By almost any measure, U.S. research universities are consistently ranked among the best in the world. Beginning with the Morrill Act (Land Grant College Act) of 1862, federal and state policies have underscored the nation's commitment to building the finest research institutions. As such, U.S. universities have been the incubators of the nation's prosperity. E. I. du Pont de Nemours and Company, which I once headed, is a great example. One of its key products, nylon, was made possible because of a Harvard-educated polymer researcher who brought his knowledge to DuPont. Today, that kind of connection is everywhere, from high-tech Silicon Valley startups to cutting-edge East Coast biomedical facilities. The talent and knowledge produced by research universities underpin many of the finest U.S. achievements, from seeding the modern agricultural system to enabling the World Wide Web. But new challenges are putting these important national assets in danger. The National Research Council (NRC) committee that I chaired to assess the capacities of U.S. universities has now released recommendations for maintaining their role in national prosperity.*

As the United States struggles to recover from a prolonged financial crisis, government at every level has been forced to make difficult choices. Public funding for research has been flattened or cut while other nations invest more in research. U.S. universities have had to raise tuition, threatening to put college education out of reach for many. But our committee concluded that, especially in these tough times, the United States cannot afford to defer investment in research universities. If the nation is willing to renew its commitment to keeping these institutions the best in the world, they will lead the way to the next generation of scientific and technological breakthroughs that propel U.S. prosperity, just as they have in the past. It is critical to revitalize the partnership between our research universities, government, and industry.

The NRC report recommends 10 actions that the nation must take to shore up its research institutions, and all partners must play their part. For the federal government, this means providing sustainable funding for university research and graduate education within the context of increasing national R&D funding from all sources—government, private-sector, and philanthropic—to 3% of the nation's gross domestic product. While sustaining national investment in biomedical research and other key areas, Congress should increase support for research already authorized by the America COMPETES Act, thereby doubling the funds for basic research. States and businesses must also renew commitments to their home institutions, which are critical to their competitiveness in an innovation-based economy. State appropriations per enrolled student have declined by 25% or more over the past two decades. As the economy recovers, states should restore appropriations to the levels that maintain high-quality institutions. U.S. businesses, which depend on universities for technology and talent, must also provide long-term financial support and regionally build strong, enduring partnerships. The federal government should provide tax incentives for businesses to partner with universities early in the research process, and businesses should use research results to create U.S. jobs.

For research universities, we recommend that, along with government effort to reduce unnecessary regulations, investments should be made in infrastructure—particularly cyberinfrastructure—to improve productivity in administration, research, and academic programs. And to continue to attract the best students, universities must reduce attrition rates in science and engineering majors and shorten the time it takes for graduates to obtain degrees.

Such sweeping changes aren't going to happen overnight. But our children and grandchildren deserve the same opportunities that we had. History tells us that maintaining a commitment to our universities over the long haul, through good times and bad, is the best way to ensure that they will.

Universities, Key to Prosperity
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