Chairman of the Board, President,  
and Chief Executive Officer  
Texas Instruments Incorporated

## 2007 ROBERT N. NOYCE AWARD –

Dr. Irwin M. Jacobs and Dr. Andrew J. Viterbi



In November 2007, Dr. Irwin M. Jacobs and Dr. Andrew J. Viterbi, co-founders of Qualcomm, Inc., received the prestigious Robert N. Noyce Award, named in honor of the industry pioneer. The SIA Board cited Jacobs and Viterbi's extensive contributions to the U.S. semiconductor industry over their long and varied careers.

"Irwin Jacobs and Andrew Viterbi, working together and individually, launched a communications revolution," said SIA President George Scalise. "Dr. Viterbi formulated the 'Viterbi Algorithm,' a groundbreaking mathematical formula for eliminating signal interference that is used in all of the international standards for digital telephones, data terminals, digital satellite broadcast receivers, and deep space telemetry. Dr. Jacobs led groundbreaking research on digital wireless technology at the Massachusetts Institute of Technology. His 1965 textbook, *Principles of Communication Engineering*, remains in use today."

The award is the industry's highest honor, and it is presented annually to recognize individuals for outstanding achievement and leadership in support of the U.S. semiconductor industry. In 1990, the SIA Board of Directors created this award to honor the memory of Robert Noyce, co-founder of Intel and a scientist, engineer, and entrepreneur of world stature whose life, work, and inventions contributed immensely to the way we live, work, and play.

### Noyce Award Winners

2007	Irwin M. Jacobs	1999	Erich Bloch
2007	Andrew J. Viterbi	1998	Wilfred Corrigan
2006	James C. Morgan	1998	W. J. ("Jerry") Sanders III
2005	William P. ("Pat") Weber	1997	Charlene Barshefsky
2004	Craig R. Barrett	1996	Charles Sporck
2003	Gov. George Pataki	1995	Jack Kilby
2002	Gordon Moore*	1994	Gordon Moore
2001	Ray Stata	1993	Robert Galvin
2000	Federico Faggin	1992	Ian Ross
2000	Marcian Edward ("Ted") Hoff, Jr.	1991	Joseph Canion
2000	Stanley Mazor		

SIA MEMBERS – CHARTER MEMBERS



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Design: Methodologie

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