

Testimony by

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Thank you, Mr. Chairman, for the opportunity to testify before you today. I also want to thank Ranking Member Hall and all the members of the Committee on Science and Technology for your support for basic research and development and your commitment to improving education standards for our children.

My name is Craig Barrett and I am the former Chairman and CEO of Intel Corporation. Intel is the world's largest manufacturer of semiconductors, three-quarters of which are manufactured here in the United States. Intel employs more than 40,000 people in the United States and spends billions of dollars each year on research and development, most of which is done in the U.S.

As a leading information technology company, Intel is dependent on highly-skilled engineers, mathematicians and scientists to maintain its competitive position in the marketplace. Increasingly, however, it is difficult for companies like Intel to find the qualified American workers they need to develop new and innovative products. Our competitors around the world are investing more in their education systems and producing workers who are better prepared for the high-skilled jobs of the future.

As a country, we need to re-double our commitment to educating our children and investing in basic research that will lead to breakthrough technological developments. That is why I support and encourage your efforts to reauthorize the America Competes Act.

I am pleased to be here with you today to examine where we stand on the challenge of U.S. Competitiveness five years after the National Academy of Engineering issued its Gathering Storm report, which I had the honor to contribute to under the direction of our chair Norm Augustine.

As you know, the Gathering Storm report found that as a country we need to create high-quality jobs for Americans and develop clean, affordable and reliable energy. We made four recommendations designed to help us achieve those goals:

1. Increase America's talent pool by vastly improving K-12 science and mathematics education.
2. Sustain and strengthen the nation's traditional commitment to long-term basic research that has the potential to be transformational and to maintain the flow of new ideas that fuel the economy, provide security, and enhance the quality of life.
3. Make the United States the most attractive setting in which to study and perform research so that we can develop, recruit and retain the best and brightest students, scientists and engineers from within the United States and throughout the world.
4. Ensure that the United States is the premier place in the world to innovate; invest in downstream activities such as manufacturing and marketing; and create high-paying jobs based on innovation by such actions as modernizing the patent system, realigning tax policies to encourage innovation and ensuring affordable broadband access.

Following the issuance of this report, Congress took steps to address many of these recommendations by adopting the America Competes Act of 2007. That legislation called for a doubling of the research budgets for key agencies like the National Aeronautics and Space Administration (NASA), the National Institute of Standards and Technology (NIST), the National Oceanic and Atmospheric Administration (NOAA), The National Science Foundation (NSF) and the Department of Energy (DOE). The Act also directed significant resources to educating students in the key areas of science, technology, education and mathematics.

But despite the important first steps taken in 2007, the job is not finished. That is why I commend this Committee, and the House of Representatives, for this year adopting a reauthorization of the Competes Act that builds on the initial legislation. The bill you passed would not only improve STEM education efforts to help prepare students for the highly technical jobs of the future, but would keep us on the path towards efforts to develop transformational new energy technologies. These goals are too important to be abandoned and I encourage the Senate to follow in your footsteps and pass the America Competes reauthorization before this Congress comes to an end.

The responsibility to better prepare our students for careers in the STEM fields falls not just to the government, of course, but to the private sector as well. As you may be aware, I recently accepted the challenge of serving as Chair of an important initiative called "Change the Equation." Change the Equation is a private sector effort comprised of over 100 companies from all different industry sectors and from all across the country. We aim to improve STEM education by:

1. Improving STEM teaching at all grade levels.

2. Inspiring student appreciation and excitement for STEM programs and careers.
3. Achieving a sustained commitment to improving STEM education from business leaders, government officials, STEM educators and other stakeholders through innovation, communication, collaboration and data-based decision making.

Change the Equation will work with our member companies to identify education programs that are successful and spread them to more than 100 sites across the country. We are also going to assess STEM education efforts in the 50 States by building a scorecard to measure their performance. And we are going to disseminate principles for how businesses can help to improve STEM education.

We know that STEM literacy is a business imperative for our nation's economic excellence, success and citizenship. Our collaboration will not only help students, but will revive our economy, fuel our industries, strengthen our democracy and ultimately empower our nation.

Every year reports are produced that say the same thing. We need action. A recent report projected that by 2018 there will be eight million jobs in STEM-related fields. However, the report also indicates that the next generation of employees in America will be unprepared and unqualified to take advantage of these positions.

A follow up report to Gathering Storm highlights the many challenges we still face. It found that:

- Sixty-nine percent of United States public school students in fifth through eighth grade are taught mathematics by a teacher without a degree or certificate in mathematics.
- Only four of the top ten companies receiving United States patents last year were United States companies.
- United States consumers spend significantly more on potato chips than the government devotes to energy R&D.

America has an innovation problem. And we need to solve it. The America Competes Act of 2007 took steps towards tackling this problem and the reauthorization of the Act this year would signal continued Congressional support for making the investments we must make.

But to truly benefit from America's renewed commitment to basic research, and to provide American students the STEM skills they need to keep America competitive, we need both the government and the private sector to further increase their efforts and make the hard choices required – investing in our students, in our schools, and in the creation of new job opportunities by removing barriers to innovation.

The commitment of the private sector and the support of government are both essential to ensure that American remains competitive in the global marketplace. While it is incumbent upon U.S. businesses to make smart investments in the technologies they pursue and the people they hire, it is equally important that the government adopt policies that give American industry a competitive advantage.

Finally, Mr. Chairman, as you will be retiring at the end of this Congress, I want to express my appreciation to you for your 26 years of service to our nation. You have always been one of the most passionate advocates for investment in science, basic research, STEM education and all of the keystones of innovation that are so critical to our future.

Thank you again, Mr. Chairman, for the opportunity to testify before you today. I look forward to answering any questions you may have.