

**Calendar No. 687**

111TH CONGRESS }  
2d Session }

SENATE

{ REPORT  
111-363 }

AMERICA COMPETES REAUTHORIZATION  
ACT OF 2010

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R E P O R T

OF THE

COMMITTEE ON COMMERCE, SCIENCE, AND  
TRANSPORTATION

ON

S. 3605



DECEMBER 10, 2010.—Ordered to be printed

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SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ONE HUNDRED ELEVENTH CONGRESS

SECOND SESSION

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### AMERICA COMPETES REAUTHORIZATION ACT OF 2010

DECEMBER 10, 2010.—Ordered to be printed

Mr. ROCKEFELLER, from the Committee on Commerce, Science, and Transportation, submitted the following

### R E P O R T

[To accompany S. 3605]

The Committee on Commerce, Science, and Transportation, to which was referred the bill (S. 3605) to invest in innovation through research and development, to improve the competitiveness of the United States, and for other purposes, having considered the same, reports favorably thereon with an amendment (in the nature of a substitute) and recommends that the bill (as amended) do pass.

#### PURPOSE OF THE BILL

The purpose of the America COMPETES Reauthorization Act of 2010 is to increase American competitiveness through investments in research and development, strengthen science, technology, engineering, and mathematics education, and develop research infrastructure.

#### BACKGROUND AND NEEDS

The America COMPETES (Creating Opportunities to Meaningfully Promote Excellence In Technology, Education, and Science) Act of 2007 (P.L. 110-69) was a response to concerns that the nation's ability to compete in the global economy would be hindered by, among other things, an insufficient investment in research and development (R&D) and science, technology, engineering, and mathematics (STEM) education. These concerns, and specific recommendations to address them, were detailed in a 2005 National Academies' study that produced the report, *Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Economic Future*. The report was authored by a nonpartisan com-

mittee of business leaders, university presidents, and prominent scholars, and suggested actions in four broad areas: K-12 science and math education; science and engineering higher education; science and engineering research; and incentives for innovation. The America COMPETES Act also addressed concerns detailed in President Bush's American Competitiveness Initiative, a plan to strengthen American science education and basic research, improve our technological enterprise, and create a sufficient high-technology workforce.

The America COMPETES Act focused on increasing funding for R&D and improving STEM education to prepare an adequate science and engineering workforce. The Act authorized funding increases for the National Science Foundation (NSF), National Institute of Standards and Technology (NIST), and Department of Energy (DOE) Office of Science from FY 2008 through FY 2010 at a rate that, if sustained, would double these budgets over seven years. In addition, the Act established several new programs, including early career and new investigator grants for researchers; a new Advanced Research Projects Agency-Energy in DOE to sponsor transformational energy technology research projects; and scholarships to recruit new K-12 STEM teachers to simultaneously earn STEM degrees and gain teacher certification.

Unless the nation makes significant improvements in STEM education and basic research, the troubling trends identified in *Rising Above the Gathering Storm* will be difficult to reverse. Norm Augustine, chair of the *Rising Above the Gathering Storm* committee ("*Gathering Storm* committee"), published a follow-up essay in 2007 to revisit the proposals laid out in the original report. The essay, "Is America Falling Off the Flat Earth?" and a subsequent National Academies report, "Rising Above the Gathering Storm: Two Years Later," both argue that urgent action is still needed to guarantee American prosperity in the face of increasing global competition, especially in the areas of K-12 science and math education and funding for basic research. The reports called for the President and Congress to fully fund the education and basic research programs authorized in the America COMPETES Act; however, appropriated levels never met the authorized levels in the original Act.

Most recently, the members of the *Gathering Storm* committee released a new report—*Rising Above the Gathering Storm, Revisited: Rapidly Approaching Category 5*—to provide an update of progress since the original 2005 report. They found that, while significant progress has been made over the past five years, the overall outlook for our nation in STEM education, competitiveness, and high quality job creation has worsened. The report states that improving America's global competitive position is a long term goal that will take years to decades to accomplish. A recent review of the America COMPETES Act by the U.S. Government Accountability Office (GAO) agreed "it is too early to evaluate programs long-term effectiveness." Other factors cited in the updated report for the continued competitiveness decline include both the economic downturn and aggressive R&D investments made by other countries.

Current recommendations of the *Gathering Storm* committee echo the committee's initial findings: improve STEM education and double the Federal investment in basic research. Programs author-

ized in the original America COMPETES Act have only recently been initiated, and much of the necessary funding was provided by the American Recovery and Reinvestment Act (P.L. 111–5). To build on and sustain the initial effort, the *Gathering Storm* committee calls for the America COMPETES Act to be reauthorized, and to institutionalize the funding and oversight of the *Gathering Storm* recommendations.

The reported bill would focus on three primary areas of importance to improving American innovation and competitiveness: (1) increase science and research investments, (2) strengthen STEM education, and (3) develop research infrastructure.

#### SUMMARY OF PROVISIONS

The bill would provide an authorization of appropriations for NSF and NIST for fiscal years 2011 through 2013. The legislation would build upon the activities initiated in the America COMPETES Act of 2007 by continuing to increase investments in basic science and research. It would also support programs aimed at assisting American manufacturers, such as the Hollings Manufacturing Extension Partnership and the Technology Innovation Program, and would create a loan guarantee program, the goal of which is to support innovation in manufacturing. It would also encourage the agencies to transfer their technological advances to the private sector, and where appropriate, to leverage research and education investments into competitive gains.

The bill would augment the nation's pipeline of STEM professionals by strengthening educational opportunities in STEM at all levels. The bill would direct the Office of Science and Technology Policy (OSTP) to coordinate STEM education across the Federal government with the goal of reinforcing programs that demonstrate effectiveness. It would also support research and internship opportunities for high school and undergraduate students, increase the number of graduate fellowships supported by NSF, and reinforce a role for the National Aeronautics and Space Administration (NASA) and the National Oceanic and Atmospheric Administration (NOAA) to inspire and educate the future STEM workforce.

The bill would create an Office of Innovation and Entrepreneurship to try to foster innovation and the commercialization of new technologies, products, processes, and services. It would also require the development of a national innovation and competitiveness strategy to augment the efforts of Federal, State, and local governments, institutions of higher education, and the private sector. The bill would also support the development of regional innovation strategies, including regional innovation clusters and research parks.

#### LEGISLATIVE HISTORY

On April 22, 2010, Representative Bart Gordon introduced H.R. 5116, the America COMPETES Reauthorization Act of 2010, which was ordered to be reported as amended from the House Committee on Science and Technology on April 28, 2010. The bill was considered on the House floor on May 12 and 13, 2010, and the House voted to recommit the bill to the Committee on Science and Technology with instructions.

On May 18, 2010, Representative Gordon reintroduced an amended bill as H.R. 5325 and it was considered under suspension of the rules on May 19, 2010, but failed to receive the necessary two-thirds vote (261-148).

H.R. 5116 was again considered on the House floor on May 28, 2010, and passed on a recorded vote of 262-150. Upon receipt by the Senate, the bill was referred to the Senate Committee on Commerce, Science, and Transportation.

The Committee held three hearings to consider elements of the reauthorization of the America COMPETES Act. The first hearing was held on March 10, 2010, to consider the reauthorization in the context of the President's FY 2011 R&D budget proposal. The Committee heard testimony from the heads of several government agencies, including the Director of the OSTP, the Director of NSF, the Director of NIST, and the Chief Technologist at NASA. The second hearing was held on May 6, 2010, and examined how STEM education should be applied to develop a science and engineering workforce and drive technological innovation and economic growth. The Committee heard testimony from experts working in STEM areas outside the Federal government. The third hearing was held on June 22, 2010, and considered the Federal government's role in fostering innovation throughout the economy.

Chairman Rockefeller introduced S. 3605, the America COMPETES Reauthorization Act of 2010, on July 15, 2010. The legislation was referred to the Committee on Commerce, Science, and Transportation. On July 26, 2010, the Committee met in open executive session and, by a unanimous voice vote, ordered S. 3605 reported favorably with an amendment in the nature of a substitute.

#### ESTIMATED COSTS

In compliance with subsection (a)(3) of paragraph 11 of rule XXVI of the Standing Rules of the Senate, the Committee states that, in its opinion, it is necessary to dispense with the requirements of paragraphs (1) and (2) of that subsection in order to expedite the business of the Senate.

#### REGULATORY IMPACT STATEMENT

In accordance with paragraph 11(b) of rule XXVI of the Standing Rules of the Senate, the Committee provides the following evaluation of the regulatory impact of the legislation, as reported:

#### NUMBER OF PERSONS COVERED

The bill would authorize appropriations for NSF and NIST for FY 2011 through FY 2013 and establish new loan guarantee programs and a grant program at the Department of Commerce (DOC) for various innovative technologies and programs. The bill would provide Federal agencies with the authority to award prizes competitively to stimulate innovation that has the potential to advance the mission of the respective agency. Any participating individual or entity would be subject to any rules promulgated by the head of the agency conducting the competition. The interagency committee that would be established by section 102 of the bill is tasked with identifying and reducing regulatory barriers that inhibit U.S. manufacturing.

## ECONOMIC IMPACT

S. 3605 is not expected to have an adverse impact on the nation's economy.

## PRIVACY

The bill would have little, if any, impact on the personal privacy of individuals.

## PAPERWORK

The Committee does not anticipate a major increase in the paperwork burdens for individuals or businesses; however, there would be application and reporting requirements for entities participating in the grant and loan programs established by the bill. There would also be a number of reports required of OSTP, GAO, NSF, and DOC.

## CONGRESSIONALLY DIRECTED SPENDING

In compliance with paragraph 4(b) of rule XLIV of the Standing Rules of the Senate, the Committee provides the following identification of congressionally directed spending items contained in the bill, as reported:

## SECTION-BY-SECTION ANALYSIS

*Section 1. Short title; table of contents*

This section would title the Act as the "America COMPETES Reauthorization Act of 2010." This section would also provide a Table of Contents for the legislation.

*Section 2. Definitions*

Section 2 would define the term Director in titles I and V, and the term STEM.

## TITLE I—OFFICE OF SCIENCE AND TECHNOLOGY POLICY

*Section 101. Coordination of Federal STEM Education*

This section would require the Director of the OSTP to establish a committee under the National Science and Technology Council (NSTC) that has responsibility for coordinating Federal programs and activities in support of STEM education. This section would direct the newly established committee to develop a STEM education strategic plan, and update and submit the plan to Congress every five years. This section would also require the committee to establish, periodically update, and maintain an inventory of federally sponsored STEM education programs and activities, including documentation of assessments of the effectiveness of such programs and activities and rates of participation by women, underrepresented minorities, and persons in rural areas. This section would require the Director to report annually to Congress on the STEM education strategic plan.

*Section 102. Coordination of advanced manufacturing research and development*

This section would require the Director of OSTP to designate a committee under the NSTC to establish goals and coordinate Federal programs and activities in advanced manufacturing R&D. The committee should facilitate the implementation and commercialization of advances in manufacturing developed through university research. The committee would report a strategic plan to Congress within 1 year after enactment, and update the plan every 5 years.

*Section 103. Interagency public access committee*

This section would require the Director of OSTP to establish a working group under the NSTC to coordinate Federal science agency research and policies related to the dissemination and long-term stewardship of the results of federally supported unclassified research, including digital data and peer-reviewed scholarly publications. This work shall build upon current OSTP efforts in this area. The working group would be directed to take into consideration input from non-Federal stakeholders to maximize the benefit of federally supported research.

The National Technical Information Service (NTIS) maintains a permanent repository of unclassified technical reports from Federal agencies (15 USC 3704b-2). The Committee recognizes that in an electronic world, virtually every Federal office has its own web site and communicates directly with the public. At the same time, the Committee is concerned that valuable scientific and technical information may be lost if it is not systematically provided to organizations charged with the long-term management of information, such as NTIS. Accordingly, the Committee urges the working group to explore agency practices with respect to their legal obligations to cooperate with agencies such as NTIS and the National Archives and Records Administration.

*Section 104. Federal scientific collections*

This section would require the OSTP, in consultation with relevant Federal agencies and non-Federal stakeholders, to develop policies for the management and use of Federal scientific collections, including policies for the disposal of collections, and to create an online clearinghouse for information on the contents of and access to Federal scientific collections.

*Section 105. Prize competitions*

This section would implement the recommendations of the National Academy of Sciences' 2007 report on Innovation Inducement Prizes by amending the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3701 et seq.) to authorize Federal agencies to conduct prize competitions to stimulate innovation that advances the mission of a Federal agency.

TITLE II—NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

*Section 201. NASA's contribution to innovation and competitiveness*

This section would affirm the sense of Congress that NASA's focus on technology development enhances mission capabilities

while encouraging the transfer of technology into the private sector.

*Section 202. NASA's contribution to education*

This section would provide the sense of Congress that NASA is uniquely positioned to inspire and educate students in STEM. This section would direct NASA to develop educational programs, including augmenting research based programs to increase student participation in STEM, increasing curriculum resources for use in STEM education, and creating professional development programs to engage STEM educators and further NASA's mission. The Committee notes that NASA should utilize all available resources to achieve the education program goals outlined in this section through such programs as the Experimental Program to Stimulate Competitive Research, the Minority University Research and Education Program, and the National Space Grant College and Fellowship Program, and seek additional resources to expand relevant activities in future requests for budget authority and appropriations.

*Section 203. International Space Station's contribution to national competitiveness enhancement*

This section would require NASA to evaluate and potentially expand its interagency contributions to STEM education and the Nation's innovation and competitiveness. The Administrator would be required to report to Congress within 120 days after enactment on International Space Station (ISS) activities that contribute to STEM education and enhance innovation and competitiveness, including the identification of any additional authorities or resources necessary to maximize ISS utilization to advance American technological excellence.

*Section 204. Definitions*

This section would define two terms used in this title.

TITLE III—NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

*Section 301. Oceanic and atmospheric research and development program*

This section would direct NOAA to contribute to ocean and atmospheric science innovation and competitiveness and would require NOAA to provide a report to Congress within 12 months with a strategy for enhancing transformational research. This section would also convey authorities to NOAA that would facilitate participation in partnerships and agreements.

*Section 302. Oceanic and atmospheric science education programs*

This section would define the goal of NOAA's education programs by amending Section 4002 of the America COMPETES Act (33 U.S.C. 893a). NOAA's principal competitive environmental education grant programs are the Bay Watershed Education and Training (B-WET) Program and the Environmental Literacy Grants program. The Committee notes that the B-WET Program was cited specifically by the National Research Council as a "model" program and noted for its rigorous program-wide assessment of performance and impact among students and teachers.

*Section 303. Workforce study*

This section would require a National Academy of Sciences report on the scientific workforce in the areas of oceanic and atmospheric R&D to be transmitted to Congress within 18 months.

## TITLE IV—NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY

*Section 401. Short title*

This section would allow this title to be cited as the “National Institute of Standards and Technology Authorization Act of 2010.”

*Section 402. Authorization of appropriations*

This section would authorize appropriations for NIST for FY 2011, 2012, and 2013.

*Section 403. Under Secretary of Commerce for Standards and Technology*

This section would create the position of the Under Secretary of Commerce for Standards and Technology by amending Section 4 of the National Institute of Standards and Technology Act. The current Director of NIST would become the Under Secretary until a successor is appointed.

*Section 404. Manufacturing Extension Partnership*

This section would instruct Regional Centers for the Transfer of Manufacturing Technology to provide community colleges with information about job skills needed in manufacturing, create an Innovative Services Initiative, the goal of which is to assist manufacturers in reducing energy usage and waste, and accelerate commercialization of new technologies after market demand analysis. This section would require the Comptroller General to submit to Congress a report within 90 days of enactment regarding the cost share structures in place and the effect of the cost share structures on individual Centers and the overall program. After such report is submitted, the Secretary is directed to alter the cost structure provided that such changes are consistent with the report. The cost share may not be increased above existing requirements.

*Section 405. Emergency communication and tracking technologies research initiative*

This section would establish a research initiative to support the development of emergency communication and tracking technologies for use in locating trapped individuals in confined spaces, such as underground mines and other shielded environments, and would require the Director to report to Congress within 18 months on recommendations for improvement and research priorities.

*Section 406. Broadening participation*

This section would amend Section 18 of the National Institute of Standards and Technology Act (15 U.S.C. 278g-1) to instruct the Director to consider the goal of promoting the participation of underrepresented minorities in research fellowships and post-doctoral fellowships, and would instruct the Director to give special consideration for teacher development to teachers from high-need schools. The Departments and Agencies under the Act should give

consideration to partnering with nonprofit organizations that administer graduate fellowships with an emphasis on women and underrepresented minorities.

*Section 407. NIST fellowships*

This section would amend Section 19 of the National Institute of Standards and Technology Act (15 U.S.C. 278g) to allow NIST to conduct post-doctoral programs with entities other than the National Academy of Sciences, remove the cap for funds used for research fellowships, and eliminate the Commerce, Science, and Technology Fellowship Program.

*Section 408. Green manufacturing and construction*

This section would establish a green manufacturing and construction initiative to promote sustainability in manufacturing and improve energy performance, service life, and air quality in buildings.

*Section 409. Definitions*

This section would define two terms used in this title.

TITLE V—SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS  
SUPPORT PROGRAMS

SUBTITLE A—NATIONAL SCIENCE FOUNDATION

*Section 501. Short title*

This section would allow this title to be cited as the “National Science Foundation Authorization Act of 2010.”

*Section 502. Definitions*

This section would define four terms used in this subtitle.

*Section 503. Authorization of appropriations*

This section would authorize appropriations for the National Science Foundation for FY 2011, 2012, and 2013.

*Section 504. National Science Board administrative amendments*

This section would eliminate the cap on the number of professional staff for the National Science Board, change the due date of the Board’s biennial Science and Engineering Indicators report, modify the scope of reports the Board may submit to the President and Congress, and clarify audit requirements for Board adherence to the Sunshine Act.

*Section 505. National Center for Science and Engineering statistics*

This section would establish the Foundation’s Division of Science Resource Statistics as the National Center for Science and Engineering Statistics and codify its function as the central Federal clearinghouse for objective data on the scientific and engineering enterprise and the state of STEM education.

*Section 506. National Science Foundation manufacturing research and education*

This section would establish a grant program intended to support transformative advances in manufacturing technologies and to

strengthen scientific and technical education in advanced manufacturing.

*Section 507. National Science Board report on mid-scale instrumentation*

This section would require the Board to evaluate the need for mid-scale research instrumentation (instrumentation that falls between the Major Research Instrumentation program and the Major Research Equipment and Facilities Construction program), and provide recommendations regarding how the Foundation can best address those needs.

*Section 508. Partnerships for innovation*

This section would require the Director of NSF to carry out a program in support of partnerships between IHEs and private sector entities to promote innovation and is intended to increase the economic and social impact of the research. The Director would be required to give priority to partnerships that involve one of the top 100 research institutions and either a minority-serving institution, a primarily undergraduate institution, or a community college.

*Section 509. Sustainable chemistry basic research*

This section would establish a Green Chemistry Basic Research grant program to support sustainable chemistry research.

*Section 510. Graduate student support*

This section would require the Director to increase or decrease funding for the Integrative Graduate Education and Research Traineeship (IGERT) program at the same rate as the Graduate Research Fellowship (GRF) program, require that at least half of the total funds for IGERT and GRF come from the Research and Related Activities account, and require the Director to increase the current cost of education allowance for awards made through the GRF program by \$1,500.

The Committee is concerned that the IGERT program has been flat-funded for the past two years. The IGERT program has funded trainees at over 100 universities in 41 states, plus the District of Columbia and Puerto Rico, since the program was initiated in 1998. Given its innovative approach to graduate research and education and the broad geographic distribution of awards, including the Experimental Program to Stimulate Competitive Research (EPSCoR) jurisdictions, the Committee would like to see its funding increase at least at the same rate as any increase for the GRF program, but not exceed the rate of any necessary funding decrease for the GRF program.

*Section 511. Robert Noyce teacher scholarship program*

This section would amend Section 10A(h)(1) of the National Science Foundation Authorization Act of 2002 (42 U.S.C. 1862n-1a(h)(1)) to remove the requirement that the service obligation of scholarship recipients be performed in a high-need local education agency, and instead provide a 1 year reduction of the service obligation for scholarship recipients who choose to perform their service in a high-need local education agency. This section would require the Director to maintain a clearinghouse of information on

teaching opportunities available in high-need local education agencies and lower the required amount of institutional matching for Noyce grants under Section 10A (master teachers and STEM professionals) from 50 to 30 percent.

*Section 512. Undergraduate broadening participation program*

This section would direct the NSF to continue to support the Historically Black Colleges and Universities Undergraduate Program, the Louis Stokes Alliances for Minority Participation program, and the Tribal Colleges and Universities Program as separate programs.

*Section 513. Research experiences for high school students*

This section would allow specialized STEM high schools conducting research to participate in major data collection initiatives, when included as part of an NSF research proposal.

*Section 514. Research experiences for undergraduates*

This section would require the Director to award grants to IHEs, nonprofit organizations, or consortia of such institutions and organizations, for sites designated to provide research experiences for 10 or more undergraduate STEM students. This section would require that research grant recipients planning to include undergraduate students request support for the students as part of the research proposal itself rather than as a supplement to the research proposal.

*Section 515. STEM industry internship programs*

This section would authorize the Director to award grants to IHEs to establish partnerships with local and regional private sector entities for the purpose of helping undergraduate students connect internship experiences with STEM coursework.

*Section 516. Cyber-enabled learning for national challenges*

This section would require the Director to identify ways to use cyber-enabled learning to improve the STEM workforce.

*Section 517. Experimental Program to Stimulate Competitive Research*

This section would encourage geographical distribution of NSF research funding by requiring that funding for the EPSCoR increase as NSF funding increases. The Director would submit an annual report to Congress detailing the activities and progress of the program. NSF would chair the EPSCoR Interagency Coordinating Committee, which would coordinate EPSCoR and Federal EPSCoR-like programs to increase research infrastructure in EPSCoR states. The committee would meet at least two times per year and submit an annual report to Congress. The section would require a National Academies study to measure the effectiveness of these programs in developing infrastructure for education and research in EPSCoR states and provide recommendations to improve the programs.

*Section 518. Sense of the Senate regarding the Science, Technology, Engineering, and Mathematics Talent Expansion Program*

This section would express the sense of the Senate that the Science, Technology, Engineering, and Mathematics Talent Expansion Program effectively increases STEM degrees by providing mentoring and tutoring and should continue to be supported.

*Section 519. Sense of the Senate regarding the National Science Foundation's contributions to basic research and education*

This section would express the sense of the Senate that the NSF is a vital agency to support American science, technology, engineering, and mathematics basic research and education.

*Section 520. Grantee reports on commercialization strategy and results*

This section would require all IHEs that receive NSF grants to submit an annual report detailing their commercialization strategy and results for NSF-funded research. The NSF would post the reports on a public website.

*Section 521. Study to develop improved impact-on-society metrics*

This section would require the Director to contract with the National Academy of Sciences to initiate a study that details metrics for measuring the potential impact on society of NSF-funded research, including commercialization of Federally-funded research. Within 1 year after initiation of the study, the Director would be required to submit to Congress a report setting forth the Director's findings, conclusions, and recommendations.

*Section 522. NSF grants in support of sponsored post-doctoral fellowship programs*

This section would require the Director to provide grants to IHEs in support of post-graduate research with potential commercial applications, matching to some degree any private sector grant given in support of such research.

*Section 523. Collaboration in planning for stewardship of large-scale facilities*

This section would affirm the sense of Congress regarding the need for collaboration between Federal agencies, especially NSF and DOE, when planning the construction of large-scale research facilities.

*Section 524. Cloud computing research enhancement*

This section would allow the Director to support national research in areas affected by the use of cloud computing. This section would also require the Director to begin a review of cloud computing research challenges within 60 days of enactment, allowing for unsolicited proposals. This section would then require the Director to provide an annual report to Congress and the public at large through the NSF website with recommendations for cloud computing research for no less than five consecutive years. This section would also require the Director to collaborate with NIST and industry in the development of cloud computing standards.

*Section 525. Tribal colleges and universities program*

This section would require the Director to continue support for a program to award merit-based grants to improve undergraduate STEM education at tribal colleges and universities.

SUBTITLE B—STEM-TRAINING GRANT PROGRAM

*Section 551. Purpose*

This section would set out the purpose of the STEM-training grant program.

*Section 552. Program requirements*

This section would require the Director of NSF to replicate and implement undergraduate programs designed to increase the number of elementary and secondary teachers with baccalaureate degrees in STEM and concurrent teacher certification. The Director would be directed to collaborate with relevant education departments to establish such programs, require field-based courses by partnering with local secondary and elementary schools, maintain a student to teacher ratio no greater than 100 to 1, include scientifically-based instruction methods, limit STEM teaching courses to those participating in such programs, and require a final evaluation of teaching proficiency at the end of such programs.

*Section 553. Grant program*

This section would require the Director to establish and set certain standards for a grant program to support the implementation of programs described in Section 552, including requiring participating universities to provide matching funds from non-Federal sources, and direct the Director to take such steps as necessary to ensure grants are equitably distributed across all regions of the United States.

*Section 554. Grant oversight and administration*

This section would allow the Director to execute a contract with a qualified organization, such as the National Math and Science Initiative, for oversight and fiscal management of the grant program described in Section 552. If such a contract were executed, the contractor would be required to submit an annual report to the Director regarding the efficacy of the grant program. Such a report would then be required to be submitted annually to the Senate Committee on Commerce, Science, and Transportation, the Senate Committee on Health, Education, Labor, and Pensions, the House of Representatives Committee on Science and Technology, and the House of Representatives Committee on Education and Labor.

*Section 555. Definitions*

This section would define five terms used in this subtitle.

*Section 556. Authorization of appropriations*

This section would authorize appropriations for the Director to carry out this subtitle for FYs 2011, 2012, and 2013.

## TITLE VI—INNOVATION

*Section 601. Office of Innovation and Entrepreneurship*

This section would require the Secretary of Commerce to establish an Office of Innovation and Entrepreneurship to foster innovation and the commercialization of new technologies, products, processes, and services, and specify the duties to be carried out by the Office.

*Section 602. Federal loan guarantees for innovative technologies in manufacturing*

This section would amend the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3701 et seq.) to require the Secretary of Commerce to establish a program to provide loan guarantees to small- and medium-sized manufacturers and define eligible projects as those that reequip, expand, or establish manufacturing facilities in the United States to use an innovative technology or an innovative process in manufacturing, or to manufacture an innovative technology product or an integral component of such product. The loan guarantee would be limited to an amount equal to 80 percent of the loan, with specific limitations set on the authority to make loan guarantees and the Secretary acting to ensure that activities carried out under the program are coordinated with, and do not duplicate the efforts of, other loan guarantee programs within the Federal Government.

*Section 603. Regional innovation program*

This section would further amend the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3701 et seq.) to establish a regional innovation program to encourage and support the development of regional innovation strategies, including regional innovation clusters; authorize the Secretary to award regional innovation cluster grants that require a 50 percent matching requirements for grant recipients; establish a regional innovation research and information program to determine and distribute best practices and metrics to assess performance; and require a National Academies report within 4 years that evaluates the program and provides a recommendation regarding whether the program should be continued.

*Section 604. Study on economic competitiveness and innovative capacity of United States and development of national economic competitiveness strategy*

This section would require the Secretary of Commerce to complete a comprehensive study of the economic competitiveness and innovative capacity of the United States within 1 year after enactment of this Act. The Secretary would be required to conduct the study in consultation with the National Economic Council of the Office of Policy Development, other appropriate Federal agencies, and the Innovation Advisory Board, which would also be established by this section. Within 1 year of the completion of the study, the Secretary would be required to develop a national 10-year strategy to strengthen the innovation and competitive capacity of the United States, complete with recommended legislation, Federal agency implementation, annual goals and milestones, and a plan

for monitoring progress. The Secretary would then be required to submit the strategy upon completion as a report to Congress and the President.

*Section 605. Promoting use of high-end computing simulation and modeling by small- and medium-sized manufacturers*

This section would affirm the sense of Congress regarding the benefits of high-end computing simulation and modeling in improving advanced manufacturing technologies at large-scale and Federal research entities and the need to deploy such modeling to small- and medium-sized manufacturers. This section would then require the Secretary of Commerce, in consultation with the Secretary of Energy and the Director of the Office of Science and Technology Policy, to carry out a study of the barriers to the use of high-end computing modeling by small- and medium-sized manufacturers in the United States. This section would also require the submission of a report to Congress within 270 days after the commencement of the study, with recommendations for legislative or administrative action. This section would also authorize any demonstration or pilot programs deemed necessary for the completion of the study.

TITLE VII—NIST GREEN JOBS

*Section 701. Short title*

This section would allow this title to be cited as the “NIST Grants for Energy Efficiency, New Job Opportunities, and Business Solutions Act of 2010,” or the “NIST GREEN JOBS Act of 2010.”

*Section 702. Findings*

This section would define a finding of the Congress regarding the value of the Hollings Manufacturing Extension Partnership Program throughout the United States and the need to broaden NIST’s competitiveness grant program to maximize energy savings from advanced factory-built building materials.

*Section 703. National Institute of Standards and Technology competitive grant program*

This section would amend Section 25(f)(3) of the National Institute of Standards and Technology Act (15 U.S.C. 278k(f)(3)).

TITLE VIII—GENERAL PROVISIONS

*Section 801. Government Accountability Office review*

This section would require a GAO study detailing the funding, implementation, and effectiveness of the programs authorized under this Act to be transmitted to Congress by May 31, 2013.

*Section 802. Salary restrictions*

This section would restrict funds authorized in this Act from being used to pay the salary of any individual who is convicted of possession with the intent to sell obscene matter on Federal property or the use of Federal computers for child pornography or the exploitation of minors.

*Section 803. Additional research authorities of the FCC*

This section would amend Title I of the Communications Act of 1934 (47 U.S.C. 151 et seq.) to allow additional R&D work at the Federal Communications Commission.

CHANGES IN EXISTING LAW

In compliance with paragraph 12 of rule XXVI of the Standing Rules of the Senate, changes in existing law made by the bill, as reported, are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new material is printed in italic, existing law in which no change is proposed is shown in roman):

TITLE 5. GOVERNMENT ORGANIZATION AND EMPLOYEES

PART III. EMPLOYEES

SUBPART D. PAY AND ALLOWANCES

CHAPTER 53. PAY RATES AND SYSTEMS

SUBCHAPTER II. EXECUTIVE SCHEDULE PAY RATES

**§ 5314. Positions at level III**

Level III of the Executive Schedule applies to the following positions, for which the annual rate of basic pay shall be the rate determined with respect to such level under chapter 11 of title 2, as adjusted by section 5318 of this title:

\* \* \* \* \*

Under Secretary of Commerce for Oceans and Atmosphere, the incumbent of which also serves as Administrator of the National Oceanic and Atmospheric Administration.

*Under Secretary of Commerce for Standards and Technology, who also serves as Director of the National Institute of Standards and Technology.*

Associate Attorney General.

\* \* \* \* \*

**§ 5315. Positions at level IV**

Level IV of the Executive Schedule applies to the following positions, for which the annual rate of basic pay shall be the rate determined with respect to such level under chapter 11 of title 2, as adjusted by section 5318 of this title:

\* \* \* \* \*

**[Director, National Institute of Standards and Technology, Department of Commerce.]**

\* \* \* \* \*

NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY  
ACT

**SEC. 4. UNDER SECRETARY OF COMMERCE FOR STANDARDS AND TECHNOLOGY.**

(a) *ESTABLISHMENT.*—*There shall be in the Department of Commerce an Under Secretary of Commerce for Standards and Technology (in this section referred to as the “Under Secretary”).*

(b) *APPOINTMENT.*—*The Under Secretary shall be appointed by the President by and with the advice and consent of the Senate.*

(c) *COMPENSATION.*—*The Under Secretary shall be compensated at the rate in effect for level III of the Executive Schedule under section 5314 of title 5, United States Code.*

(d) *DUTIES.*—*The Under Secretary shall serve as the Director of the Institute and shall perform such duties as required of the Director by the Secretary under this Act or by law.*

(e) *APPLICABILITY.*—*The individual serving as the Director of the Institute on the date of enactment of the National Institute of Standards and Technology Authorization Act of 2010 shall also serve as the Under Secretary until such time as a successor is appointed under subsection (b).*

**SEC. 5. DIRECTOR; POWERS AND DUTIES; REPORT; COMPENSATION.**

[15 U.S.C. 274]

【The Director shall be appointed by the President, by and with the advice and consent of the Senate.】 The Director shall report directly to the Secretary and shall have the general supervision of the Institute, its equipment, and the exercise of its functions. The Director shall make an annual report to the Secretary of Commerce. The Director may issue, when necessary, bulletins for public distribution, containing such information as may be of value to the public or facilitate the exercise of the functions of the Institute. 【The Director shall be compensated at the rate in effect for level IV of the Executive Schedule under section 5315 of title 5, United States Code. Until such time as the Director assumes office under this section, the most recent Director of the National Bureau of Standards shall serve as Director.】

\* \* \* \* \*

**SEC. 18. RESEARCH FELLOWSHIPS AND OTHER FINANCIAL ASSISTANCE TO STUDENTS AT INSTITUTES OF HIGHER EDUCATION.**

[15 U.S.C 278g–1]

(a) *IN GENERAL.*—*The Director is authorized to expend [up to 1.5 percent of the] funds appropriated for activities of the Institute in any fiscal year, as the Director may deem desirable, for awards of research fellowships and other forms of financial assistance to students at institutions of higher learning within the United States who show promise as present or future contributors to the mission of the Institute, and to United States citizens for research and technical activities on Institute programs. The selection of persons to receive such fellowships and assistance shall be made on the basis of ability and of the relevance of the proposed work to the mission and programs of the Institute.*

(b) *MANUFACTURING FELLOWSHIP PROGRAM.*—

(1) ESTABLISHMENT.—To promote the development of a robust research community working at the leading edge of manufacturing sciences, the Director shall establish a program to award—

(A) postdoctoral research fellowships at the Institute for research activities related to manufacturing sciences; and

(B) senior research fellowships to established researchers in industry or at institutions of higher education who wish to pursue studies related to the manufacturing sciences at the Institute.

(2) APPLICATIONS.—To be eligible for an award under this subsection, an individual shall submit an application to the Director at such time, in such manner, and containing such information as the Director may require.

(3) STIPEND LEVELS.—Under this subsection, the Director shall provide stipends for postdoctoral research fellowships at a level consistent with the National Institute of Standards and Technology Postdoctoral Research Fellowship Program, and senior research fellowships at levels consistent with support for a faculty member in a sabbatical position.

(c) *UNDERREPRESENTED MINORITIES.*—*In evaluating applications for fellowships under this section, the Director shall give consideration to the goal of promoting the participation of underrepresented minorities in research areas supported by the Institute.*

**SEC. 19. POST-DOCTORAL FELLOWSHIP PROGRAM.**

[15 U.S.C 278g–2]

The Institute[, in conjunction with the National Academy of Sciences,] shall establish and conduct a post-doctoral fellowship program, subject to the availability of appropriations, which shall be organized and carried out in substantially the same manner as the National Academy of Sciences/National Research Council Post-Doctoral Research Associate Program that was in effect prior to 1986, and which shall include not less than twenty nor more than 120 new fellows per fiscal year. *In evaluating applications for fellowships under this section, the Director shall give consideration to the goal of promoting the participation of underrepresented minorities in research areas supported by the Institute.*

**SEC. 19A. TEACHER SCIENCE AND TECHNOLOGY ENHANCEMENT INSTITUTE PROGRAM.**

[15 U.S.C. 278g–2a]

(a) ESTABLISHMENT.—The Director shall establish within the Institute a teacher science and technology enhancement program to provide for professional development of mathematics and science teachers of elementary, middle, and secondary schools (as those terms are defined by the Director), including providing for the improvement of those teachers with respect to the understanding of science and the impacts of science on commerce.

(b) AREAS OF FOCUS.—In carrying out the program under this section, the Director shall focus on the areas of—

- (1) scientific measurements;
- (2) tests and standards development;
- (3) industrial competitiveness and quality;
- (4) manufacturing;
- (5) technology transfer; and

(6) any other area of expertise of the Institute that the Director determines to be appropriate.

(c) PROCEDURES AND SELECTION CRITERIA.—The Director shall develop and issue procedures and selection criteria for participants in the program. *The Director shall give special consideration to an application from a teacher from a high-need school, as defined in section 200 of the Higher Education Act of 1965 (20 U.S.C. 1021).*

(d) SCHEDULING.—The program under this section shall be conducted on an annual basis during the summer months, during the period of time when a majority of elementary, middle, and secondary schools have not commenced a school year.

(e) MEANS OF ACCOMPLISHING GOALS.—The program shall provide for teachers' participation in activities at the laboratory facilities of the Institute, or shall utilize other means of accomplishing the goals of the program as determined by the Director, which may include the Internet, video conferencing and recording, and workshops and conferences.

\* \* \* \* \*

#### SEC. 25. REGIONAL CENTERS FOR THE TRANSFER OF MANUFACTURING TECHNOLOGY.

[15 U.S.C. 278k]

(a) CREATION AND SUPPORT OF CENTERS; AFFILIATIONS; MERIT REVIEW IN DETERMINING AWARDS; OBJECTIVES.—The Secretary, through the Director and, if appropriate, through other officials, shall provide assistance for the creation and support of [Regional Centers for the Transfer of Manufacturing Technology] *regional centers for the transfer of manufacturing technology* (hereafter in this Act referred to as the “Centers”). Such centers shall be affiliated with any United States-based nonprofit institution or organization, or group thereof, that applies for and is awarded financial assistance under this section in accordance with the description published by the Secretary in the Federal Register under subsection (c)(2). Individual awards shall be decided on the basis of merit review. The objective of the Centers is to enhance productivity and technological performance in United States manufacturing through—

(1) the transfer of manufacturing technology and techniques developed at the Institute to Centers and, through them, to manufacturing companies throughout the United States;

(2) the participation of individuals from industry, universities, State governments, other Federal agencies, and, when appropriate, the Institute in cooperative technology transfer activities;

(3) efforts to make new manufacturing technology and processes usable by United States-based small- and medium-sized companies;

(4) the active dissemination of scientific, engineering, technical, and management information about manufacturing to industrial firms, including small- and medium-sized manufacturing companies; [and]

(5) the utilization, when appropriate, of the expertise and capability that exists in Federal laboratories other than the [Institute.] *Institute; and*

*(6) providing to community colleges information about the job skills needed in small- and medium-sized manufacturing businesses in the regions they serve.*

\* \* \* \* \*

(c) DURATION AND AMOUNT OF SUPPORT; PROGRAM DESCRIPTIONS; APPLICATIONS; MERIT REVIEW; EVALUATIONS OF ASSISTANCE; APPLICABILITY OF PATENT LAW.—

(1) The Secretary may provide financial support to any Center created under subsection (a) for a period not to exceed six years. The Secretary may not provide to a Center more than 50 percent of the capital and annual operating and maintenance funds required to create and maintain such Center.

(2) The Secretary shall publish in the Federal Register, within 90 days after the date of the enactment of this section, a draft description of a program for establishing Centers, including—

(A) a description of the program;

(B) procedures to be followed by applicants;

(C) criteria for determining qualified applicants;

(D) criteria, including those listed under paragraph (4), for choosing recipients of financial assistance under this section from among the qualified applicants; and

(E) maximum support levels expected to be available to Centers under the program in the fourth through sixth years of assistance under this section. The Secretary shall publish a final description under this paragraph after the expiration of a 30-day comment period.

(3)(A) Any nonprofit institution, or group thereof, or consortia of nonprofit institutions, including entities existing on August 23, 1988, may submit to the Secretary an application for financial support under this subsection, in accordance with the procedures established by the Secretary and published in the Federal Register under paragraph (2).

(B) In order to receive assistance under this section, an applicant for financial assistance under subparagraph (A) shall provide adequate assurances that non-Federal assets obtained from the applicant and the applicant's partnering organizations will be used as a funding source to meet not less than 50 percent of the costs incurred for the first 3 years and an increasing share for each of the last 3 years. For purposes of the preceding sentence, the costs incurred means the costs incurred in connection with the activities undertaken to improve the management, productivity, and technological performance of small- and medium-sized manufacturing companies.

(C) In meeting the 50 percent requirement, it is anticipated that a Center will enter into agreements with other entities such as private industry, universities, and State governments to accomplish programmatic objectives and access new and existing resources that will further the impact of the Federal investment made on behalf of small- and medium-sized manufacturing companies. All non-Federal costs contributed by such entities and determined by a Center as programmatically reasonable and allocable under MEP program procedures are includable as a portion of the Center's contribution.

(D) Each applicant under subparagraph (A) shall also submit a proposal for the allocation of the legal rights associated with any invention which may result from the proposed Center's activities.

(4) The Secretary shall subject each such application to merit review. In making a decision whether to approve such application and provide financial support under this subsection, the Secretary shall consider at a minimum (A) the merits of the application, particularly those portions of the application regarding technology transfer, training and education, and adaptation of manufacturing technologies to the needs of particular industrial sectors, (B) the quality of service to be provided, (C) geographical diversity and extent of service area, and (D) the percentage of funding and amount of in-kind commitment from other sources.

(5) Each Center which receives financial assistance under this section shall be evaluated during its third year of operation by an evaluation panel appointed by the Secretary. Each such evaluation panel shall be composed of private experts, none of whom shall be connected with the involved Center, and Federal officials. An official of the Institute shall chair the panel. Each evaluation panel shall measure the involved Center's performance against the objectives specified in this section. The Secretary shall not provide funding for the fourth through the sixth years of such Center's operation unless the evaluation is positive. If the evaluation is positive, the Secretary may provide continued funding through the sixth year at declining levels. A Center that has not received a positive evaluation by the evaluation panel shall be notified by the panel of the deficiencies in its performance and shall be placed on probation for one year, after which time the panel shall re-evaluate the Center. If the Center has not addressed the deficiencies identified by the panel, or shown a significant improvement in its performance, the Director shall conduct a new competition to select an operator for the Center or may close the Center. After the sixth year, a Center may receive additional financial support under this section if it has received a positive evaluation through an independent review, under procedures established by the Institute. Such an independent review shall be required at least every two years after the sixth year of operation. Funding received for a fiscal year under this section after the sixth year of operation shall not exceed one third of the capital and annual operating and maintenance costs of the Center under the program.

(6) The provisions of chapter 18 of title 35, United States Code, shall (to the extent not inconsistent with this section) apply to the promotion of technology from research by Centers under this section except for contracts for such specific technology extension or transfer services as may be specified by statute or by the Director.

*(7) Not later than 90 days after the date of enactment of the National Institute of Standards and Technology Authorization Act of 2010, the Comptroller General shall submit to Congress a report on the cost share requirements under the program. The report shall—*

(A) discuss various cost share structures, including the cost share structure in place prior to such date of enactment, and the effect of such cost share structures on individual Centers and the overall program; and

(B) include recommendations for how best to structure the cost share requirement to provide for the long-term sustainability of the program.”.

(8) If consistent with the recommendations in the report transmitted to Congress under paragraph (7), the Secretary shall alter the cost structure requirements specified under paragraph (3)(B) and (5) provided that the modification does not increase the cost share structure in place before the date of enactment of the America COMPETES Reauthorization Act of 2010, or allow the Secretary to provide a Center more than 50 percent of the costs incurred by that Center.

\* \* \* \* \*

(e) MEP ADVISORY BOARD.—

(1) ESTABLISHMENT.—There is established within the Institute a Manufacturing Extension Partnership Advisory Board (in this subsection referred to as the “MEP Advisory Board”).

(2) MEMBERSHIP.—

(A) IN GENERAL.—The MEP Advisory Board shall consist of 10 members broadly representative of stakeholders, to be appointed by the Director. At least 2 members shall be employed by or on an advisory board for the Centers, and at least 5 other members shall be from United States small businesses in the manufacturing sector. No member shall be an employee of the Federal Government.

(B) TERM.—Except as provided in subparagraph (C) or (D), the term of office of each member of the MEP Advisory Board shall be 3 years.

(C) CLASSES.—The original members of the MEP Advisory Board shall be appointed to 3 classes. One class of 3 members shall have an initial term of 1 year, one class of 3 members shall have an initial term of 2 years, and one class of 4 members shall have an initial term of 3 years.

(D) VACANCIES.—Any member appointed to fill a vacancy occurring prior to the expiration of the term for which his predecessor was appointed shall be appointed for the remainder of such term.

(E) SERVING CONSECUTIVE TERMS.—Any person who has completed two consecutive full terms of service on the MEP Advisory Board shall thereafter be ineligible for appointment during the one-year period following the expiration of the second such term.

(3) MEETINGS.—The MEP Advisory Board shall meet not less than 2 times annually, and provide to the Director—

(A) advice on Manufacturing Extension Partnership programs, plans, and policies;

(B) assessments of the soundness of Manufacturing Extension Partnership plans and strategies; and

(C) assessments of current performance against Manufacturing Extension Partnership program plans.

[(4) FEDERAL ADVISORY COMMITTEE ACT.—In discharging its duties under this subsection, the MEP Advisory Board shall

function solely in an advisory capacity, in accordance with the Federal Advisory Committee Act.】

(4) FEDERAL ADVISORY COMMITTEE ACT APPLICABILITY.—

(A) IN GENERAL.—*In discharging its duties under this subsection, the MEP Advisory Board shall function solely in an advisory capacity, in accordance with the Federal Advisory Committee Act.*

(B) EXCEPTION.—*Section 14 of the Federal Advisory Committee Act shall not apply to the MEP Advisory Board.*

(5) REPORT.—The MEP Advisory Board shall transmit an annual report to the Secretary for transmittal to Congress within 30 days after the submission to Congress of the President's annual budget request in each year. Such report shall address the status of the program established pursuant to this section and comment on the relevant sections of the programmatic planning document and updates thereto transmitted to Congress by the Director under subsections (c) and (d) of section 23.

(f) COMPETITIVE GRANT PROGRAM.—

(1) ESTABLISHMENT.—The Director shall establish, within the Centers program under this section and section 26 of this Act, a program of competitive awards among participants described in paragraph (2) for the purposes described in paragraph (3).

(2) PARTICIPANTS.—Participants receiving awards under this subsection shall be the Centers, or a consortium of such Centers.

(3) PURPOSE.—The purpose of the program under this subsection is 【to develop】 *to add capabilities to the MEP program, including the development of projects to solve new or emerging manufacturing problems as determined by the Director, in consultation with the 【Director of the Centers program,】 Director of the Hollings MEP program, the Manufacturing Extension Partnership Advisory Board, and small and medium-sized manufacturers. One or more themes for the competition may be identified, which may vary from year to year, depending on the needs of manufacturers and the success of previous competitions. 【These themes shall be related to projects associated with manufacturing extension activities, including supply chain integration and quality management, and including the transfer of technology based on the technological needs of manufacturers and available technologies from institutions of higher education, laboratories, and other technology producing entities, or extend beyond these traditional areas.】 Centers may be reimbursed for costs incurred under the program. These themes—*

*(A) shall be related to projects designed to increase the viability both of traditional manufacturing sectors and other sectors, such as construction, that increasingly rely on manufacturing through the use of manufactured components and manufacturing techniques, including supply chain integration and quality management;*

*(B) shall be related to projects related to the transfer of technology based on the technological needs of manufacturers and available technologies from institutions of higher*

*education, laboratories, and other technology producing entities; and*

*(C) may extend beyond these traditional areas to include projects related to construction industry modernization.*

(4) APPLICATIONS.—Applications for awards under this subsection shall be submitted in such manner, at such time, and containing such information as the Director shall require, in consultation with the Manufacturing Extension Partnership Advisory Board.

[(5) SELECTION.—Awards under this subsection shall be peer reviewed and competitively awarded. The Director shall select proposals to receive awards—

[(A) that utilize innovative or collaborative approaches to solving the problem described in the competition;

[(B) that will improve the competitiveness of industries in the region in which the Center or Centers are located; and

[(C) that will contribute to the long-term economic stability of that region.]

(5) SELECTION.—

(A) IN GENERAL.—Awards under this section shall be peer reviewed and competitively awarded. The Director shall endeavor to select at least one proposal in each of the 9 statistical divisions of the United States (as designated by the Bureau of the Census). The Director shall select proposals to receive awards that will—

(i) create jobs or train newly hired employees;

(ii) promote technology transfer and commercialization of environmentally focused materials, products, and processes;

(iii) increase energy efficiency; and

(iv) improve the competitiveness of industries in the region in which the Center or Centers are located.

(B) ADDITIONAL SELECTION CRITERIA.—The Director may select proposals to receive awards that will—

(i) encourage greater cooperation and foster partnerships in the region with similar Federal, State, and locally funded programs to encourage energy efficiency and building technology; and

(ii) collect data and analyze the increasing connection between manufactured products and manufacturing techniques, the future of construction practices, and the emerging application of products from the green energy industries.

(6) PROGRAM CONTRIBUTION.—Recipients of awards under this subsection shall not be required to provide a matching contribution.

(7) DURATION.—Awards under this section shall last no longer than 3 years.

(8) ELIGIBLE PARTICIPANTS.—In addition to manufacturing firms eligible to participate in the Centers program, awards under this subsection may be used by the Centers to assist small or medium-sized construction firms. Centers may be reimbursed under the program for working with such eligible participants.

(9) *AUTHORIZATION OF APPROPRIATIONS.*—*In addition to any amounts otherwise authorized or appropriated to carry out this section, there are authorized to be appropriated to the Secretary of Commerce \$7,000,000 for each of the fiscal years 2011 through 2013 to carry out this subsection.*

\* \* \* \* \*

(g) *INNOVATIVE SERVICES INITIATIVE.*—

(1) *ESTABLISHMENT.*—*The Director shall establish, within the Centers program under this section, an innovative services initiative to assist small- and medium-sized manufacturers in—*

(A) *reducing their energy usage, greenhouse gas emissions, and environmental waste to improve profitability;*

(B) *accelerating the domestic commercialization of new product technologies, including components for renewable energy and energy efficiency systems; and*

(C) *identification of and diversification to new markets, including support for transitioning to the production of components for renewable energy and energy efficiency systems.*

(2) *MARKET DEMAND.*—*The Director may not undertake any activity to accelerate the domestic commercialization of a new product technology under this subsection unless an analysis of market demand for the new product technology has been conducted.”.*

(h) *REPORTS.*—

(1) *IN GENERAL.*—*In submitting the 3-year programmatic planning document and annual updates under section 23, the Director shall include an assessment of the Director’s governance of the program established under this section.*

(2) *CRITERIA.*—*In conducting the assessment, the Director shall use the criteria established pursuant to the Malcolm Baldrige National Quality Award under section 17(d)(1)(C) of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3711a(d)(1)(C)).*

(i) *DESIGNATION.*—

(1) *HOLLINGS MANUFACTURING EXTENSION PARTNERSHIP.*—*The program under this section shall be known as the “Hollings Manufacturing Extension Partnership”.*

(2) *HOLLINGS MANUFACTURING EXTENSION CENTERS.*—*The Regional Centers for the Transfer of Manufacturing Technology created and supported under subsection (a) shall be known as the “Hollings Manufacturing Extension Centers” (in this Act referred to as the “Centers”).*

(j) *COMMUNITY COLLEGE DEFINED.*—*In this section, the term “community college” means an institution of higher education (as defined under section 101(a) of the Higher Education Act of 1965 (20 U.S.C. 1001(a))) at which the highest degree that is predominately awarded to students is an associate’s degree.*

(k) *EVALUATION OF OBSTACLES UNIQUE TO SMALL MANUFACTURERS.*—*The Director shall—*

(1) *evaluate obstacles that are unique to small manufacturers that prevent such manufacturers from effectively competing in the global market;*

(2) *implement a comprehensive plan to train the Centers to address such obstacles; and*

*(3) facilitate improved communication between the Centers to assist such manufacturers in implementing appropriate, targeted solutions to such obstacles.*

#### CONSOLIDATED APPROPRIATIONS ACT, 2005

[15 U.S.C. 278k note]

##### INDUSTRIAL TECHNOLOGY SERVICES

For necessary expenses of the Manufacturing Extension Partnership of the National Institute of Standards and Technology, \$109,000,000, to remain available until expended: Provided, That the Secretary of Commerce shall not recompute any existing Manufacturing Extension Partnership Center prior to [2007: Provided further, That hereafter the Manufacturing Extension Partnership Program authorized under 15 U.S.C. 278k shall be renamed the Hollings Manufacturing Partnership Program and the centers established and receiving funding under 15 U.S.C. 278k paragraph (a) shall be named the Hollings Manufacturing Extension Centers.] 2007.

In addition, for necessary expenses of the Advanced Technology Program of the National Institute of Standards and Technology, \$142,300,000 to remain available until expended.

#### OMNIBUS TRADE AND COMPETITION ACT OF 1988

[15 U.S.C. 1533]

##### SEC. 5163. COMMERCE, SCIENCE, AND TECHNOLOGY FELLOWSHIP PROGRAM.

[There is established within the Department of Commerce a Commerce, Science, and Technology Fellowship Program with the stated purpose of providing a select group of employees of the executive branch of the Government with the opportunity of learning how the legislative branch and other parts of the executive branch function through work experiences of up to one year. The Secretary of Commerce shall report to the Congress within six months after the date of enactment of this Act [enacted Aug. 23, 1988] on the Department of Commerce's plans for implementing such Program by March 31, 1989.]

#### STEVENSON-WYDLER TECHNOLOGY INNOVATION ACT OF 1980

[15 U.S.C. 3701 et seq.]

\* \* \* \* \*

##### SEC. 24. PRIZE COMPETITIONS.

(a) *DEFINITIONS.*—*In this section:*

(1) *AGENCY.*—*The term "agency" means a Federal agency.*

(2) *DIRECTOR.*—*The term "Director" means the Director of the Office of Science and Technology Policy.*

(3) *FEDERAL AGENCY.*—*The term "Federal agency" has the meaning given under section 4, except that term shall not include any agency of the legislative branch of the Federal Government.*

- (4) *HEAD OF AN AGENCY.*—The term “head of an agency” means the head of a Federal agency.
- (b) *IN GENERAL.*—Each head of an agency, or the heads of multiple agencies in cooperation, may carry out a program to award prizes competitively to stimulate innovation that has the potential to advance the mission of the respective agency.
- (c) *PRIZES.*—For purposes of this section, a prize may be one or more of the following:
- (1) A point solution prize that rewards and spurs the development of solutions for a particular, well-defined problem.
  - (2) An exposition prize that helps identify and promote a broad range of ideas and practices that may not otherwise attract attention, facilitating further development of the idea or practice by third parties.
  - (3) Participation prizes that create value during and after the competition by encouraging contestants to change their behavior or develop new skills that may have beneficial effects during and after the competition.
  - (4) Such other types of prizes as each head of an agency considers appropriate to stimulate innovation that has the potential to advance the mission of the respective agency.
- (d) *TOPICS.*—In selecting topics for prize competitions, the head of an agency shall consult widely both within and outside the Federal Government, and may empanel advisory committees.
- (e) *ADVERTISING.*—The head of an agency shall widely advertise each prize competition to encourage broad participation.
- (f) *REQUIREMENTS AND REGISTRATION.*—For each prize competition, the head of an agency shall publish a notice in the Federal Register announcing—
- (1) the subject of the competition;
  - (2) the rules for being eligible to participate in the competition;
  - (3) the process for participants to register for the competition;
  - (4) the amount of the prize; and
  - (5) the basis on which a winner will be selected.
- (g) *ELIGIBILITY.*—To be eligible to win a prize under this section, an individual or entity—
- (1) shall have registered to participate in the competition under any rules promulgated by the head of an agency under subsection (f);
  - (2) shall have complied with all the requirements under this section;
  - (3) in the case of a private entity, shall be incorporated in and maintain a primary place of business in the United States, and in the case of an individual, whether participating singly or in a group, shall be a citizen or permanent resident of the United States; and
  - (4) may not be a Federal entity or Federal employee acting within the scope of their employment.
- (h) *CONSULTATION WITH FEDERAL EMPLOYEES.*—An individual or entity shall not be deemed ineligible under subsection (g) because the individual or entity used Federal facilities or consulted with Federal employees during a competition if the facilities and employees are made available to all individuals and entities participating in the competition on an equitable basis.

(i) *LIABILITY.*—(1) *IN GENERAL.*—

(A) *DEFINITION.*—*In this paragraph, the term “related entity” means a contractor or subcontractor at any tier, and a supplier, user, customer, cooperating party, grantee, investigator, or detailee.*

(B) *LIABILITY.*—*Registered participants shall be required to agree to assume any and all risks and waive claims against the Federal Government and its related entities, except in the case of willful misconduct, for any injury, death, damage, or loss of property, revenue, or profits, whether direct, indirect, or consequential, arising from their participation in a competition, whether the injury, death, damage, or loss arises through negligence or otherwise.*

(2) *INSURANCE.*—*Participants shall be required to obtain liability insurance or demonstrate financial responsibility, in amounts determined by the head of an agency, for claims by—*

(A) *a third party for death, bodily injury, or property damage, or loss resulting from an activity carried out in connection with participation in a competition, with the Federal Government named as an additional insured under the registered participant’s insurance policy and registered participants agreeing to indemnify the Federal Government against third party claims for damages arising from or related to competition activities; and*

(B) *the Federal Government for damage or loss to Government property resulting from such an activity.*

(3) *EXCEPTION.*—*The head of an agency may not require a participant to waive claims against the administering entity arising out of the unauthorized use or disclosure by the agency of the intellectual property, trade secrets, or confidential business information of the participant.*

(j) *INTELLECTUAL PROPERTY.*—

(1) *PROHIBITION ON THE GOVERNMENT ACQUIRING INTELLECTUAL PROPERTY RIGHTS.*—*The Federal Government may not gain an interest in intellectual property developed by a participant in a competition without the written consent of the participant.*

(2) *LICENSES.*—*The Federal Government may negotiate a license for the use of intellectual property developed by a participant for a competition.*

(k) *JUDGES.*—

(1) *IN GENERAL.*—*For each competition, the head of an agency, either directly or through an agreement under subsection (l), shall appoint one or more qualified judges to select the winner or winners of the prize competition on the basis described under subsection (f). Judges for each competition may include individuals from outside the agency, including from the private sector.*

(2) *RESTRICTIONS.*—*A judge may not—*

(A) *have personal or financial interests in, or be an employee, officer, director, or agent of any entity that is a registered participant in a competition; or*

(B) *have a familial or financial relationship with an individual who is a registered participant.*

(3) *GUIDELINES.*—The heads of agencies who carry out competitions under this section shall develop guidelines to ensure that the judges appointed for such competitions are fairly balanced and operate in a transparent manner.

(4) *EXEMPTION FROM FACAA.*—The Federal Advisory Committee Act (5 U.S.C. App.) shall not apply to any committee, board, commission, panel, task force, or similar entity, created solely for the purpose of judging prize competitions under this section.

(l) *ADMINISTERING THE COMPETITION.*—The head of an agency may enter into an agreement with a private, nonprofit entity to administer a prize competition, subject to the provisions of this section.

(m) *FUNDING.*—

(1) *IN GENERAL.*—Support for a prize competition under this section, including financial support for the design and administration of a prize or funds for a monetary prize purse, may consist of Federal appropriated funds and funds provided by the private sector for such cash prizes. The head of an agency may accept funds from other Federal agencies to support such competitions. The head of an agency may not give any special consideration to any private sector entity in return for a donation.

(2) *AVAILABILITY OF FUNDS.*—Notwithstanding any other provision of law, funds appropriated for prize awards under this section shall remain available until expended. No provision in this section permits obligation or payment of funds in violation of section 1341 of title 31, United States Code.

(3) *AMOUNT OF PRIZE.*—

(A) *ANNOUNCEMENT.*—No prize may be announced under subsection (f) until all the funds needed to pay out the announced amount of the prize have been appropriated or committed in writing by a private source.

(B) *INCREASE IN AMOUNT.*—The head of an agency may increase the amount of a prize after an initial announcement is made under subsection (f) only if—

(i) notice of the increase is provided in the same manner as the initial notice of the prize; and

(ii) the funds needed to pay out the announced amount of the increase have been appropriated or committed in writing by a private source.

(4) *LIMITATION ON AMOUNT.*—

(A) *NOTICE TO CONGRESS.*—No prize competition under this section may offer a prize in an amount greater than \$50,000,000 unless 30 days have elapsed after written notice has been transmitted to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science and Technology of the House of Representatives.

(B) *APPROVAL OF HEAD OF AGENCY.*—No prize competition under this section may result in the award of more than \$1,000,000 in cash prizes without the approval of the head of an agency.

(n) *GENERAL SERVICE ADMINISTRATION ASSISTANCE.*—Not later than 180 days after the date of the enactment of the America COMPETES Reauthorization Act of 2010, the General Services Administration shall provide government wide services to share best practices and assist agencies in developing guidelines for issuing prize

competitions. The General Services Administration shall develop a contract vehicle to provide agencies access to relevant products and services, including technical assistance in structuring and conducting prize competitions to take maximum benefit of the marketplace as they identify and pursue prize competitions to further the policy objectives of the Federal Government.

(o) **COMPLIANCE WITH EXISTING LAW.**—

(1) **IN GENERAL.**—The Federal Government shall not, by virtue of offering or providing a prize under this section, be responsible for compliance by registered participants in a prize competition with Federal law, including licensing, export control, and nonproliferation laws, and related regulations.

(2) **OTHER PRIZE AUTHORITY.**—Nothing in this section affects the prize authority authorized by any other provision of law.

(p) **ANNUAL REPORT.**—

(1) **IN GENERAL.**—Not later than March 1 of each year, the Director shall submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science and Technology of the House of Representatives a report on the activities carried out during the preceding fiscal year under the authority in subsection (b).

(2) **INFORMATION INCLUDED.**—The report for a fiscal year under this subsection shall include, for each prize competition under subsection (b), the following:

(A) **PROPOSED GOALS.**—A description of the proposed goals of each prize competition.

(B) **PREFERABLE METHOD.**—An analysis of why the utilization of the authority in subsection (b) was the preferable method of achieving the goals described in subparagraph (A) as opposed to other authorities available to the agency, such as contracts, grants, and cooperative agreements.

(C) **AMOUNT OF CASH PRIZES.**—The total amount of cash prizes awarded for each prize competition, including a description of amount of private funds contributed to the program, the sources of such funds, and the manner in which the amounts of cash prizes awarded and claimed were allocated among the accounts of the agency for recording as obligations and expenditures.

(D) **SOLICITATIONS AND EVALUATION OF SUBMISSIONS.**—The methods used for the solicitation and evaluation of submissions under each prize competition, together with an assessment of the effectiveness of such methods and lessons learned for future prize competitions.

(E) **RESOURCES.**—A description of the resources, including personnel and funding, used in the execution of each prize competition together with a detailed description of the activities for which such resources were used and an accounting of how funding for execution was allocated among the accounts of the agency for recording as obligations and expenditures.

(F) **RESULTS.**—A description of how each prize competition advanced the mission of the agency concerned.

**SEC. 25. OFFICE OF INNOVATION AND ENTREPRENEURSHIP.**

(a) **IN GENERAL.**—The Secretary shall establish an Office of Innovation and Entrepreneurship to foster innovation and the commer-

cialization of new technologies, products, processes, and services with the goal of promoting productivity and economic growth in the United States.

(b) *DUTIES.*—The Office of Innovation and Entrepreneurship shall be responsible for—

(1) developing policies to accelerate innovation and advance the commercialization of research and development, including federally funded research and development;

(2) identifying existing barriers to innovation and commercialization, including access to capital and other resources, and ways to overcome those barriers, particularly in States participating in the Experimental Program to Stimulate Competitive Research;

(3) providing access to relevant data, research, and technical assistance on innovation and commercialization;

(4) strengthening collaboration on and coordination of policies relating to innovation and commercialization, including those focused on the needs of small businesses and rural communities, within the Department of Commerce, between the Department of Commerce and other Federal agencies, and between the Department of Commerce and appropriate State government agencies and institutions, as appropriate; and

(5) any other duties as determined by the Secretary.

(c) *ADVISORY COMMITTEE.*—The Secretary shall establish an Advisory Council on Innovation and Entrepreneurship to provide advice to the Secretary on carrying out subsection (b).

**SEC. 26. FEDERAL LOAN GUARANTEES FOR INNOVATIVE TECHNOLOGIES IN MANUFACTURING.**

(a) *ESTABLISHMENT.*—The Secretary shall establish a program to provide loan guarantees for obligations to small- or medium-sized manufacturers for the use or production of innovative technologies.

(b) *ELIGIBLE PROJECTS.*—A loan guarantee may be made under the program only for a project that re-equips, expands, or establishes a manufacturing facility in the United States—

(1) to use an innovative technology or an innovative process in manufacturing;

(2) to manufacture an innovative technology product or an integral component of such a product; or

(3) to commercialize an innovative product, process, or idea that was developed by research funded in whole or in part by a grant from the National Science Foundation.

(c) *ELIGIBLE BORROWER.*—A loan guarantee may be made under the program only for a borrower who is a small- or medium-sized manufacturer, as determined by the Secretary under the criteria established pursuant to subsection (m).

(d) *LIMITATION ON AMOUNT.*—A loan guarantee shall not exceed an amount equal to 80 percent of the obligation, as estimated at the time at which the loan guarantee is issued.

(e) *LIMITATIONS ON LOAN GUARANTEE.*—No loan guarantee shall be made unless the Secretary determines that—

(1) there is a reasonable prospect of repayment of the principal and interest on the obligation by the borrower;

(2) the amount of the obligation (when combined with amounts available to the borrower from other sources) is sufficient to carry out the project;

- (3) *the obligation is not subordinate to other financing;*
- (4) *the obligation bears interest at a rate that does not exceed a level that the Secretary determines appropriate, taking into account the prevailing rate of interest in the private sector for similar loans and risks; and*
- (5) *the term of an obligation requires full repayment over a period not to exceed the lesser of—*
  - (A) *30 years; or*
  - (B) *90 percent of the projected useful life, as determined by the Secretary, of the physical asset to be financed by the obligation.*

(f) *DEFAULTS.—*

(1) *PAYMENT BY SECRETARY.—*

(A) *IN GENERAL.—If a borrower defaults (as defined in regulations promulgated by the Secretary and specified in the loan guarantee) on the obligation, the holder of the loan guarantee shall have the right to demand payment of the unpaid amount from the Secretary.*

(B) *PAYMENT REQUIRED.—Within such period as may be specified in the loan guarantee or related agreements, the Secretary shall pay to the holder of the loan guarantee the unpaid interest on and unpaid principal of the obligation as to which the borrower has defaulted, unless the Secretary finds that there was no default by the borrower in the payment of interest or principal or that the default has been remedied.*

(C) *FORBEARANCE.—Nothing in this subsection precludes any forbearance by the holder of the obligation for the benefit of the borrower which may be agreed upon by the parties to the obligation and approved by the Secretary.*

(2) *SUBROGATION.—*

(A) *IN GENERAL.—If the Secretary makes a payment under paragraph (1), the Secretary shall be subrogated to the rights, as specified in the loan guarantee, of the recipient of the payment or related agreements including, if appropriate, the authority (notwithstanding any other provision of law)—*

*(i) to complete, maintain, operate, lease, or otherwise dispose of any property acquired pursuant to such loan guarantee or related agreement; or*

*(ii) to permit the borrower, pursuant to an agreement with the Secretary, to continue to pursue the purposes of the project if the Secretary determines that such an agreement is in the public interest.*

(B) *SUPERIORITY OF RIGHTS.—The rights of the Secretary, with respect to any property acquired pursuant to a loan guarantee or related agreements, shall be superior to the rights of any other person with respect to the property.*

(3) *NOTIFICATION.—If the borrower defaults on an obligation, the Secretary shall notify the Attorney General of the default.*

(h) *TERMS AND CONDITIONS.—A loan guarantee under this section shall include such detailed terms and conditions as the Secretary determines appropriate—*

*(1) to protect the interests of the United States in the case of default; and*

(2) to have available all the patents and technology necessary for any person selected, including the Secretary, to complete and operate the project.

(i) *CONSULTATION.*—In establishing the terms and conditions of a loan guarantee under this section, the Secretary shall consult with the Secretary of the Treasury.

(j) *FEES.*—

(1) *IN GENERAL.*—The Secretary shall charge and collect fees for loan guarantees in amounts the Secretary determines are sufficient to cover applicable administrative expenses.

(2) *AVAILABILITY.*—Fees collected under this subsection shall—

(A) be deposited by the Secretary into the Treasury of the United States; and

(B) remain available until expended, subject to such other conditions as are contained in annual appropriations Acts.

(3) *LIMITATION.*—In charging and collecting fees under paragraph (1), the Secretary shall take into consideration the amount of the obligation.

(k) *RECORDS.*—

(1) *IN GENERAL.*—With respect to a loan guarantee under this section, the borrower, the lender, and any other appropriate party shall keep such records and other pertinent documents as the Secretary shall prescribe by regulation, including such records as the Secretary may require to facilitate an effective audit.

(2) *ACCESS.*—The Secretary and the Comptroller General of the United States, or their duly authorized representatives, shall have access to records and other pertinent documents for the purpose of conducting an audit.

(l) *FULL FAITH AND CREDIT.*—The full faith and credit of the United States is pledged to the payment of all loan guarantees issued under this section with respect to principal and interest.

(m) *REGULATIONS.*—The Secretary shall issue final regulations before making any loan guarantees under the program. The regulations shall include—

(1) criteria that the Secretary shall use to determine eligibility for loan guarantees under this section, including—

(A) whether a borrower is a small- or medium-sized manufacturer; and

(B) whether a borrower demonstrates that a market exists for the innovative technology product, or the integral component of such a product, to be manufactured, as evidenced by written statements of interest from potential purchasers;

(2) criteria that the Secretary shall use to determine the amount of any fees charged under subsection (j), including criteria related to the amount of the obligation;

(3) policies and procedures for selecting and monitoring lenders and loan performance; and

(4) any other policies, procedures, or information necessary to implement this section.

(n) *AUDIT.*—

(1) *ANNUAL INDEPENDENT AUDITS.*—The Secretary shall enter into an arrangement with an independent auditor for annual evaluations of the program under this section.

(2) *COMPTROLLER GENERAL REVIEW.*—The Comptroller General of the United States shall conduct a biennial review of the Secretary’s execution of the program under this section.

(3) *REPORT.*—The results of the independent audit under paragraph (1) and the Comptroller General’s review under paragraph (2) shall be provided directly to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate.

(o) *REPORT TO CONGRESS.*—Concurrent with the submission to Congress of the President’s annual budget request in each year after the date of enactment of the America COMPETES Reauthorization Act of 2010, the Secretary shall transmit to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate a report containing a summary of all activities carried out under this section.

(p) *COORDINATION AND NONDUPLICATION.*—To the maximum extent practicable, the Secretary shall ensure that the activities carried out under this section are coordinated with, and do not duplicate the efforts of, other loan guarantee programs within the Federal Government.

(q) *MEP CENTERS.*—The Secretary may use centers established under section 25 of the National Institute of Standards and Technology Act (15 U.S.C. 278k) to provide information about the program established under this section and to conduct outreach to potential borrowers, as appropriate.

(r) *MINIMIZING RISK.*—The Secretary shall promulgate regulations and policies to carry out this section in accordance with Office of Management and Budget Circular No. A-129, entitled “Policies for Federal Credit Programs and Non-Tax Receivables”, as in effect on the date of enactment of the America COMPETES Reauthorization Act of 2010.

(s) *SENSE OF CONGRESS.*—It is the sense of Congress that no loan guarantee shall be made under this section unless the borrower agrees to use a federally-approved electronic employment eligibility verification system to verify the employment eligibility of—

(1) all persons hired during the contract term by the borrower to perform employment duties within the United States; and

(2) all persons assigned by the borrower to perform work within the United States on the project.

(t) *DEFINITIONS.*—In this section:

(1) *COST.*—The term “cost” has the meaning given such term under section 502 of the Federal Credit Reform Act of 1990 (2 U.S.C. 661a).

(2) *INNOVATIVE PROCESS.*—The term “innovative process” means a process that is significantly improved as compared to the process in general use in the commercial marketplace in the United States at the time the loan guarantee is issued.

(3) *INNOVATIVE TECHNOLOGY.*—The term “innovative technology” means a technology that is significantly improved as compared to the technology in general use in the commercial marketplace in the United States at the time the loan guarantee is issued.

(4) *LOAN GUARANTEE.*—The term “loan guarantee” has the meaning given such term in section 502 of the Federal Credit Reform Act of 1990 (2 U.S.C. 661a). The term includes a loan guarantee commitment (as defined in section 502 of such Act (2 U.S.C. 661a)).

(5) *OBLIGATION.*—The term “obligation” means the loan or other debt obligation that is guaranteed under this section.

(6) *PROGRAM.*—The term “program” means the loan guarantee program established in subsection (a).

(u) *AUTHORIZATION OF APPROPRIATIONS.*—

(1) *COST OF LOAN GUARANTEES.*—There are authorized to be appropriated \$100,000,000 for each of fiscal years 2011 through 2015 to provide the cost of loan guarantees under this section.

(2) *PRINCIPAL AND INTEREST.*—There are authorized to be appropriated such sums as are necessary to carry out subsection (g).

**SEC. 27. REGIONAL INNOVATION PROGRAM.**

(a) *ESTABLISHMENT.*—The Secretary shall establish a regional innovation program to encourage and support the development of regional innovation strategies, including regional innovation clusters and science and research parks.

(b) *CLUSTER GRANTS.*—

(1) *IN GENERAL.*—As part of the program established under subsection (a), the Secretary may award grants on a competitive basis to eligible recipients for activities relating to the formation and development of regional innovation clusters.

(2) *PERMISSIBLE ACTIVITIES.*—Grants awarded under this subsection may be used for activities determined appropriate by the Secretary, including the following:

(A) Feasibility studies.

(B) Planning activities.

(C) Technical assistance.

(D) Developing or strengthening communication and collaboration between and among participants of a regional innovation cluster.

(E) Attracting additional participants to a regional innovation cluster.

(F) Facilitating market development of products and services developed by a regional innovation cluster, including through demonstration, deployment, technology transfer, and commercialization activities.

(G) Developing relationships between a regional innovation cluster and entities or clusters in other regions.

(H) Interacting with the public and State and local governments to meet the goals of the cluster.

(3) *ELIGIBLE RECIPIENT DEFINED.*—In this subsection, the term “eligible recipient” means—

(A) a State;

(B) an Indian tribe;

(C) a city or other political subdivision of a State;

(D) an entity that—

(i) is a nonprofit organization, an institution of higher education, a public-private partnership, a science or research park, a Federal laboratory, or an economic development organization or similar entity; and

(ii) *has an application that is supported by a State or a political subdivision of a State; or*

(E) *a consortium of any of the entities described in subparagraphs (A) through (D).*

(4) *APPLICATION.—*

(A) *IN GENERAL.—An eligible recipient shall submit an application to the Secretary at such time, in such manner, and containing such information and assurances as the Secretary may require.*

(B) *COMPONENTS.—The application shall include, at a minimum, a description of the regional innovation cluster supported by the proposed activity, including a description of—*

(i) *whether the regional innovation cluster is supported by the private sector, State and local governments, and other relevant stakeholders;*

(ii) *how the existing participants in the regional innovation cluster will encourage and solicit participation by all types of entities that might benefit from participation, including newly formed entities and those rival existing participants;*

(iii) *the extent to which the regional innovation cluster is likely to stimulate innovation and have a positive impact on regional economic growth and development;*

(iv) *whether the participants in the regional innovation cluster have access to, or contribute to, a well-trained workforce;*

(v) *whether the participants in the regional innovation cluster are capable of attracting additional funds from non-Federal sources; and*

(vi) *the likelihood that the participants in the regional innovation cluster will be able to sustain activities once grant funds under this subsection have been expended.*

(C) *SPECIAL CONSIDERATION.—The Secretary shall give special consideration to applications from regions that contain communities negatively impacted by trade.*

(5) *SPECIAL CONSIDERATION.—The Secretary shall give special consideration to an eligible recipient who agrees to collaborate with local workforce investment area boards.*

(6) *COST SHARE.—The Secretary may not provide more than 50 percent of the total cost of any activity funded under this subsection.*

(7) *USE AND APPLICATION OF RESEARCH AND INFORMATION PROGRAM.—To the maximum extent practicable, the Secretary shall ensure that activities funded under this subsection use and apply any relevant research, best practices, and metrics developed under the program established in subsection (c).*

(c) *SCIENCE AND RESEARCH PARK DEVELOPMENT GRANTS.—*

(1) *IN GENERAL.—As part of the program established under subsection (a), the Secretary may award grants for the development of feasibility studies and plans for the construction of new science parks or the renovation or expansion of existing science parks.*

(2) *LIMITATION ON AMOUNT OF GRANTS.*—*The amount of a grant awarded under this subsection may not exceed \$750,000.*

(3) *AWARD.*—

(A) *COMPETITION REQUIRED.*—*The Secretary shall award grants under this subsection pursuant to a full and open competition.*

(B) *GEOGRAPHIC DISPERSION.*—*In conducting a competitive process, the Secretary shall consider the need to avoid undue geographic concentration among any one category of States based on their predominant rural or urban character as indicated by population density.*

(C) *SELECTION CRITERIA.*—*The Secretary shall publish the criteria to be utilized in any competition for the selection of recipients of grants under this subsection, which shall include requirements relating to the—*

(i) *effect the science park will have on regional economic growth and development;*

(ii) *number of jobs to be created at the science park and the surrounding regional community each year during its first 3 years;*

(iii) *funding to be required to construct, renovate or expand the science park during its first 3 years;*

(iv) *amount and type of financing and access to capital available to the applicant;*

(v) *types of businesses and research entities expected in the science park and surrounding regional community;*

(vi) *letters of intent by businesses and research entities to locate in the science park;*

(vii) *capability to attract a well trained workforce to the science park;*

(viii) *the management of the science park during its first 5 years;*

(ix) *expected financial risks in the construction and operation of the science park and the risk mitigation strategy;*

(x) *physical infrastructure available to the science park, including roads, utilities, and telecommunications;*

(xi) *utilization of energy-efficient building technology including nationally recognized green building design practices, renewable energy, cogeneration, and other methods that increase energy efficiency and conservation;*

(xii) *consideration to the transformation of military bases affected by the base realignment and closure process or the redevelopment of existing buildings, structures, or brownfield sites that are abandoned, idled, or underused into single or multiple building facilities for science and technology companies and institutions;*

(xiii) *ability to collaborate with other science parks throughout the world;*

(xiv) *consideration of sustainable development practices and the quality of life at the science park; and*

(xv) other such criteria as the Secretary shall prescribe.

(4) *ALLOCATION CONSTRAINTS.*—The Secretary may not allocate less than one-third of the total grant funding allocated under this section for any fiscal year to grants under subsection (b) or this subsection without written notification to the Senate Committee on Commerce, Science, and Transportation and the House of Representatives Committees on Science and Technology and on Energy and Commerce.

(5) *AUTHORIZATION OF APPROPRIATIONS.*—There are authorized to be appropriated to the Secretary such sums as are necessary for each of fiscal years 2011 through 2013 to carry out this section, including such sums as are necessary to carry out the evaluation required under subsection (g).

(d) *LOAN GUARANTEES FOR SCIENCE PARK INFRASTRUCTURE.*—

(1) *IN GENERAL.*—Subject to paragraph (2), the Secretary may guarantee up to 80 percent of the loan amount for projects for the construction or expansion, including renovation and modernization, of science park infrastructure.

(2) *LIMITATIONS ON GUARANTEE AMOUNTS.*—The maximum amount of loan principal guaranteed under this subsection may not exceed—

(A) \$50,000,000 with respect to any single project;  
and

(B) \$300,000,000 with respect to all projects.

(3) *SELECTION OF GUARANTEE RECIPIENTS.*—The Secretary shall select recipients of loan guarantees under this subsection based upon the ability of the recipient to collateralize the loan amount through bonds, equity, property, and such other things of values as the Secretary shall deem necessary. Recipients of loans under subsection (C) are not eligible for a loan guarantee during the period of the grant. To the extent that the Secretary determines it to be feasible, the Secretary may select recipients of guarantee assistance in accord with a competitive process that takes into account the factors set out in subsection (c) of this section.

(4) *TERMS AND CONDITIONS FOR LOAN GUARANTEES.*—The loans guaranteed under this subsection shall be subject to such terms and conditions as the Secretary may prescribe, except that—

(A) the final maturity of such loans made or guaranteed may not exceed the lesser of—

(i) 30 years; or

(ii) 90 percent of the useful life of any physical asset to be financed by the loan;

(B) a loan guaranteed under this subsection may not be subordinated to another debt contracted by the borrower or to any other claims against the borrowers in the case of default;

(C) a loan may not be guaranteed under this subsection unless the Secretary determines that the lender is responsible and that provision is made for servicing the loan on reasonable terms and in a manner that adequately protects the financial interest of the United States;

(D) a loan may not be guaranteed under this subsection if—

(i) the income from the loan is excluded from gross income for purposes of chapter 1 of the Internal Revenue Code of 1986; or

(ii) the guarantee provides significant collateral or security, as determined by the Secretary in coordination with the Secretary of the Treasury, for other obligations the income from which is so excluded;

(E) any guarantee provided under this subsection shall be conclusive evidence that—

(i) the guarantee has been properly obtained;

(ii) the underlying loan qualified for the guarantee; and

(iii) absent fraud or material misrepresentation by the holder, the guarantee is presumed to be valid, legal, and enforceable;

(F) the Secretary may not extend credit assistance unless the Secretary has determined that there is a reasonable assurance of repayment; and

(G) new loan guarantees may not be committed except to the extent that appropriations of budget authority to cover their costs are made in advance, as required under section 504 of the Federal Credit Reform Act of 1990 (2 U.S.C. 661c).

(5) PAYMENT OF LOSSES.—

(A) IN GENERAL.—If, as a result of a default by a borrower under a loan guaranteed under this subsection, after the holder has made such further collection efforts and instituted such enforcement proceedings as the Secretary may require, the Secretary determines that the holder has suffered a loss, the Secretary shall pay to the holder the percentage of the loss specified in the guarantee contract. Upon making any such payment, the Secretary shall be subrogated to all the rights of the recipient of the payment. The Secretary shall be entitled to recover from the borrower the amount of any payments made pursuant to any guarantee entered into under this section.

(B) ENFORCEMENT OF RIGHTS.—The Attorney General shall take such action as may be appropriate to enforce any right accruing to the United States as a result of the issuance of any guarantee under this section.

(C) FORBEARANCE.—Nothing in this section may be construed to preclude any forbearance for the benefit of the borrower which may be agreed upon by the parties to the guaranteed loan and approved by the Secretary, if budget authority for any resulting subsidy costs (as defined in section 502(5) of the Federal Credit Reform Act of 1990) is available.

(6) EVALUATION OF CREDIT RISK.—

(A) The Secretary shall periodically assess the credit risk of new and existing direct loans or guaranteed loans.

(B) Not later than 2 years after the date of the enactment of the America COMPETES Reauthorization Act of 2010, the Comptroller General of the United States shall—

(i) conduct a review of the subsidy estimates for the loan guarantees under this section; and

(ii) submit to Congress a report on the review conducted under this paragraph.

(7) **TERMINATION.**—A loan may not be guaranteed under this section after September 30, 2013.

(8) **AUTHORIZATION OF APPROPRIATIONS.**—There are authorized to be appropriated—

(A) such sums as are necessary annually for the cost (as defined in section 502(5) of the Federal Credit Reform Act of 1990) of guaranteeing \$300,000,000 in loans under this section, and

(B) such sums as may be necessary for administrative expenses in fiscal year 2011 and thereafter, such sums to remain available until expended.

(e) **REGIONAL INNOVATION RESEARCH AND INFORMATION PROGRAM.**—

(1) **IN GENERAL.**—As part of the program established under subsection (a), the Secretary shall establish a regional innovation research and information program—

(A) to gather, analyze, and disseminate information on best practices for regional innovation strategies (including regional innovation clusters), including information relating to how innovation, productivity, and economic development can be maximized through such strategies;

(B) to provide technical assistance, including through the development of technical assistance guides, for the development and implementation of regional innovation strategies (including regional innovation clusters);

(C) to support the development of relevant metrics and measurement standards to evaluate regional innovation strategies (including regional innovation clusters), including the extent to which such strategies stimulate innovation, productivity, and economic development; and

(D) to collect and make available data on regional innovation cluster activity in the United States, including data on—

(i) the size, specialization, and competitiveness of regional innovation clusters;

(ii) the regional domestic product contribution, total jobs and earnings by key occupations, establishment size, nature of specialization, patents, Federal research and development spending, and other relevant information for regional innovation clusters; and

(iii) supply chain product and service flows within and between regional innovation clusters.

(2) **RESEARCH GRANTS.**—The Secretary may award research grants on a competitive basis to support and further the goals of the program established under this subsection.

(3) **DISSEMINATION OF INFORMATION.**—Data and analysis compiled by the Secretary under the program established in this subsection shall be made available to other Federal agencies, State and local governments, and nonprofit and for-profit entities.

- (4) *REGIONAL INNOVATION GRANT PROGRAM.*—*The Secretary shall incorporate data and analysis relating to any grant under subsection (b) or (c) and any loan guarantee under subsection (d) into the program established under this subsection.*
- (f) *INTERAGENCY COORDINATION.*—
- (1) *IN GENERAL.*—*To the maximum extent practicable, the Secretary shall ensure that the activities carried out under this section are coordinated with, and do not duplicate the efforts of, other programs at the Department of Commerce or other Federal agencies.*
- (2) *COLLABORATION.*—
- (A) *IN GENERAL.*—*The Secretary shall explore and pursue collaboration with other Federal agencies, including through multiagency funding opportunities, on regional innovation strategies.*
- (B) *SMALL BUSINESSES.*—*The Secretary shall ensure that such collaboration with Federal agencies prioritizes the needs and challenges of small businesses.*
- (g) *EVALUATION.*—
- (1) *IN GENERAL.*—*Not later than 3 years after the date of enactment of the America COMPETES Reauthorization Act of 2010, the Secretary shall enter into a contract with an independent entity, such as the National Academy of Sciences, to conduct an evaluation of the program established under subsection (a).*
- (2) *REQUIREMENTS.*—*The evaluation shall include—*
- (A) *whether the program is achieving its goals;*
- (B) *any recommendations for how the program may be improved; and*
- (C) *a recommendation as to whether the program should be continued or terminated.*
- (h) *DEFINITIONS.*—*In this section:*
- (1) *REGIONAL INNOVATION CLUSTER.*—*The term “regional innovation cluster” means a geographically bounded network of similar, synergistic, or complementary entities that—*
- (A) *are engaged in or with a particular industry sector;*
- (B) *have active channels for business transactions and communication;*
- (C) *share specialized infrastructure, labor markets, and services; and*
- (D) *leverage the region’s unique competitive strengths to stimulate innovation and create jobs.*
- (2) *SCIENCE PARK.*—*The term “Science park” means a property-based venture, which has—*
- (A) *master-planned property and buildings designed primarily for private-public research and development activities, high technology and science-based companies, and research and development support services;*
- (B) *a contractual or operational relationship with one or more science- or research-related institution of higher education or governmental or non-profit research laboratories;*
- (C) *a primary mission to promote research and development through industry partnerships, assisting in the growth of new ventures and promoting innovation-driven economic development;*

(D) a role in facilitating the transfer of technology and business skills between researchers and industry teams; and

(E) a role in promoting technology-led economic development for the community or region in which the science park is located. A science park may be owned by a governmental or not-for-profit entity, but it may enter into partnerships or joint ventures with for-profit entities for development or management of specific components of the park.

(3) STATE.—The term “State” means one of the several States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, or any other territory or possession of the United States.

(i) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated such sums as necessary for each of fiscal years 2011 through 2013 to carry out this section.

## AMERICA COMPETES ACT

[33 U.S.C. 893 et seq.]

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### SEC. 4001. OCEAN AND ATMOSPHERIC RESEARCH AND DEVELOPMENT PROGRAM.

[33 U.S.C. 893]

(a) *IN GENERAL.*—The Administrator of the National Oceanic and Atmospheric Administration, in consultation with the Director of the National Science Foundation and the Administrator of the National Aeronautics and Space Administration, shall establish a coordinated program of ocean, coastal, Great Lakes, and atmospheric research and development, in collaboration with academic institutions and other nongovernmental entities, that shall focus on the development of advanced technologies and analytical methods that will promote United States leadership in ocean and atmospheric science and competitiveness in the applied uses of such knowledge.

(b) *OCEANIC AND ATMOSPHERIC RESEARCH AND DEVELOPMENT PROGRAM.*—The Administrator shall implement programs and activities—

(1) to identify emerging and innovative research and development priorities to enhance U.S. competitiveness, support development of new economic opportunities based on NOAA research, observations, monitoring modeling, and predictions that sustain ecosystem services;

(2) to promote United States leadership in ocean and atmospheric science and competitiveness in the applied uses of such knowledge, including for the development and expansion of economic opportunities; and

(3) to advance ocean, coastal, Great Lakes, and atmospheric research and development, including potentially transformational research, in collaboration with other relevant Federal agencies, academic institutions, the private sector, and nongovernmental programs, consistent with the Administration’s mission to understand, observe, and model the Earth’s atmosphere and biosphere, including the oceans, in an integrated manner.

(c) *REPORT.*—No later than 12 months after the date of enactment of the America COMPETES Reauthorization Act of 2010, the Administrator, in consultation with the National Science Foundation or other such agencies with mature transformational research portfolios, shall develop and submit a report to describe NOAA’s strategy for enhancing transformational research in its research and development portfolio to increase United States competitiveness in oceanic and atmospheric science and technology. The report shall—

(1) define “transformational research”;

(2) identify emerging and innovative areas of research and development where transformational research has the potential to make significant and revolutionary advancements in both understanding and U.S. science leadership;

(3) describe how transformational research priorities are identified and appropriately balanced in the context of NOAA’s broader research portfolio;

(4) describe NOAA’s plan for developing a competitive peer review and priority-setting process, funding mechanisms, performance and evaluation measures, and transition-to-operation guidelines for transformational research; and

(5) describe partnerships with other agencies involved in transformational research.

(d) *PARTNERSHIPS AND AGREEMENTS.*—

(1) *IN GENERAL.*—The Administrator may execute such contracts, leases, grants, cooperative agreements, or other agreements and transactions with any agency or instrumentality of the United States, any State, local, tribal, territorial or foreign government, or with any person, corporation, firm, partnership, educational institution, nonprofit organization, or international organization as may be necessary to carry out this title.

(2) *SPECIFIC AUTHORITY.*—Notwithstanding any other provision of law, the Administrator may—

(A) execute long term leases of up to 20 years for the use of unimproved land to site small shelter facilities, antennae, and equipment including weather, tide, tidal currents, river, and air sampling or measuring equipment;

(B) grant long term licenses of up to 20 years at no cost to site facilities and equipment including weather, tide, tidal currents, river, and air sampling or measuring equipment;

(C) acquire (by purchase, lease, or otherwise), lease, sell, and dispose of or convey services, money, securities, or property (whether real, personal, intellectual, or of any other kind) or an interest therein;

(D) construct, improve, repair, operate, maintain, outgrant, and dispose of real or personal property, including buildings, facilities, and land; and

(E) waive capital lease scoring requirements for any lease of space on commercial antennas to support weather radio equipment, air sampling, or measuring equipment.

(3) *CERTAIN LEASED EQUIPMENT.*—Notwithstanding any other provision of law, rule, or regulation, leases of antenna or equipment on towers or other structures shall be considered operating leases for the purpose of capital lease scoring.

(4) *AUTHORITY TO RECEIVE FUNDS.*—*The Administrator may accept, retain, and use funds received from any party pursuant to an agreement entered into under this subsection for activities furthering the purposes of this title.*

**SEC. 4002. NOAA OCEAN AND ATMOSPHERIC SCIENCE EDUCATION PROGRAMS.**

[33 U.S.C. 893a]

(a) *IN GENERAL.*—*The Administrator of the National Oceanic and Atmospheric Administration shall conduct, develop, support, promote, and coordinate formal and informal educational activities at all levels to enhance public awareness and understanding of ocean, coastal, Great Lakes, and atmospheric science and stewardship by the general public and other coastal stakeholders, including underrepresented groups in ocean and atmospheric science and policy careers. In conducting those activities, the Administrator shall build upon the educational programs and activities of [the agency.] agency, with consideration given to the goal of promoting the participation of individuals from underrepresented groups in STEM fields and in promoting the acquisition and retention of highly qualified and motivated young scientists to complement and supplement workforce needs.*

(b) *EDUCATIONAL PROGRAM GOALS.*—*The education programs developed by NOAA shall, to the extent applicable—*

(1) *carry out and support research based programs and activities designed to increase student interest and participation in STEM;*

(2) *improve public literacy in STEM;*

(3) *employ proven strategies and methods for improving student learning and teaching in STEM;*

(4) *provide curriculum support materials and other resources that—*

(A) *are designed to be integrated with comprehensive STEM education;*

(B) *are aligned with national science education standards; and*

(C) *produce the adoption and implementation of high-quality education practices that build toward college and career-readiness; and*

(5) *create and support opportunities for enhanced and ongoing professional development for teachers using best practices that improves the STEM content and knowledge of the teachers, including through programs linking STEM teachers with STEM educators at the higher education level.*

[(b)] (c) *NOAA SCIENCE EDUCATION PLAN.*—*The Administrator, appropriate National Oceanic and Atmospheric Administration programs, ocean atmospheric science and education experts, and interested members of the public shall [develop] maintain a science education plan setting forth education goals and strategies for the Administration, as well as programmatic actions to carry out such goals and priorities over the next 20 years, and evaluate and update such plan every 5 years.*

[(c)] (d) *CONSTRUCTION.*—*Nothing in this section may be construed to affect the application of section 438 of the General Education Provisions Act (20 U.S.C. 1232a) or sections 504 and 508 of the Rehabilitation Act of 1973 (29 U.S.C. 794 and 794d).*

(e) *STEM FIELDS DEFINED.*—*In this section, the term “STEM fields” means the academic and professional disciplines of science, technology, engineering, and mathematics.*

NATIONAL SCIENCE FOUNDATION AUTHORIZATION ACT OF  
2002

SEC. 4. NATIONAL SCIENCE BOARD.

[42 U.S.C. 1863]

(a) COMPOSITION; APPOINTMENT; ESTABLISHMENT OF POLICIES OF THE FOUNDATION.—The Board shall consist of twenty-four members to be appointed by the President, by and with the advice and consent of the Senate, and of the Director ex officio. In addition to any powers and functions otherwise granted to it by this Act, the Board shall establish the policies of the Foundation, within the framework of applicable national policies as set forth by the President and the Congress.

(b) EXECUTIVE COMMITTEE; DELEGATION OF POWERS AND FUNCTIONS.—The Board shall have an Executive Committee as provided in section 7, and may delegate to it or to the Director or both such of the powers and functions granted to the Board by this Act as it deems appropriate.

(c) MEETINGS; NOMINATIONS; QUORUM; NOTICE.—The persons nominated for appointment as members of the Board (1) shall be eminent in the fields of the basic, medical, or social sciences, engineering, agriculture, education, research management, or public affairs; (2) shall be selected solely on the basis of established records of distinguished service; and (3) shall be so selected as to provide representation of the views of scientific and engineering leaders in all areas of the Nation. In making nominations under this section, the President shall give due regard to equitable representation of scientists and engineers who are women or who represent minority groups. The President is requested, in the making of nominations of persons for appointment as members, to give due consideration to any recommendations for nomination which may be submitted to him by the National Academy of Sciences, the National Academy of Engineering, the National Association of State Universities and Land Grant Colleges, the Association of American Universities, the Association of American Colleges, the Association of State Colleges and Universities, or by other scientific, engineering, or educational organizations.

(d) TERM OF OFFICE; REAPPOINTMENT.—The term of office of each member of the Board shall be six years; except that any member appointed to fill a vacancy occurring prior to the expiration of the term for which his predecessor was appointed shall be appointed for the remainder of such term. Any person, other than the Director, who has been a member of the Board for twelve consecutive years shall thereafter be ineligible for appointment during the two-year period following the expiration of such twelfth year.

(e) MEETINGS; QUORUM; NOTICE.—The Board shall meet annually on the third Monday in May unless, prior to May 10 in any year, the Chairman has set the annual meeting for a day in May other than the third Monday, and at such other times as the Chairman may determine, but he shall also call a meeting whenever one-third of the members so request in writing. The Board shall adopt proce-

dures governing the conduct of its meetings, including delivery of notice and a definition of a quorum, which in no case shall be less than one-half plus one of the confirmed members of the Board.

(f) ELECTION OF CHAIRMAN AND VICE CHAIRMAN; VACANCY.—The election of the Chairman and Vice Chairman of the Board shall take place at each annual meeting occurring in an even-numbered year. The Vice Chairman shall perform the duties of the Chairman in his absence. In case a vacancy occurs in the chairmanship or vice chairmanship, the Board shall elect a member to fill such vacancy.

(g) LIMITED TERM PERSONNEL FOR THE NATIONAL SCIENCE BOARD.—The Board may, with the concurrence of a majority of its members, permit the appointment of a staff consisting of [not more than 5] professional staff members, technical and professional personnel on leave of absence from academic, industrial, or research institutions for a limited term, and such operations and support staff members as may be necessary. Such staff shall be appointed by the Chairman and assigned at the direction of the Board. The professional members and limited term technical and professional personnel of such staff may be appointed without regard to the provisions of title 5, United States Code, governing appointments in the competitive service, and the provisions of chapter 51 of such title [5 U.S.C. 5101 et seq.] relating to classification, and shall be compensated at a rate not exceeding the maximum rate payable under section 5376 of such title [5 U.S.C. 5376], as may be necessary to provide for the performance of such duties as may be prescribed by the Board in connection with the exercise of its powers and functions under this Act. Section 14(a)(3) shall apply to each limited term appointment of technical and professional personnel under this subsection. Each appointment under this subsection shall be subject to the same security requirements as those required for personnel of the Foundation appointed under section 14(a) [42 U.S.C. 1873(a)].

(h) SPECIAL COMMISSIONS.—The Board is authorized to establish such special commissions as it may from time to time deem necessary for the purposes of this Act.

(i) COMMITTEES; SURVEY AND ADVISORY FUNCTIONS.—The Board is also authorized to appoint from among its members such committees as it deems necessary, and to assign to committees so appointed such survey and advisory functions as the Board deems appropriate to assist it in exercising its powers and functions under this Act.

(j) ANNUAL REPORT TO PRESIDENT; SUBMITTAL TO CONGRESS.—

(1) The Board shall render to the President and the Congress no later than January 15 of each even numbered year, a report on indicators of the state of science and engineering in the United States.

(2) The Board shall render to the President and the Congress reports on specific, individual policy matters *within the authority of the Foundation (or otherwise as requested by the Congress or the President)* related to science and engineering and education in science and engineering, as the Board, the President, or the Congress determines the need for such reports.

(k) CLOSED MEETINGS.—Portions of Board meetings in which the Board considers proposed Foundation budgets for a particular fiscal

year may be closed to the public until the President's budget for that fiscal year has been submitted to the Congress.

(1) **FINANCIAL DISCLOSURE REPORT FOR BOARD MEMBERS.**—Members of the Board shall be required to file a financial disclosure report under title II of the Ethics in Government Act of 1978 (5 U.S.C. App. 92 Stat. 1836), except that such reports shall be held confidential and exempt from any law otherwise requiring their public disclosure.

Section 4(j)(2) of the National Science Foundation Act of 1950 (42 U.S.C. 1863(j)(2))

Section 15(a)(2) of the National Science Foundation Authorization Act of 2002 (42 U.S.C. 1862n-5(a)(2))

**SEC. 10A. NATIONAL SCIENCE FOUNDATION TEACHING FELLOWSHIPS AND MASTER TEACHING FELLOWSHIPS.**

[42 U.S.C. 1862n-1a]

(a) **IN GENERAL.**—

(1) **GRANTS.**—

(A) **IN GENERAL.**—As part of the Robert Noyce Teacher Scholarship Program established under section 10, the Director shall establish a separate program to award grants to eligible entities to enable such entities to administer fellowships in accordance with this section.

(B) **DEFINITIONS.**—The terms used in this section have the meanings given the terms in section 10.

(2) **FELLOWSHIPS.**—Fellowships under this section shall be available only to—

(A) science, technology, engineering, or mathematics professionals, *including retiring professionals in those fields*, who shall be referred to as “National Science Foundation Teaching Fellows” and who, in the first year of the fellowship, are enrolled in a master's degree program leading to teacher certification or licensing; and

(B) mathematics and science teachers, who shall be referred to as “National Science Foundation Master Teaching Fellows” and who possess a master's degree in their field.

(b) **ELIGIBILITY.**—In order to be eligible to receive a grant under this section, an eligible entity shall enter into a partnership that shall include—

(1) a department within an institution of higher education participating in the partnership that provides an advanced program of study in mathematics and science;

(2) (A) a school or department within an institution of higher education participating in the partnership that provides a teacher preparation program; or

(B) a 2-year institution of higher education that has a teacher preparation offering or a dual enrollment program with an institution of higher education participating in the partnership;

(3) not less than 1 high need local educational agency and a public school or a consortium of public schools served by the agency; and

(4) 1 or more nonprofit organizations that have a demonstrated record of capacity to provide expertise or support to meet the purposes of this section.

(c) **USE OF GRANTS.**—Grants awarded under this section shall be used by the eligible entity (and participating institutions of higher

education of the consortium, if applicable) to develop and implement a program for National Science Foundation Teaching Fellows or National Science Foundation Master Teaching Fellows, through—

(1) administering fellowships in accordance with this section, including providing the teaching fellowship salary supplements described in subsection (f);

(2) in the case of National Science Foundation Teaching Fellowships—

(A) offering academic courses and clinical teaching experiences leading to a master's degree and designed to prepare individuals to teach in elementary schools and secondary schools, including such preparation as is necessary to meet the requirements for certification or licensing; and

(B) offering programs both during and after matriculation in the program for which the fellowship is received to enable fellows to become highly effective mathematics and science teachers, including mentoring, training, induction, and professional development activities, to fulfill the service requirements of this section, including the requirements of subsection (e), and to exchange ideas with others in their fields; and

(3) in the case of National Science Foundation Master Teaching Fellowships--

(A) offering academic courses and leadership training to prepare individuals to become master teachers in elementary schools and secondary schools; and

(B) offering programs both during and after matriculation in the program for which the fellowship is received to enable fellows to become highly effective mathematics and science teachers, including mentoring, training, induction, and professional development activities, to fulfill the service requirements of this section, including the requirements of subsection (e), and to exchange ideas with others in their fields.

(d) SELECTION PROCESS.—

(1) MERIT REVIEW.—Grants shall be awarded under this section on a competitive, merit-reviewed basis.

(2) APPLICATIONS.—An eligible entity desiring a grant under this section shall submit an application to the Director at such time, in such manner, and containing such information as the Director may require. The application shall include, at a minimum—

(A) in the case of an applicant that is submitting an application on behalf of a consortium of institutions of higher education, a description of the participating institutions of higher education and the roles and responsibilities of each such institution;

(B) a description of the program that the applicant intends to operate, including the number of fellowships the applicant intends to award, the type of activities proposed for the recruitment of students to the program, and the amount of the teaching fellowship salary supplements to be provided in accordance with subsection (f);

(C) evidence that the applicant has the capability to administer the program in accordance with the provisions of this section, which may include a description of any existing programs at the applicant eligible entity (and participating institutions of higher education of the consortium, if applicable) that are targeted to the education of mathematics and science teachers and the number of teachers graduated annually from such programs;

(D) in the case of National Science Foundation Teaching Fellowships, a description of—

(i) the selection process that will be used in awarding fellowships, including a description of the rigorous measures to be used, including the rigorous, nationally recognized assessments to be used, in order to determine whether individuals applying for fellowships have advanced content knowledge of science, technology, engineering, or mathematics;

(ii) the academic courses and clinical teaching experiences described in subsection (c)(2)(A), including—

(I) a description of an educational program that will enable a student to obtain a master's degree and teacher certification or licensing within 1 year; and

(II) evidence of agreements between the applicant and the schools or local educational agencies that are identified as the locations at which clinical teaching experiences will occur;

(iii) a description of the programs described in subsection (c)(2)(B), including activities to assist individuals in fulfilling their service requirements under this section;

(E) evidence that the eligible entity will provide the teaching supplements required under subsection (f); and

(F) a description of the process the applicant will use to fulfill the requirements of section 10(f).

(3) CRITERIA.—In evaluating the applications submitted under paragraph (2), the Director shall consider, at a minimum—

(A) the ability of the applicant (and participating institutions of higher education of the consortium, if applicable) to effectively carry out the program and to meet the requirements of subsection (f);

(B) the extent to which the mathematics, science, or engineering faculty and the education faculty at the eligible entity (and participating institutions of higher education of the consortium, if applicable) have worked or will work collaboratively to design new or revised curricula that recognizes the specialized pedagogy required to teach science, technology, engineering, and mathematics effectively in elementary schools and secondary schools;

(C) the extent to which the applicant (and participating institutions of higher education of the consortium, if applicable) is committed to making the program a central organizational focus;

(D) the degree to which the proposed programming will enable participants to become highly effective mathematics and science teachers and prepare such participants to assume leadership roles in their schools, in addition to their regular classroom duties, including serving as mentor or master teachers, developing curriculum, and assisting in the development and implementation of professional development activities;

(E) the number and quality of the individuals that will be served by the program; and

(F) in the case of the National Science Foundation Teaching Fellowship, the ability of the applicant (and participating institutions of higher education of the consortium, if applicable) to recruit individuals who would otherwise not pursue a career in teaching and individuals identified in section 33 or 34 of the Science and Engineering Equal Opportunities Act (42 U.S.C. 1855a or 1855b).

(4) SELECTION OF FELLOWS.—

(A) IN GENERAL.—Individuals shall be selected to receive fellowships under this section primarily on the basis of—

- (i) professional achievement;
- (ii) academic merit;
- (iii) content knowledge of science, technology, engineering, or mathematics, as demonstrated by their performance on an assessment in accordance with paragraph (2)(D)(i); and
- (iv) in the case of National Science Foundation Master Teaching Fellows, demonstrated success in improving student academic achievement in science, technology, engineering, or mathematics.

(B) PROMOTING PARTICIPATION OF CERTAIN INDIVIDUALS.—Among individuals demonstrating equivalent qualifications, consideration may be given to the goal of promoting the participation of individuals identified in section 33 or 34 of the Science and Engineering Equal Opportunities Act (42 U.S.C. 1885a or 1885b).

(e) DUTIES OF NATIONAL SCIENCE FOUNDATION TEACHING FELLOWS AND MASTER TEACHING FELLOWS.—A National Science Foundation Teaching Fellow or a National Science Foundation Master Teaching Fellow, while fulfilling the service obligation under subsection (g) and in addition to regular classroom activities, shall take on a leadership role within the school or local educational agency in which the fellow is employed, as defined by the partnership according to such fellow's expertise, including serving as a mentor or master teacher, developing curricula, and assisting in the development and implementation of professional development activities.

(f) TEACHING FELLOWSHIP SALARY SUPPLEMENTS.—

(1) IN GENERAL.—An eligible entity receiving a grant under this section shall provide salary supplements to individuals who participate in the program under this section during the period of their service obligation under subsection (g). A local educational agency through which the service obligation is fulfilled shall agree not to reduce the base salary normally paid

to an individual solely because such individual receives a salary supplement under this subsection.

(2) AMOUNT AND DURATION.—

(A) AMOUNT.—Salary supplements provided under paragraph (1) shall be not less than \$10,000 per year, except that, in the case of a National Science Foundation Teaching Fellow, while enrolled in the master's degree program as described in subsection (c)(2)(A), such fellow shall receive not more than the cost of attendance at such fellow's institution.

(B) SUPPORT WHILE ENROLLED IN MASTER'S DEGREE PROGRAM.—A National Science Foundation Teaching Fellow may receive a maximum of 1 year of fellowship support while enrolled in a master's degree program as described in subsection (c)(2)(A), except that if such fellow is enrolled in a part-time program, such amount shall be prorated according to the length of the program.

(C) DURATION OF SUPPORT.—An eligible entity receiving a grant under this section shall provide teaching fellowship salary supplements through the period of the fellow's service obligation under subsection (g).

(g) SERVICE OBLIGATION.—An individual awarded a fellowship under this section shall serve as a mathematics or science teacher in an elementary school or secondary school served by a high need local educational agency for—

(1) in the case of a National Science Foundation Teaching Fellow, 4 years, to be fulfilled within 6 years of completing the master's program described in subsection (c)(2)(A); and

(2) in the case of a National Science Foundation Master Teaching Fellow, 5 years, to be fulfilled within 7 years of the start of participation in the program under subsection (c)(3).

(h) MATCHING REQUIREMENT.—

[(1) IN GENERAL.—An eligible entity receiving a grant under this section shall provide, from non-Federal sources, an amount equal to 50 percent of the amount of the grant (which may be provided in cash or in-kind) to carry out the activities supported by the grant.]

(1) IN GENERAL.—*An eligible entity receiving a grant under this section shall provide, from non-Federal sources, to carry out the activities supported by the grant—*

(A) *in the case of grants in an amount of less than \$1,500,000, an amount equal to at least 30 percent of the amount of the grant, at least one half of which shall be in cash; and*

(B) *in the case of grants in an amount of \$1,500,000 or more, an amount equal to at least 50 percent of the amount of the grant, at least one half of which shall be in cash.*

(2) WAIVER.—The Director may waive all or part of the matching requirement described in paragraph (1) for any fiscal year for an eligible entity receiving a grant under this section, if the Director determines that applying the matching requirement would result in serious hardship or inability to carry out the authorized activities described in this section.

(i) CONDITIONS OF SUPPORT; COLLECTION FOR NONCOMPLIANCE; FAILURE TO COMPLETE SERVICE OBLIGATION; DATA COLLECTION.—

(1) IN GENERAL.—Except as provided in paragraph (2), subsections (e), (f), (g), and (h) of section 10 shall apply to eligible entities and recipients of fellowships under this section, as applicable, in the same manner as such subsections apply to eligible entities and recipients of scholarships and stipends under section 10, as applicable.

(2) AMOUNT OF REPAYMENT.—If a circumstance described in subparagraph (D) or (E) of section 10(g)(1) occurs after the completion of 1 year of a service obligation under this section—

(A) for a National Science Foundation Teaching Fellow, the total amount of fellowship award received by the individual under this section while enrolled in the master's degree program, reduced by one-fourth of the total amount for each year of service completed, plus one-half of the total teaching fellowship salary supplements received by such individual under this section, shall be repaid or such amount shall be treated as a loan to be repaid in accordance with section 10(g)(1)(C); and

(B) for a National Science Foundation Master Teaching Fellow, the total amount of teaching fellowship salary supplements received by the individual under this section, reduced by one-half, shall be repaid or such amount shall be treated as a loan to be repaid in accordance with section 10(g)(1)(C).

**SEC. 15. BOARD MEETINGS; AUDITS; REPORTS; SCHOLARSHIP ELIGIBILITY.**

[42 U.S.C. 1862n-5]

(a) BOARD MEETINGS.—

(1) [Omitted]

(2) OPEN MEETINGS.—**[The Board]** *To ensure transparency of the Board's entire decision-making process, including deliberations on Board business occurring within its various subdivisions, the Board and all of its committees, subcommittees, and task forces (and any other entity consisting of members of the Board and reporting to the Board) shall be subject to section 552b of title 5, United States Code. The preceding requirement will apply to meetings of the full Board, whenever a quorum is present; and to meetings of its subdivisions, whenever a quorum of the subdivision is present.*

(3) COMPLIANCE AUDIT.—The Inspector General of the Foundation shall conduct an audit every three years of the compliance by the Board with the requirements described in paragraph (2). The audit shall examine the proposed and actual content of closed meetings and determine whether the closure of the meetings was consistent with section 552b of title 5, United States Code.

(4) REPORT.—Not later than February 15 of every third year, the Inspector General of the Foundation shall transmit to the Committee on Science of the House of Representatives, the Committee on Commerce, Science, and Transportation of the Senate, and the Committee on Health, Education, Labor, and Pensions of the Senate the audit required under paragraph (3) along with recommendations for corrective actions that need to be taken to achieve fuller compliance with the requirements

described in paragraph (2), and recommendations on how to ensure public access to the Board's deliberations.

(5) MATERIALS RELATING TO CLOSED PORTIONS OF MEETINGS.—To facilitate the audit required under paragraph (3) of this subsection, the Office of the National Science Board shall maintain the General Counsel's certificate, the presiding officer's statement, and a transcript or recording of any closed meeting, for at least 3 years after such meeting.

#### NATIONAL SCIENCE FOUNDATION ACT OF 1950

[42 U.S.C. 1869]

##### SEC. 10. SCHOLARSHIPS AND GRADUATE FELLOWSHIPS.

(a) *IN GENERAL.*—The Foundation is authorized to award scholarships and graduate fellowships for study and research in the sciences or in engineering at appropriate nonprofit American or nonprofit foreign institutions selected by the recipient of such aid, for stated periods of time. Persons shall be selected for such scholarships and fellowships from among citizens, nationals or lawfully admitted permanent resident aliens of the United States, and such selections shall be made solely on the basis of ability; but in any case in which two or more applicants for scholarships or fellowships, as the case may be, are deemed by the Foundation to be possessed of substantially equal ability, and there are not sufficient scholarships or fellowships, as the case may be, available to grant one to each of such applicants, the available scholarship or scholarships or fellowship or fellowships shall be awarded to the applicants in such manner as will tend to result in a wide distribution of scholarships and fellowships throughout the United States. Nothing contained in this Act shall prohibit the Foundation from refusing or revoking a scholarship or fellowship award, in whole or in part, in the case of any applicant or recipient, if the Board is of the opinion that such award is not in the best interests of the United States.

(b) *AMOUNT.*—*The Director shall establish for each year the amount to be awarded for scholarships and fellowships under this section for that year. Each such scholarship and fellowship shall include a cost of education allowance of \$12,000, subject to any restrictions on the use of cost of education allowance as determined by the Director.*

#### NATIONAL AERONAUTICS AND SPACE ACT OF 1958

[42 U.S.C. 2459f-1]

##### SEC. 314. PRIZE AUTHORITY.

(a) *IN GENERAL.*—The Administration may carry out a program to competitively award cash prizes to stimulate innovation in basic and applied research, technology development, and prototype demonstration that have the potential for application to the performance of the space and aeronautical activities of the Administration. **[The Administration may carry out a program to award prizes only in conformity with this section.]**

(b) *TOPICS.*—In selecting topics for prize competitions, the Administrator shall consult widely both within and outside the Federal Government, and may empanel advisory committees. The Ad-

ministrator shall give consideration to prize goals such as the demonstration of the ability to provide energy to the lunar surface from space-based solar power systems, demonstration of innovative near-Earth object survey and deflection strategies, and innovative approaches to improving the safety and efficiency of aviation systems.

(c) ADVERTISING.—The Administrator shall widely advertise prize competitions to encourage participation.

(d) REQUIREMENTS AND REGISTRATION.—For each prize competition, the Administrator shall publish a notice in the Federal Register announcing the subject of the competition, the rules for being eligible to participate in the competition, the amount of the prize, and the basis on which a winner will be selected.

(e) ELIGIBILITY.—To be eligible to win a prize under this section, an individual or entity—

(1) shall have registered to participate in the competition pursuant to any rules promulgated by the Administrator under subsection (d);

(2) shall have complied with all the requirements under this section;

(3) in the case of a private entity, shall be incorporated in and maintain a primary place of business in the United States, and in the case of an individual, whether participating singly or in a group, shall be a citizen or permanent resident of the United States; and

(4) shall not be a Federal entity or Federal employee acting within the scope of their employment.

(f) LIABILITY.—

(1) Registered participants must agree to assume any and all risks and waive claims against the Federal Government and its related entities, except in the case of willful misconduct, for any injury, death, damage, or loss of property, revenue, or profits, whether direct, indirect, or consequential, arising from their participation in a competition, whether such injury, death, damage, or loss arises through negligence or otherwise. For the purposes of this paragraph, the term “related entity” means a contractor or subcontractor at any tier, and a supplier, user, customer, cooperating party, grantee, investigator, or detailee.

(2) Participants must obtain liability insurance or demonstrate financial responsibility, in amounts determined by the Administrator, for claims by--

(A) a third party for death, bodily injury, or property damage, or loss resulting from an activity carried out in connection with participation in a competition, with the Federal Government named as an additional insured under the registered participant’s insurance policy and registered participants agreeing to indemnify the Federal Government against third party claims for damages arising from or related to competition activities; and

(B) the Federal Government for damage or loss to Government property resulting from such an activity.

(g) JUDGES.—For each competition, the Administration, either directly or through an agreement under subsection (h), shall assemble a panel of qualified judges to select the winner or winners of the prize competition on the basis described pursuant to subsection

(d). Judges for each competition shall include individuals from outside the Administration, including from the private sector. A judge may not—

(1) have personal or financial interests in, or be an employee, officer, director, or agent of any entity that is a registered participant in a competition; or

(2) have a familial or financial relationship with an individual who is a registered participant.

(h) ADMINISTERING THE COMPETITION.—The Administrator may enter into an agreement with a private, nonprofit entity to administer the prize competition, subject to the provisions of this section.

(i) FUNDING.—

(1) Prizes under this section may consist of Federal appropriated funds and funds provided by the private sector for such cash prizes. The Administrator may accept funds from other Federal agencies for such cash prizes. The Administrator may not give any special consideration to any private sector entity in return for a donation.

(2) Notwithstanding any other provision of law, funds appropriated for prize awards under this section shall remain available until expended, and may be transferred, reprogrammed, or expended for other purposes only after the expiration of 10 fiscal years after the fiscal year for which the funds were originally appropriated. No provision in this section permits obligation or payment of funds in violation of the Anti-Deficiency Act (31 U.S.C. 1341).

(3) No prize may be announced under subsection (d) until all the funds needed to pay out the announced amount of the prize have been appropriated or committed in writing by a private source. The Administrator may increase the amount of a prize after an initial announcement is made under subsection (d) if—

(A) notice of the increase is provided in the same manner as the initial notice of the prize; and

(B) the funds needed to pay out the announced amount of the increase have been appropriated or committed in writing by a private source.

(4) No prize competition under this section may offer a prize in an amount greater than \$ 50,000,000 unless 30 days have elapsed after written notice has been transmitted to the Committee on Science of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate.

(5) No prize competition under this section may result in the award of more than \$ 1,000,000 in cash prizes without the approval of the Administrator.

(j) USE OF NASA NAME AND INSIGNIA.—A registered participant in a competition under this section may use the Administration's name, initials, or insignia only after prior review and written approval by the Administration.

(k) COMPLIANCE WITH EXISTING LAW.—The Federal Government shall not, by virtue of offering or providing a prize under this section, be responsible for compliance by registered participants in a prize competition with Federal law, including licensing, export control, and non-proliferation laws, and related regulations.

COMMUNICATIONS ACT OF 1934

[47 U.S.C. 151 et seq.]

**SEC. 12. ADDITIONAL RESEARCH AUTHORITIES OF THE FCC.**

*In order to carry out the purposes of this Act, the Commission may—*

*(1) undertake research and development work in connection with any matter in relation to which the Commission has jurisdiction; and*

*(2) promote the carrying out of such research and development by others, or otherwise to arrange for such research and development to be carried out by others.*

