

# *The America Competes Reauthorization Act of 2014*

## **Supporting Science and Innovation to Strengthen American Competitiveness in the 21<sup>st</sup> Century Global Economy**

In 2007, the House Committee on Science, Space, and Technology passed bipartisan, landmark legislation based on recommendations from the 2005 National Academies' report *Rising Above the Gathering Storm*. The report found that the scientific and technological building blocks critical to our economic leadership are eroding at a time when many other nations are gaining strength. The *America COMPETES Reauthorization Act of 2010*, H.R. 5116, continued the Committee's commitment to strengthen American competitiveness through sustained investments in science, innovation, and education. Unfortunately, subsequent reports from the National Academies have found that United States leadership continues to be in jeopardy, due in part to a lack of follow-through in funding these priorities in recent years, and in part to strong and growing investments overseas. Despite the nation's current budget deficits, now is not the time to be shortsighted.

The *America Competes Reauthorization Act of 2014* renews our commitment to ensure scientific and technological leadership now and long into the future by authorizing 5 percent year over year increases in funding for the National Science Foundation (NSF), the Department of Energy's (DOE) Office of Science, and the National Institute of Standards and Technology (NIST). The bill also strengthens regional economies through support for regional innovation clusters and manufacturing innovation centers, and includes authorization of the Advanced Research Projects Agency-Energy, Energy Frontier Research Centers, and Energy Innovation Hubs to help advance the U.S.'s transition to a clean energy economy and to support the growth of new sectors of the economy – and the jobs that come with them.

### ***Competes will support research by:***

- Including a comprehensive reauthorization of DOE's Office of Science, the single largest supporter of research in the physical sciences in the U.S., and keeping it on a path of sustainable growth (Title VI, Subtitle A);
- Reauthorizing NSF, which supports fundamental research and education in all the non-medical fields of science and engineering, and keeping it on a path of sustainable growth (Title III); and
- Reauthorizing NIST, which conducts research to advance the nation's technology infrastructure and support industry, and keeping it on a path of sustainable growth (Title IV).

### ***Competes will foster innovation by:***

- Reauthorizing the Regional Innovation Program, which will strengthen regional economies by fostering collaboration and communication between businesses and other entities and leveraging investments (Sec. 503);
- Reauthorizing the Advanced Research Projects Agency–Energy (ARPA-E) which is pursuing high-risk, high-reward energy technology development (Title VI, Subtitle B);
- Authorizing Energy Innovation Hubs, which are large-scale multidisciplinary collaborations that bring together leading researchers from universities, the private sector, and national laboratories to tackle targeted, significant impediments to creating and deploying new clean energy technologies. (Sec. 641);
- Reauthorizing the National Nanotechnology Initiative to ensure the United States remains a leader in the development of new technologies and products based on breakthroughs in our understanding of materials at the atomic and molecular level (Title I, Subtitle B);
- Establishing a pilot program to accelerate the commercialization of innovative technologies by leveraging Federal support for State commercialization efforts (Sec. 505);
- Strengthening the Office of Innovation and Entrepreneurship at the Department of Commerce, which will work with businesses to identify and overcome barriers to commercializing the results of research (Sec. 501); and
- Providing grants for entrepreneurship and commercialization education (Sec. 307, 642).

### ***Competes will create jobs, support manufacturers and industry by:***

- Providing innovative technology federal loan guarantees to small- and medium-sized manufacturers to help them become more efficient and stay competitive (Sec. 502);
- Ensuring that NIST's Manufacturing Extension Partnership (MEP) program better reflects the needs and challenges facing manufacturers today (Sec. 405) by:
  - Directing the MEP Centers to strengthen ties between local community colleges and area manufacturers to make sure that students have the training necessary to secure good-paying jobs in their communities;
  - Directing the MEP program to implement a comprehensive export assistance initiative to help manufacturers compete in the global marketplace;
  - Reducing the cost share requirement to 50 percent;
- Providing grants to community colleges for the development and implementation of innovative advanced manufacturing education courses and degree programs (Sec. 324);
- Providing small and medium-sized manufacturers with vouchers to acquire R&D or innovation expertise to increase their competitiveness (Sec. 504);
- Creating a network of industry-led manufacturing centers that will accelerate the development and commercialization of manufacturing technologies and processes (Sec. 404);
- Improving technology transfer tools for DOE-funded researchers and DOE National Labs (Sec. 642-644);
- Creating a pilot program to promote innovative technologies and practices used by local governments to increase energy efficiency, increase distributed electricity generation, and modernize the grid (Sec. 645);
- Providing DOE with more flexible authority to quickly hire top scientific, engineering, and professional personnel to meet special project needs (Sec. 647).

### ***Competes will improve STEM education and ensure a prepared workforce by:***

- Strengthening the role of the science and mission agencies in guiding and participating in implementation of a Federal Strategic Plan for STEM Education and ensuring that stakeholder groups have input into significant decisions regarding implementation (Sec.202);
- Strengthening Federal STEM education programs and research at all levels of education by:
  - Developing grand challenges to help focus Federal education research (Sec. 203);
  - Establishing an ARPA-ED to accelerate R&D on educational technologies (Sec. 204);
  - Examining the role that arts and design (STEAM) can play in improving STEM learning (Sec. 206);
  - Strengthening the role of NSF in informal STEM education (Sec. 327);
  - Updating NSF's Math and Science Partnerships Program to ensure that it covers all areas of STEM, including computer science (Sec. 325);
  - Providing grants to increase the number and quality of students receiving undergraduate degrees in STEM, including at community colleges (Sec. 323); and
  - Ensuring that Federal programs provide graduate students with opportunities to develop the full set of skills required to succeed in diverse STEM careers (Sec. 322).
- Increasing participation by women and minorities in STEM fields to strengthen and diversify the STEM workforce by:
  - Ensuring that smaller institutions, including minority-serving institutions, are integrated more fully into research partnerships with research universities (Sec. 306);
  - Promoting data-driven research on the participation and trajectories of women and underrepresented minorities in STEM so that policy makers and institutions can design the most effective policies and practices to reduce barriers (Sec. 214, 216, 218);
  - Providing grants to implement or expand research-based practices targeted specifically to increasing the recruitment and retention of minority students and faculty (Sec. 220, 221);
  - Developing consistent federal policies for recipients of federal research awards who have caregiving responsibilities (Sec. 216); and
  - Promulgating best practices to minimize the effects of implicit bias in the review of federal research grants and enhance the recruitment and retention of women and minorities in academic and government STEM research careers (Sec. 215, 217).