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Why the America Competes Act Is Vital

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The sweeping legislation addresses critical needs by, among other things, developing a solid innovation infrastructure.

By John Ensign

Technology is an exciting tool that will either fortify the United States' position as innovative leader or suppress generations of Americans from competing in a global economy. The desired choice is obvious, but getting there is only possible if we have the right policies in place. It is vital that we enact legislation to encourage and support an unprecedented level of innovation and competitiveness.

The Senate recently passed the America Competes Act, which addresses critical education needs and promotes basic research in science, technology, engineering and mathematics. As chairman of the senate commerce subcommittee on technology, innovation and competitiveness in the last Congress, I was able to take a lead in drafting this bipartisan legislation.

The America Competes Act focuses on three primary areas of importance:
• Increasing federal investment in basic research
• Developing an innovation infrastructure and environment that encourages growth
• Fostering science, technology, engineering and mathematics talent in the United States.

Each component is a critical element to the formula for success. Without them, we risk losing our competitive edge to other nations, such as China and India, that are moving full speed ahead. The America Competes Act would almost double funding for the National Science Foundation by 2011, place the budget for the Department of Energy's Office of Science on track to double in ten years and increase support for the National Institute of Standards and Technology. I am a fiscal conservative, but the dollars we invest in basic research will come back to us in spades in terms of stimulating economic activity and helping the United States remain at the forefront of global innovation.

Our continued investment in basic research is made more essential by the actions of other

nations that are not sitting idly by waiting to see what we will do to remain competitive. Instead, they are undertaking ambitious efforts to expand their own research and development base at our expense. A recent study highlighted by the Council on Competitiveness indicates that China has surpassed the United States as the most attractive location for the world's top corporate R&D investors. As we strengthen support for federally funded basic research, we must also make sure that we are creating a 21st century innovation infrastructure by removing excessive taxation, regulatory and litigation barriers to innovation that impede entrepreneurs in the United States.

Another challenge that we must address is how to encourage more American students from elementary school through graduate school to pursue careers in science, technology, engineering and mathematics. Although estimates vary, there is no question that the increased focus in China and India on educating more of their population in these fields is cause for serious concern.

One estimate indicates that in 2004 China graduated about 350,000 engineers, computer scientists and information technologists with four-year degrees while the United States graduated about 140,000. Over the past three years both China and India have doubled their production of three- and four-year degrees in the field of engineering; in the United States, however, the production of engineers has stagnated.

This must change, and our approach must be aggressive. The America Competes Act would do this in part by expanding existing graduate research programs and strengthening NSF's STEM (science, technology, engineering and math) Talent Expansion Program. The bill strengthens the skills of thousands of math and science teachers by establishing new undergraduate and graduate training programs. The bill also authorizes competitive grants to states to promote better alignment of elementary and secondary education with the knowledge and skills needed to succeed at institutions of higher education in the 21st century.

It is vital that we focus on transforming our educational system to meet the workforce needs of tomorrow. Globalization has increased the educational needs of our students to remain competitive in the world economy. Our emphasis on quality education in science, technology, engineering and mathematics needs to start early on in a student's education. Unfortunately, the Organization for Economic Cooperation and Development released a study on education last year highlighting the fact that, while the United States invests significantly more per student on education ($83,910 cumulative expenditure per student ages 6-15) than any other country except Switzerland, students from 16 other countries performed better on average than American students in science. Sadly, our math scores were no better with nearly two dozen countries placing higher than American students.

Other countries also have more scientists and mathematicians teaching science and math. In the United States, we mostly have education majors teaching science and math. If your passion is science and math, you have a better chance of translating that passion to your students.

The University of Texas at Austin has an innovative program called “U Teach,” that takes science and math majors and teaches them to be teachers. The results have been very promising. Our country must change the way we educate science and math teachers so that we can truly inspire the next generation of Americans.

The United States has been at the forefront of innovation since our beginning as a nation, and we must fortify our position. I am encouraging my colleagues in the House and Senate to pass a final version of the America Competes Act as soon as possible so that our policies continue encouraging the competitive drive that will lead us through the 21st century.

John Ensign is a Republican senator from Nevada who serves as ranking member on the Subcommittee on Science, Technology and Innovation and is a past chairman of the Senate High Tech Task Force.