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[Report No. 111–363]

To invest in innovation through research and development, to improve the competitiveness of the United States, and for other purposes.

IN THE SENATE OF THE UNITED STATES

JULY 15, 2010

Mr. ROCKEFELLER (for himself, Mr. NELSON of Florida, Ms. KLOBUCHAR, Mr. KAUFMAN, Mr. KERRY, Ms. CANTWELL, Mr. PRYOR, and Mr. BEGICH) introduced the following bill; which was read twice and referred to the Committee on Commerce, Science, and Transportation

DECEMBER 10, 2010

Reported by Mr. ROCKEFELLER, with an amendment

[Strike all after the enacting clause and insert the part printed in italic]

A BILL

To invest in innovation through research and development, to improve the competitiveness of the United States, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

(a) SHORT TITLE.—This Act may be cited as the "America COMPETES Reauthorization Act of 2010" or the "America Creating Opportunities to Meaningfully Promote Excellence in Technology, Education, and Science Reauthorization Act of 2010".

(b) TABLE OF CONTENTS.—The table of contents for this Act is as follows:

SEC. 2. DEFINITIONS.

In this Act:

(1) DIRECTOR.—

(A) In title I, the term ''Director'' means the Director of the Office of Science and Technology Policy.

(B) In title V, the term ''Director'' means the Director of the National Institute of Science and Technology.

(2) STEM.—The term ''STEM'' means the academic and professional disciplines of science, technology, engineering, and mathematics.

TITLE I—OFFICE OF SCIENCE AND TECHNOLOGY POLICY

SEC. 101. NATIONAL INNOVATION AND COMPETITIVENESS STRATEGY.

Not later than one year after the date of the enactment of this Act, the Director of the Office of Science and Technology Policy shall submit to Congress and the President a national innovation and competitiveness strategy for strengthening the innovative and competitive capacity of the Federal Government, State and local governments, institutions of higher education, and the private sector that includes—

(1) proposed legislative changes and action;

(2) proposed actions to be taken collectively by executive agencies, including White House offices;

(3) proposed actions to be taken by individual executive agencies, including White House offices; and

(4) a proposal for metrics-based monitoring and oversight of the progress of the Federal Government with respect to improving conditions for the innova-

tion occurring in and the competitiveness of the United States.

SEC. 102. COORDINATION OF FEDERAL STEM EDUCATION.

(a) ESTABLISHMENT.—The Director shall establish a committee under the National Science and Technology Council, including the Office of Management and Budget, with the responsibility to coordinate Federal programs and activities in support of STEM education, including at the National Science Foundation, the Department of Energy, the National Aeronautics and Space Administration, the National Oceanic and Atmospheric Administration, the Department of Education, and all other Federal agencies that have programs and activities in support of STEM education.

(b) RESPONSIBILITIES.—The committee established under subsection (a) shall—

(1) coordinate the STEM education activities and programs of the Federal agencies;

(2) coordinate STEM education activities and programs with the Office of Management and Budget;

(3) review STEM education activities and programs to ensure they are not duplicative of similar efforts within the Federal government;

(4) develop, implement through the participating agencies, and update once every 5 years a 5-year STEM education strategic plan, which shall—

(A) specify and prioritize annual and long-term objectives;

(B) specify the common metries that will be used to assess progress toward achieving the objectives;

(C) describe the approaches that will be taken by each participating agency to assess the effectiveness of its STEM education programs and activities; and

(D) with respect to subparagraph (A), describe the role of each agency in supporting programs and activities designed to achieve the objectives; and

(5) 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 in such programs and activities.

(b) RESPONSIBILITIES OF OSTP.—The Director shall encourage and monitor the efforts of the partici-

pating agencies to ensure that the strategic plan under subsection (b)(2) is developed and executed effectively and that the objectives of the strategic plan are met.

(c) REPORT.—The Director shall transmit a report annually to Congress at the time of the President's budget request describing the plan required under subsection (b)(2). The annual report shall include—

(1) a description of the STEM education programs and activities for the previous and current fiscal years, and the proposed programs and activities under the President's budget request, of each participating Federal agency;

(2) the levels of funding for each participating Federal agency for the programs and activities described under paragraph (1) for the previous fiscal year and under the President's budget request;

(3) an evaluation of the levels of duplication and fragmentation of the programs and activities described under paragraph (1);

(4) except for the initial annual report, a description of the progress made in carrying out the implementation plan, including a description of the outcome of any program assessments completed in the previous year, and any changes made to that plan since the previous annual report; and

(5) a description of how the participating Federal agencies will disseminate information about federally supported resources for STEM education practitioners, including teacher professional development programs, to States and to STEM education practitioners, including to teachers and administrators in schools that meet the criteria described in subsection (c)(1)(A) and (B) of section 3175 of the Department of Energy Science Education Enhancement Act (42 U.S.C. 7381j(c)(1)(A) and (B)).

SEC. 103. CYBERINFRASTRUCTURE IMPROVEMENT STUDY.

(a) IN GENERAL.—The President's Innovation and Technology Advisory Committee, in coordination with the Office of Science and Technology Policy and the national coordination office of the Networking and Information Technology Research and Development Program, shall conduct a comprehensive study of the status of programs supporting innovation-enabling cyberinfrastructure of regional, thematic, or technological importance in States that historically have received relatively little Federal research and development funding.

(b) CONTENTS.—The study shall include—

(1) include a review of the previous 5 years of EPSCoR Research Infrastructure Improvement Program applications and awards and shall evaluate—

(A) the demand for hardware, software, network capability and capacity, institutions, and expertise related to cyberinfrastructure at institutions in EPSCoR States; and

(B) the success of RII Track-2 awards in achieving the programmatic goals outlined by the National Science Foundation;

(2) an analysis of the effectiveness of the National Institutes of Health IDeANet initiative in broadening access to high-performance computational resources; and

(3) recommendations for ensuring accessibility and vitality of cyberinfrastructure for scientific research and education.

(c) REPORT.—The Committee shall submit a report containing its findings, conclusions, and recommendations to the Senate Committee on Commerce, Science, and Transportation and the House of Representatives Committee on Science and Technology within 180 days after the date of enactment of this Act.

SEC. 104. INTERAGENCY PUBLIC ACCESS COMMITTEE.

(a) ESTABLISHMENT.—The Director shall establish a working group under the National Science and Technology Council with the responsibility to coordinate Federal science agency research and policies related to the dissemi-

nation and long-term stewardship of the results of unclassified research, including digital data and peer-reviewed scholarly publications, supported wholly, or in part, by funding from the Federal science agencies.

(b) RESPONSIBILITIES.—The working group shall—

(1) identify the specific objectives and public interest being addressed by any policies coordinated under (a) that are not or cannot be made to meet the needs of the private sector;

(2) take into account inherent variability among Federal science agencies and scientific disciplines in the nature of research, types of data, and dissemination models;

(3) coordinate the development or designation of standards for research data, the structure of full text and metadata, navigation tools, and other applications to maximize interoperability across Federal science agencies, across science and engineering disciplines, and between research data and scholarly publications, taking into account existing consensus standards, including international standards;

(4) coordinate Federal science agency programs and activities that support research and education on tools and systems required to ensure preservation

and stewardship of all forms of digital research data, including scholarly publications;

(5) work with international science and technology counterparts to maximize interoperability between United States based unclassified research databases and international databases and repositories;

(6) solicit input and recommendations from, and collaborate with, non-Federal stakeholders, including the public, universities, nonprofit and for-profit publishers, libraries, federally funded and non-federally funded research scientists, and other organizations and institutions with a stake in long term preservation and access to the results of federally funded research;

(7) establish priorities for coordinating the development of any Federal science agency policies related to public access to the results of federally funded research to maximize the benefits of such policies with respect to their potential economic or other impact on, the science and engineering enterprise and the stakeholders thereof;

(8) take into consideration the distinction between scholarly publications and digital data;

(9) the role that scientific publishers play in the peer review process in ensuring the integrity of the record of scientific research, including the investments and added value that they make; and

(10) examine Federal agency practices and procedures for providing research reports to the agencies charged with locating and preserving unclassified research.

(c) PATENT OR COPYRIGHT LAW.—Nothing in this section shall be construed to undermine any right under the provisions of title 17 or 35, United States Code.

(d) APPLICATION WITH EXISTING LAW.—Nothing defined in section (b) shall be construed to affect existing law with respect to federal science agencies' policies related to public access.

(e) REPORT TO CONGRESS.—Not later than 1 year after the date of enactment of this Act, the Director shall transmit a report to Congress describing—

(1) the specific objectives and public interest identified under (b)(1);

(2) any priorities established under subsection (b)(7);

(3) the impact the policies described under (a) have had on the science and engineering enterprise

and the stakeholders, including the financial impact on research budgets;

(4) the status of any Federal science agency policies related to public access to the results of federally funded research; and

(5) how any policies developed or being developed by Federal science agencies, as described in subsection (a), incorporate input from the non-Federal stakeholders described in subsection (b)(6).

(f) FEDERAL SCIENCE AGENCY DEFINED.—For the purposes of this section, the term ''Federal science agency'' means any Federal agency with an annual extramural research expenditure of over $100,000,000.

SEC. 105. FEDERAL SCIENTIFIC COLLECTIONS.

(a) MANAGEMENT OF SCIENTIFIC COLLECTIONS.—The Office of Science and Technology Policy shall develop policies for the management and use of Federal scientific collections to improve the quality, organization, access, including online access, and long-term preservation of such collections for the benefit of the scientific enterprise. . In developing those policies the Office of Science and Technology Policy shall consult, as appropriate, with—

(1) Federal agencies with such collections; and

(2) representatives of other organizations, institutions, and other entities not a part of the Federal

Government that have a stake in the preservation, maintenance, and accessibility of such collections, including State and local government agencies, institutions of higher education, museums, and other entities engaged in the acquisition, holding, management, or use of scientific collections.

(b) CLEARINGHOUSE.—The Office of Science and Technology Policy, in consultation with relevant Federal agencies, shall ensure the development of an online clearinghouse for information on the contents of and access to Federal scientific collections.

(c) DISPOSAL OF COLLECTIONS.—The policies developed under subsection (a) shall—

(1) require that, before disposing of a scientific collection, a Federal agency shall—

(A) conduct a review of the research value of the collection; and

(B) consult with researchers who have used the collection, and other potentially interested parties, concerning—

(i) the collection's value for research purposes; and

(ii) possible additional educational uses for the collection; and

(2) include procedures for Federal agencies to transfer scientific collections they no longer need to researchers at institutions or other entities qualified to manage the collections.

(d) COST PROJECTIONS.—The Office of Science and Technology Policy, in consultation with relevant Federal agencies, shall develop a common set of methodologies to be used by Federal agencies for the assessment and projection of costs associated with the management and preservation of their scientific collections.

(e) SCIENTIFIC COLLECTION DEFINED.—In this section, the term ''scientific collection'' means a set of physical specimens, living or inanimate, created for the purpose of supporting science and serving as a long-term research asset, rather than for their market value as collectibles or their historical, artistic, or cultural significance, and, as appropriate and feasible, the associated specimen data and materials.

SEC. 106. PRIZE COMPETITIONS.

The Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3701 et seq.) is amended by adding at the end the following:

''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 fur-

ther 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 dur-

ing 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 FACA.—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 appro-

priated 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 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.

''(3) REPEAL OF SPACE ACT LIMITATION.—Section 314(a) of the National Aeronautics and Space Act of 1958 (42 U.S.C. 2459f–1 is amended by striking ''The Administration may carry out a program to award prizes only in conformity with this section.''.

''(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.''.

TITLE II—NATIONAL AERONAUTICS AND SPACE ADMINISTRATION.

SEC. 201. NASA'S CONTRIBUTION TO INNOVATION AND COMPETITIVENESS.

It is the sense of Congress that a renewed emphasis on technology development would enhance current mission capabilities and enable future missions, while encouraging

~~NASA, private industry, and academia to spur innovation. NASA's Innovative Partnership Program is a valuable mechanism to accelerate technology maturation and encourage the transfer of technology into the private sector.~~

~~SEC. 202. NASA'S CONTRIBUTION TO EDUCATION.~~

~~(a) SENSE OF CONGRESS.—It is the sense of Congress that NASA is uniquely positioned to interest students in science, technology, engineering, and mathematics, not only by the example it sets, but through its education programs.~~

~~(b) EDUCATIONAL PROGRAM GOALS.—NASA shall develop educational programs—~~

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

~~(2) to improve public literacy in those fields;~~

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

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

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

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

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

(5) to create and support opportunities for enhanced and ongoing professional development for teachers using best practices that improve the STEM field content and knowledge of the teachers.

SEC. 203. INTERNATIONAL SPACE STATION'S CONTRIBUTION TO NATIONAL COMPETITIVENESS ENHANCEMENT.

(a) SENSE OF CONGRESS.—It is the sense of the Congress that the International Space Station represents a valuable and unique national asset which can be utilized to increase educational opportunities and scientific and technological innovation which will enhance the Nation's economic security and competitiveness in the global technology fields of endeavor. If the period for active utilization of the International Space Station is extended to at least the year 2020, the potential for such opportunities and innovation would be increased. Efforts should be made to fully realize that potential.

(b) EVALUATION AND ASSESSMENT OF NASA'S INTERAGENCY CONTRIBUTION.—Pursuant to the authority provided in title II of the America COMPETES Act (Public Law 110–69), the Administrator shall evaluate

and, where possible, expand efforts to maximize NASA's contribution to interagency efforts to enhance science, technology, engineering, and mathematics education capabilities, and to enhance the Nation's technological excellence and global competitiveness. The Administrator shall identify these enhancements in the annual reports required by section 2001(c) of that Act (42 U.S.C. 16611a(c)).

(c) REPORT TO THE CONGRESS.—Within 120 days after the date of enactment of this Act, the Administrator shall provide to the House of Representatives Committee on Science and Technology and the Senate Committee on Commerce, Science, and Transportation a report on the assessment made pursuant to subsection (a). The report shall include—

(1) a description of current and potential activities associated with utilization of the International Space Station which are supportive of the goals of educational excellence and innovation and competitive enhancement established or reaffirmed by this Act, including a summary of the goals supported, the number of individuals or organizations participating in or benefiting from such activities, and a summary of how such activities might be expanded or improved upon;

(2) a description of government and private partnerships which are, or may be, established to effectively utilize the capabilities represented by the International Space Station to enhance United States competitiveness, innovation and science, technology, engineering, and mathematics education; and

(3) a summary of proposed actions or activities to be undertaken to ensure the maximum utilization of the International Space Station to contribute to fulfillment of the goals and objectives of this Act, and the identification of any additional authority, assets, or funding that would be required to support such activities.

SEC. 204. DEFINITIONS.

In this title:

(1) ADMINISTRATOR.—The term ''Administrator'' means the Administrator of NASA.

(2) NASA.—The term ''NASA'' means the National Aeronautics and Space Administration.

TITLE III—OCEAN AND ATMOSPHERIC PROGRAMS

SEC. 301. OCEANIC AND ATMOSPHERIC RESEARCH AND DEVELOPMENT PROGRAM.

Section 4001 of the America COMPETES Act (33 U.S.C. 893) is amended—

(1) by inserting ''(a) IN GENERAL.—'' before ''The Administrator''; and

(2) by adding at the end the following:

''(b) OCEAN 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. 302. OCEAN AND ATMOSPHERIC SCIENCE EDUCATION PROGRAMS.

Section 4002 of the America COMPETES Act (33 U.S.C. 893a) is amended—

(1) by striking ''the agency.'' in subsection (a) and inserting ''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.'';

(2) by redesignating subsections (b) and (c) as subsections (c) and (d), respectively;

(3) by inserting after subsection (a) the following:

''(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.'';

(4) by striking ''develop'' in subsection (c), as redesignated, and inserting ''maintain''; and

(5) by adding at the end thereof the following:

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

SEC. 303. WORKFORCE STUDY.

(a) IN GENERAL.—The Secretary of Commerce, in cooperation with the Secretary of Education, shall request the National Academy of Sciences to conduct a study on the scientific workforce in the areas of oceanic and atmospheric research and development. The study shall investigate—

(1) whether there is a shortage in the number of individuals with advanced degrees in oceanic and atmospheric sciences who have the ability to conduct high quality scientific research in physical and chemical oceanography, meteorology, and atmospheric modeling, and related fields, for government, nonprofit, and private sector entities;

(2) what Federal programs are available to help facilitate the education of students hoping to pursue these degrees;

(3) barriers to transitioning highly qualified oceanic and atmospheric scientists into Federal civil service scientist career tracks;

(4) what institutions of higher education, the private sector, and the Congress could do to increase the number of individuals with such post baccalaureate degrees;

(5) the impact of an aging Federal scientist workforce on the ability of Federal agencies to conduct high quality scientific research; and

(6) what actions the Federal government can take to assist the transition of highly qualified scientists into Federal career scientist positions and ensure that the experiences of retiring Federal sci-

entists are adequately documented and transferred prior to retirement from Federal service.

(b) COORDINATION.—The Secretary and the Secretary of Education shall consult with the heads of other Federal agencies and departments with oceanic and atmospheric expertise or authority in preparing the specifications for the study.

(c) REPORT.—No later than 18 months after the date of enactment of this Act, the Secretary and the Secretary of Education shall transmit a joint report to each committee of Congress with jurisdiction over the programs described in 4002(b) of the America COMPETES Act (33 U.S.C. 893a(b)), as amended by section 302 of this Act, detailing the findings and recommendations of the study and setting forth a prioritized plan to implement the recommendations.

(d) PROGRAM AND PLAN.—The Administrator shall evaluate the National Academy of Sciences study and develop a workforce program and plan to institutionalize the Administration's Federal science career pathways and address aging workforce issues. The program and plan shall be developed in consultation with the Administration's cooperative institutes and other academic partners to identify and implement programs and mechanisms to ensure that—

(1) sufficient highly qualified scientists are able to transition into Federal career scientist positions in the Administration's laboratories and programs; and

(2) the technical and management experiences of senior employees are documented and transferred before leaving Federal service.

TITLE IV—NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY

SEC. 401. SHORT TITLE.

This title may be cited as the ''National Institute of Standards and Technology Authorization Act of 2010''.

SEC. 402. AUTHORIZATION OF APPROPRIATIONS.

(a) FISCAL YEAR 2011.—

(1) IN GENERAL.—There are authorized to be appropriated to the Secretary of Commerce $1,000,500,000 for the National Institute of Standards and Technology for fiscal year 2011.

(2) SPECIFIC ALLOCATIONS.—Of the amount authorized by paragraph (1)—

(A) $625,500,000 shall be authorized for scientific and technical research and services laboratory activities;

(B) $125,000,000 shall be authorized for the construction and maintenance of facilities; and

(C) $250,000,000 shall be authorized for industrial technology services activities, of which—

(i) $95,000,000 shall be authorized for the Technology Innovation Program under section 28 of the National Institute of Standards and Technology Act (15 U.S.C. 278n);

(ii) $145,000,000 shall be authorized for the Manufacturing Extension Partnership program under sections 25 and 26 of such Act (15 U.S.C. 278k and 278l), of which not more than $5,000,000 shall be for the competitive grant program under section 25(f) of such Act; and

(iii) $10,000,000 shall be authorized for the Malcolm Baldrige National Quality Award program under section 17 of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3711a).

(b) FISCAL YEAR 2012.—

(1) IN GENERAL.—There are authorized to be appropriated to the Secretary of Commerce $1,024,100,000 for the National Institute of Standards and Technology for fiscal year 2012.

(2) SPECIFIC ALLOCATIONS.—Of the amount authorized by paragraph (1)—

(A) $669,100,000 shall be authorized for scientific and technical research and services laboratory activities;

(B) $85,000,000 shall be authorized for the construction and maintenance of facilities; and

(C) $270,300,000 shall be authorized for industrial technology services activities, of which—

(i) $105,000,000 shall be authorized for the Technology Innovation Program under section 28 of the National Institute of Standards and Technology Act (15 U.S.C. 278n);

(ii) $155,000,000 shall be authorized for the Manufacturing Extension Partnership program under sections 25 and 26 of such Act (15 U.S.C. 278k and 278l), of which not more than $5,000,000 shall be

for the competitive grant program under section 25(f) of such Act; and

(iii) $10,300,000 shall be authorized for the Malcolm Baldrige National Quality Award program under section 17 of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3711a).

(c) FISCAL YEAR 2013.—

(1) IN GENERAL.—There are authorized to be appropriated to the Secretary of Commerce $1,128,409,000 for the National Institute of Standards and Technology for fiscal year 2013.

(2) SPECIFIC ALLOCATIONS.—Of the amount authorized by paragraph (1)—

(A) $715,800,000 shall be authorized for scientific and technical research and services laboratory activities;

(B) $122,000,000 shall be authorized for the construction and maintenance of facilities; and

(C) $290,609,000 shall be authorized for industrial technology services activities, of which—

(i) $115,000,000 shall be authorized for the Technology Innovation Program

under section 28 of the National Institute of Standards and Technology Act (15 U.S.C. 278n);

(ii) $165,000,000 shall be authorized for the Manufacturing Extension Partnership program under sections 25 and 26 of such Act (15 U.S.C. 278k and 278l), of which not more than $5,000,000 shall be for the competitive grant program under section 25(f) of such Act; and

(iii) $10,609,000 shall be authorized for the Malcolm Baldrige National Quality Award program under section 17 of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3711a).

SEC. 403. UNDER SECRETARY OF COMMERCE FOR STANDARDS AND TECHNOLOGY.

(a) ESTABLISHMENT.—Section 4 of the National Institute of Standards and Technology Act is amended to read as follows:

"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).''.

(b) CONFORMING AMENDMENTS.—

(1) TITLE 5, UNITED STATES CODE.—

(A) LEVEL III.—Section 5314 of title 5, United States Code, is amended by inserting before the item ''Associate Attorney General'' the following:

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

(B) LEVEL IV.—Section 5315 of title 5, United States Code, is amended by striking ''Director, National Institute of Standards and Technology, Department of Commerce.''.

(2) NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY ACT.—Section 5 of the National Institute of Standards and Technology Act (15 U.S.C. 274) is amended by striking the first, fifth, and sixth sentences.

SEC. 404. MANUFACTURING EXTENSION PARTNERSHIP.

(a) COMMUNITY COLLEGE SUPPORT.—Section 25(a) of the National Institute of Standards and Technology Act (15 U.S.C. 278k(a)) is amended—

(1) by striking ''and'' after the semicolon in paragraph (4);

(2) by striking ''Institute.'' in paragraph (5) and inserting ''Institute; and''; and

(3) by adding at the end the following:

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

(b) INNOVATIVE SERVICES INITIATIVE.—Section 25 of such Act (15 U.S.C. 278k) is amended by adding at the end the following:

"(g) INNOVATIVE SERVICES INITIATIVE.—

"(1) ESTABLISHMENT.—The Director may 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 and environmental waste to improve profitability; and

"(B) accelerating the domestic commercialization of new product technologies, including components for renewable energy 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.".

(c) REPORTS.—Section 25 of such Act (15 U.S.C. 278k), as amended by subsection (b), is further amended by adding at the end the following:

"(h) REPORTS.—

"(1) IN GENERAL.—In submitting the 3-year programmatic planning document and annual up-

dates 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))."

(d) HOLLINGS MANUFACTURING EXTENSION PARTNERSHIP PROGRAM COST-SHARING.—Section 25(c) of such Act (15 U.S.C. 278k(c)) is amended by adding at the end the following:

"(7) Notwithstanding paragraphs (1), (3), and (5), for fiscal year 2011 through fiscal year 2013, the Secretary may not provide to a Center more than 50 percent of the costs incurred by that Center and may not require that a Center's cost share exceed 50 percent.

"(8) Not later than 2 years after the date of enactment of the National Institute of Standards and Technology Authorization Act of 2010, the Secretary 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 cost share structure in place under paragraph (7), and the effect of such cost share structures on individual Centers and the overall program; and

"(B) include a recommendation for how best to structure the cost share requirement after fiscal year 2013 to provide for the long-term sustainability of the program.".

(c) ADVISORY BOARD.—Section 25(c)(4) of such Act (15 U.S.C. 278k(c)(4)) is amended to read as follows:

"(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.".

(f) DESIGNATION OF PROGRAM.—

(1) IN GENERAL.—Section 25 of the National Institute of Standards and Technology Act (15

U.S.C. 278k), as amended by subsection (c), is further amended by adding at the end the following:

''(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').''.

(2) CONFORMING AMENDMENT TO CONSOLIDATED APPROPRIATIONS ACT, 2005.—Division B of title H of the Consolidated Appropriations Act, 2005 (Public Law 108–447; 118 Stat. 2879; 15 U.S.C. 278k note) is amended under the heading ''INDUSTRIAL TECHNOLOGY SERVICES'' by striking ''2007: *Provided further,* That'' and all that follows through ''Extension Centers.'' and inserting ''2007.''.

(3) TECHNICAL AMENDMENTS.—

(A) Section 25(a) of the National Institute of Standards and Technology Act (15 U.S.C. 278k(a)) is amended in the matter preceding

paragraph (1) by striking ''Regional Centers for the Transfer of Manufacturing Technology'' and inserting ''regional centers for the transfer of manufacturing technology''.

(B) Section 25 of such Act (15 U.S.C. 278k), as amended by subsection (f), is further amended by adding at the end the following:

''(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.''.

(h) EVALUATION OF OBSTACLES UNIQUE TO SMALL MANUFACTURERS.—Section 25 of such Act (15 U.S.C. 278k), as amended by subsection (g), is further amended by adding at the end the following:

''(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.''.

(i) NIST ACT AMENDMENT.—Section 25(f)(3) of the National Institute of Standards and Technology Act (15 U.S.C. 278k(f)(3)) is amended by striking ''Director of the Centers program,'' and inserting ''Director of the Hollings MEP program,''.

SEC. 405. EMERGENCY COMMUNICATION AND TRACKING TECHNOLOGIES RESEARCH INITIATIVE.

(a) ESTABLISHMENT.—The Director shall 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, such as high-rise buildings or collapsed structures, where conventional radio communication is limited.

(b) ACTIVITIES.—In order to carry out this section, the Director shall work with the private sector and appropriate Federal agencies to—

(1) perform a needs assessment to identify and evaluate the measurement, technical standards, and conformity assessment needs required to improve the

operation and reliability of such emergency communication and tracking technologies;

(2) support the development of technical standards and conformance architecture to improve the operation and reliability of such emergency communication and tracking technologies; and

(3) incorporate and build upon existing reports and studies on improving emergency communications.

(c) REPORT.—Not later than 18 months after the date of enactment of this Act, the Director shall submit to Congress and make publicly available a report describing the assessment performed under subsection (b)(1) and making recommendations about research priorities to address gaps in the measurement, technical standards, and conformity assessment needs identified by the assessment.

SEC. 406. BROADENING PARTICIPATION.

(a) RESEARCH FELLOWSHIPS.—Section 18 of the National Institute of Standards and Technology Act (15 U.S.C. 278g–1) is amended by adding at the end the following:

"(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.''.

(b) POSTDOCTORAL FELLOWSHIP PROGRAM.—Section 19 of such Act (15 U.S.C. 278g–2) is amended by adding at the end the following: ''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.''.

(c) TEACHER DEVELOPMENT.—Section 19A(c) of such Act (15 U.S.C. 278g–2a(c)) is amended by adding at the end the following: ''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).''.

SEC. 407. NIST FELLOWSHIPS.

(a) POST-DOCTORAL FELLOWSHIP PROGRAM.—Section 19 of the National Institute of Standards and Technology Act (15 U.S.C. 278g) is amended by striking ''in conjunction with the National Academy of Sciences,''.

(b) RESEARCH FELLOWSHIPS.—Section 18(a) of that Act (15 U.S.C. 278g(a)) is amended by striking ''up to 1.5 percent of the''.

(c) COMMERCE, SCIENCE, AND TECHNOLOGY FELLOWSHIP PROGRAM.—Section 5163(d) of the Omnibus

Trade and Competition Act of 1988 (15 U.S.C. 1533) is repealed.

SEC. 408. GREEN MANUFACTURING AND CONSTRUCTION.

The Director shall carry out a green manufacturing and construction initiative—

(1) to develop accurate sustainability metrics and practices for use in manufacturing;

(2) to advance the development of standards and the creation of an information infrastructure to communicate sustainability information about suppliers; and

(3) to improve energy performance, service life, and indoor air quality of new and retrofitted buildings through validated measurement data.

SEC. 409. CYBERSECURITY COMPETITION AND CHALLENGE.

(a) IN GENERAL.—The Director of the National Institute of Standards and Technology, directly or through appropriate Federal entities, shall establish cybersecurity competitions and challenges with cash prizes in order to—

(1) attract, identify, evaluate, and recruit talented individuals for the Federal information technology workforce; and

(2) stimulate innovation in basic and applied cybersecurity research, technology development, and prototype demonstration that have the potential for

application to the Federal information technology activities of the Federal Government.

(b) TYPES OF COMPETITIONS AND CHALLENGES.—The Director shall establish different competitions and challenges targeting the following groups:

(1) High school students.

(2) Undergraduate students.

(3) Graduate students.

(4) Academic and research institutions.

(c) TOPICS.—In selecting topics for prize competitions, the Director shall consult widely both within and outside the Federal Government, and may empanel advisory committees.

(d) USE OF FEDERAL INSIGNIA.—A registered participant in a competition under this section may use any Federal agency's name, initials, or insignia only after prior review and written approval by the Director.

(e) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the National Institute of Standards and Technology to carry out this section $15,000,000 for each of fiscal years 2011 through 2013.

SEC. 410. DEFINITIONS.

In this title:

(1) DIRECTOR.—The term ''Director'' means the Director of the National Institute of Standards and Technology.

(2) FEDERAL AGENCY.—The term ''Federal agency'' has the meaning given such term in section 4 of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3703).

TITLE V—NATIONAL SCIENCE FOUNDATION

SEC. 501. SHORT TITLE.

This title may be cited as the ''National Science Foundation Authorization Act of 2010''.

SEC. 502. DEFINITIONS.

In this title:

(1) FOUNDATION.—The term ''Foundation'' means the National Science Foundation established under section 2 of the National Science Foundation Act of 1950 (42 U.S.C. 1861).

(2) INSTITUTION OF HIGHER EDUCATION.—The term ''institution of higher education'' has the meaning given such term in section 101(a) of the Higher Education Act of 1965 (20 U.S.C. 1001(a)).

(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.

(4) UNITED STATES.—The term ''United States'' means 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, and any other territory or possession of the United States.

SEC. 503. AUTHORIZATION OF APPROPRIATIONS.

(a) FISCAL YEAR 2011.—

(1) IN GENERAL.—There are authorized to be appropriated to the Foundation $8,254,000,000 for fiscal year 2011.

(2) SPECIFIC ALLOCATIONS.—Of the amount authorized by paragraph (1)—

(A) $6,614,000,000 shall be made available to carry research and related activities;

(B) $1,038,000,000 shall be made available for education and human resources;

(C) $219,100,000 shall be made available for major research equipment and facilities construction;

(D) $362,400,000 shall be made available for agency operations and award management;

(E) $5,105,000 shall be made available for the Office of the National Science Board; and

(F) $15,640,000 shall be made available for the Office of Inspector General.

(b) FISCAL YEAR 2012.—

(1) IN GENERAL.—There are authorized to be appropriated to the Foundation $9,073,000,000 for fiscal year 2012.

(2) SPECIFIC ALLOCATIONS.—Of the amount authorized by paragraph (1)—

(A) $7,270,000,000 shall be made available to carry research and related activities;

(B) $1,141,000,000 shall be made available for education and human resources;

(C) $240,800,000 shall be made available for major research equipment and facilities construction;

(D) $398,400,000 shall be made available for agency operations and award management;

(E) $5,612,000 shall be made available for the Office of the National Science Board; and

(F) $17,190,000 shall be made available for the Office of Inspector General.

(c) FISCAL YEAR 2013.—

(1) IN GENERAL.—There are authorized to be appropriated to the Foundation $9,943,000,000 for fiscal year 2013.

(2) SPECIFIC ALLOCATIONS.—Of the amount authorized by paragraph (1)—

(A) $7,967,000,000 shall be made available to carry research and related activities;

(B) $1,251,000,000 shall be made available for education and human resources;

(C) $263,900,000 shall be made available for major research equipment and facilities construction;

(D) $436,600,000 shall be made available for agency operations and award management;

(E) $6,150,000 shall be made available for the Office of the National Science Board; and

(F) $18,840,000 shall be made available for the Office of Inspector General.

SEC. 504. NATIONAL SCIENCE BOARD ADMINISTRATIVE AMENDMENTS.

(a) STAFFING AT THE NATIONAL SCIENCE BOARD.—Section 4(g) of the National Science Foundation Act of 1950 (42 U.S.C. 1863(g)) is amended by striking ''not more than 5''.

(b) NATIONAL SCIENCE BOARD REPORTS.—Section 4(j)(2) of the National Science Foundation Act of 1950 (42 U.S.C. 1863(j)(2)) is amended by inserting ''within the authority of the Foundation (or otherwise as requested by the Congress or the President)'' after ''individual policy matters''.

(c) BOARD ADHERENCE TO SUNSHINE ACT.—Section 15(a)(2) of the National Science Foundation Authorization Act of 2002 (42 U.S.C. 1862n–5(a)(2)) is amended—

(1) by striking ''The Board'' and inserting ''To ensure transparency of the Board's entire decision-making process, including deliberations on Board business occurring within its various subdivisions, the Board''; and

(2) by adding at the end the following: ''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.''.

SEC. 505. NATIONAL CENTER FOR SCIENCE AND ENGINEERING STATISTICS.

(a) ESTABLISHMENT.—There is established within the Foundation a National Center for Science and Engineering Statistics that shall serve as a central Federal

clearinghouse for the collection, interpretation, analysis, and dissemination of objective data on science, engineering, technology, and research and development.

(b) DUTIES.—In carrying out subsection (a) of this section, the Director, acting through the Center shall—

(1) collect, acquire, analyze, report, and disseminate statistical data related to the science and engineering enterprise in the United States and other nations that is relevant and useful to practitioners, researchers, policymakers, and the public, including statistical data on—

(A) research and development trends;

(B) the science and engineering workforce;

(C) United States competitiveness in science, engineering, technology, and research and development; and

(D) the condition and progress of United States STEM education;

(2) support research using the data it collects, and on methodologies in areas related to the work of the Center; and

(3) support the education and training of researchers in the use of large-scale, nationally representative data sets.

(c) STATISTICAL REPORTS.—The Director or the National Science Board, acting through the Center, shall issue regular, and as necessary, special statistical reports on topics related to the national and international science and engineering enterprise such as the biennial report required by section 4(j)(1) of the National Science Foundation Act of 1950 (42 U.S.C. 1863(j)(1)) on indicators of the state of science and engineering in the United States.

SEC. 506. NATIONAL SCIENCE FOUNDATION MANUFACTURING RESEARCH AND EDUCATION.

(a) MANUFACTURING RESEARCH.—The Director shall carry out a program to award merit-reviewed, competitive grants to institutions of higher education to support fundamental research leading to transformative advances in manufacturing technologies, processes, and enterprises that will support United States manufacturing through improved performance, productivity, sustainability, and competitiveness. Research areas may include—

(1) nanomanufacturing;

(2) manufacturing and construction machines and equipment, including robotics, automation, and other intelligent systems;

(3) manufacturing enterprise systems;

(4) advanced sensing and control techniques;

(5) materials processing; and

(6) information technologies for manufacturing, including predictive and real-time models and simulations, and virtual manufacturing.

(b) MANUFACTURING EDUCATION.—In order to help ensure a well-trained manufacturing workforce, the Director shall award grants to strengthen and expand scientific and technical education and training in advanced manufacturing, including through the Foundation's Advanced Technological Education program.

SEC. 507. NATIONAL SCIENCE BOARD REPORT ON MID-SCALE INSTRUMENTATION.

(a) MID-SCALE RESEARCH INSTRUMENTATION NEEDS.—The National Science Board shall evaluate the needs, across all disciplines supported by the Foundation, for mid-scale research instrumentation that falls between the instruments funded by the Major Research Instrumentation program and the very large projects funded by the Major Research Equipment and Facilities Construction program.

(b) REPORT ON MID-SCALE RESEARCH INSTRUMENTATION PROGRAM.—Not later than 1 year after the date of enactment of this Act, the National Science Board shall submit to Congress a report on mid-scale research instru-

mentation at the Foundation. At a minimum, this report shall include—

(1) the findings from the Board's evaluation of instrumentation needs required under subsection (a), including a description of differences across disciplines and Foundation research directorates;

(2) a recommendation or recommendations regarding how the Foundation should set priorities for mid-scale instrumentation across disciplines and Foundation research directorates;

(3) a recommendation or recommendations regarding the appropriateness of expanding existing programs, including the Major Research Instrumentation program or the Major Research Equipment and Facilities Construction program, to support more instrumentation at the mid-scale;

(4) a recommendation or recommendations regarding the need for and appropriateness of a new, Foundation-wide program or initiative in support of mid-scale instrumentation, including any recommendations regarding the administration of and budget for such a program or initiative and the appropriate scope of instruments to be funded under such a program or initiative; and

(5) any recommendation or recommendations regarding other options for supporting mid-scale research instrumentation at the Foundation.

SEC. 508. PARTNERSHIPS FOR INNOVATION.

(a) IN GENERAL.—The Director shall carry out a program to award merit-reviewed, competitive grants to institutions of higher education to establish and to expand partnerships that promote innovation and increase the economic and social impact of research by developing tools and resources to connect new scientific discoveries to practical uses.

(b) PARTNERSHIPS.—

(1) IN GENERAL.—To be eligible for funding under this section, an institution of higher education must propose establishment of a partnership that—

(A) includes at least one private sector entity; and

(B) may include other institutions of higher education, public sector institutions, private sector entities, and social enterprise nonprofit organizations.

(2) PRIORITY.—In selecting grant recipients under this section, the Director shall give priority to partnerships that include one or more institutions of higher education that are among the 100 institu-

tions receiving, over the 3-year period immediately preceding the awarding of grants, the highest amount of research funding from the Foundation and at least one of the following:

(A) A minority serving institution.

(B) A primarily undergraduate institution.

(C) A 2-year institution of higher education.

(c) PROGRAM.—Proposals funded under this section shall seek—

(1) to increase the economic or social impact of the most promising research at the institution or institutions of higher education that are members of the partnership through knowledge transfer or commercialization;

(2) to increase the engagement of faculty and students across multiple disciplines and departments, including faculty and students in schools of business and other appropriate non-STEM fields and disciplines in knowledge transfer activities;

(3) to enhance education and mentoring of students and faculty in innovation and entrepreneurship through networks, courses, and development of best practices and curricula;

(4) to strengthen the culture of the institution or institutions of higher education to undertake and participate in activities related to innovation and leading to economic or social impact;

(5) to broaden the participation of all types of institutions of higher education in activities to meet STEM workforce needs and promote innovation and knowledge transfer; and

(6) to build lasting partnerships with local and regional businesses, local and State governments, and other relevant entities.

(d) ADDITIONAL CRITERIA.—In selecting grant recipients under this section, the Director shall also consider the extent to which the applicants are able to demonstrate evidence of institutional support for, and commitment to—

(1) achieving the goals of the program as described in subsection (c);

(2) expansion to an institution-wide program if the initial proposal is not for an institution-wide program; and

(3) sustaining any new innovation tools and resources generated from funding under this program.

(c) LIMITATION.—No funds provided under this section may be used to construct or renovate a building or structure.

SEC. 509. GREEN CHEMISTRY BASIC RESEARCH.

The Director shall establish a Green Chemistry Basic Research program to award competitive, merit-based grants to support research into green and sustainable chemistry which will lead to clean, safe, and economical alternatives to traditional chemical products and practices. The research program shall provide sustained support for green chemistry research, education, and technology transfer through—

(1) merit-reviewed competitive grants to individual investigators and teams of investigators, including, to the extent practicable, young investigators, for research;

(2) grants to fund collaborative research partnerships among universities, industry, and nonprofit organizations;

(3) symposia, forums, and conferences to increase outreach, collaboration, and dissemination of green chemistry advances and practices; and

(4) education, training, and retraining of undergraduate and graduate students and professional chemists and chemical engineers, including through

partnerships with industry, in green chemistry science and engineering.

SEC. 510. GRADUATE STUDENT SUPPORT.

(a) FINDING.—The Congress finds that—

(1) the Integrative Graduate Education and Research Traineeship program is an important program for training the next generation of scientists and engineers in team-based interdisciplinary research and problem solving, and for providing them with the many additional skills, such as communication skills, needed to thrive in diverse STEM careers; and

(2) the Integrative Graduate Education and Research Traineeship program is no less valuable to the preparation and support of graduate students than the Foundation's Graduate Research Fellowship program.

(b) EQUAL TREATMENT OF IGERT AND GRF.—Beginning in fiscal year 2011, the Director shall increase or, if necessary, decrease funding for the Foundation's Integrative Graduate Education and Research Traineeship program (or any program by which it is replaced) at least at the same rate as it increases or decreases funding for the Graduate Research Fellowship program.

(c) SUPPORT FOR GRADUATE STUDENT RESEARCH FROM THE RESEARCH ACCOUNT.—For each of the fiscal years 2011 through 2013, at least 50 percent of the total Foundation funds allocated to the Integrative Graduate Education and Research Traineeship program and the Graduate Research Fellowship program shall come from funds appropriated for Research and Related Activities.

(d) COST OF EDUCATION ALLOWANCE FOR GRF PROGRAM.—Section 10 of the National Science Foundation Act of 1950 (42 U.S.C. 1869) is amended—

(1) by inserting ''(a) IN GENERAL.—'' before ''The Foundation is authorized''; and

(2) by adding at the end the following:

''(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.''.

SEC. 511. ROBERT NOYCE TEACHER SCHOLARSHIP PROGRAM.

(a) MATCHING REQUIREMENT.—Section 10A(h)(1) of the National Science Foundation Authorization Act of

2002 (42 U.S.C. 1862n–1a(h)(1)) is amended to read as follows:

"(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.".

(b) RETIRING STEM PROFESSIONALS.—Section 10A of the National Science Foundation Authorization Act of 2002 (42 U.S.C. 1862n–1a) is amended in subsection (a)(2)(A) by inserting "including retiring professionals in those fields," after "mathematics professionals,".

SEC. 512 UNDERGRADUATE BROADENING PARTICIPATION PROGRAM.

The Foundation shall continue to support the Historically Black Colleges and Universities Undergraduate Program, the Louis Stokes Alliances for Minority Partici-

pation program, and the Tribal Colleges and Universities Program as separate programs.

SEC. 513. RESEARCH EXPERIENCES FOR HIGH SCHOOL STUDENTS.

The Director shall permit specialized STEM high schools conducting research to participate in major data collection initiatives from universities, corporations, or government labs under a research grant from the Foundation, as part of the research proposal.

SEC. 514. RESEARCH EXPERIENCES FOR UNDERGRADUATES.

(a) RESEARCH SITES.—The Director shall award grants, on a merit-reviewed, competitive basis, to institutions of higher education, nonprofit organizations, or consortia of such institutions and organizations, for sites designated by the Director to provide research experiences for 6 or more undergraduate STEM students for sites designated at primarily undergraduate institutions of higher education and 10 or more undergraduate STEM students for all other sites, with consideration 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). The Director shall ensure that—

(1) at least half of the students participating in a program funded by a grant under this subsection at each site shall be recruited from institutions of higher education where research opportunities in STEM are limited, including 2-year institutions;

(2) the awards provide undergraduate research experiences in a wide range of STEM disciplines;

(3) the awards support a variety of projects, including independent investigator-led projects, interdisciplinary projects, and multi-institutional projects (including virtual projects);

(4) students participating in each program funded have mentors, including during the academic year to the extent practicable, to help connect the students' research experiences to the overall academic course of study and to help students achieve success in courses of study leading to a baccalaureate degree in a STEM field;

(5) mentors and students are supported with appropriate salary or stipends; and

(6) student participants are tracked, for employment and continued matriculation in STEM fields, through receipt of the undergraduate degree and for at least 3 years thereafter.

(b) INCLUSION OF UNDERGRADUATES IN STANDARD RESEARCH GRANTS.—The Director shall require that every recipient of a research grant from the Foundation proposing to include 1 or more students enrolled in certificate, associate, or baccalaureate degree programs in carrying out the research under the grant shall request support, including stipend support, for such undergraduate students as part of the research proposal itself rather than as a supplement to the research proposal, unless such undergraduate participation was not foreseeable at the time of the original proposal.

SEC. 515. STEM INDUSTRY INTERNSHIP PROGRAMS.

(a) IN GENERAL.—The Director may award grants, on a competitive, merit-reviewed basis, to institutions of higher education, or consortia thereof, to establish or expand partnerships with local or regional private sector entities, for the purpose of providing undergraduate students with integrated internship experiences that connect private sector internship experiences with the students' STEM coursework. The partnerships may also include industry or professional associations.

(b) INTERNSHIP PROGRAM.—The grants awarded under section (a) may include internship programs in the manufacturing sector.

(c) USE OF GRANT FUNDS.—Grants under this section may be used—

(1) to develop and implement hands-on learning opportunities;

(2) to develop curricula and instructional materials related to industry, including the manufacturing sector;

(3) to perform outreach to secondary schools;

(4) to develop mentorship programs for students with partner organizations; and

(5) to conduct activities to support awareness of career opportunities and skill requirements.

(d) PRIORITY.—In awarding grants under this section, the Director shall give priority to institutions of higher education or consortia thereof that demonstrate significant outreach to and coordination with local or regional private sector entities and Regional Centers for the Transfer of Manufacturing Technology established by section 25(a) of the National Institute of Standards and Technology Act (15 U.S.C. 278k(a)) in developing academic courses designed to provide students with the skills or certifications necessary for employment in local or regional companies.

(e) OUTREACH TO RURAL COMMUNITIES.—The Foundation shall conduct outreach to institutions of high-

er education and private sector entities in rural areas to encourage those entities to participate in partnerships under this section.

(d) COST-SHARE.—The Director shall require a 50 percent non-Federal cost-share from partnerships established or expanded under this section.

(e) RESTRICTION.—No Federal funds provided under this section may be used—

(1) for the purpose of providing stipends or compensation to students for private sector internships; or

(2) as payment or reimbursement to private sector entities, except for institutions of higher education.

(f) REPORT.—Not less than 3 years after the date of enactment of this Act, the Director shall submit a report to Congress on the number and total value of awards made under this section, the number of students affected by those awards, any evidence of the effect of those awards on workforce preparation and jobs placement for participating students, and an economic and ethnic breakdown of the participating students.

SEC. 516. CYBER-ENABLED LEARNING FOR NATIONAL CHALLENGES.

The Director shall, in consultation with appropriate Federal agencies, identify ways to use cyber-enabled learning to create an innovative STEM workforce and to help retrain and retain our existing STEM workforce to address national challenges, including national security and competitiveness.

SEC. 517. FEDERAL CYBERSECURITY RESEARCH AND DEVELOPMENT.

(a) FUNDAMENTAL CYBERSECURITY RESEARCH.—The Director of the National Science Foundation shall give priority to computer and information science and engineering research to ensure substantial support is provided to meet the following challenges in cybersecurity:

(1) How to design and build complex software-intensive systems that are secure and reliable when first deployed.

(2) How to test and verify that software, whether developed locally or obtained from a third party, is free of significant known security flaws.

(3) How to test and verify that software obtained from a third party correctly implements stated functionality, and only that functionality.

(4) How to guarantee the privacy of an individual's identity, information, or lawful transactions

when stored in distributed systems or transmitted over networks.

(5) How to build new protocols to enable the Internet to have robust security as one of its key capabilities.

(6) How to determine the origin of a message transmitted over the Internet.

(7) How to support privacy in conjunction with improved security.

(8) How to address the growing problem of insider threat.

(b) SECURE CODING RESEARCH.—The Director shall support research that evaluates selected secure coding education and improvement programs. The Director shall also support research on new methods of integrating secure coding improvement into the core curriculum of computer science programs and of other programs where graduates have a substantial probability of developing software after graduation.

(c) ASSESSMENT OF SECURE CODING EDUCATION IN COLLEGES AND UNIVERSITIES.—Within one year after the date of enactment of this Act, the Director shall submit to the Senate Committee on Commerce, Science, and Transportation and the House of Representatives Committee on Science and Technology a report on the state

of secure coding education in America's colleges and universities for each school that received National Science Foundation funding in excess of $1,000,000 during fiscal year 2008. The report shall include—

(1) the number of students who earned undergraduate degrees in computer science or in each other program where graduates have a substantial probability of being engaged in software design or development after graduation;

(2) the percentage of those students who completed substantive secure coding education or improvement programs during their undergraduate experience; and

(3) descriptions of the length and content of the education and improvement programs, and a measure of the effectiveness of those programs in enabling the students to master secure coding and design.

(d) CYBERSECURITY MODELING AND TESTBEDS.—The Director shall establish a program to award grants to institutions of higher education to establish cybersecurity testbeds capable of realistic modeling of real-time cyber attacks and defenses. The purpose of this program is to support the rapid development of new cybersecurity defenses, techniques, and processes by improving under-

standing and assessing the latest technologies in a real-world environment. The testbeds shall be sufficiently large in order to model the scale and complexity of real world networks and environments.

(c) NSF COMPUTER AND NETWORK SECURITY RESEARCH GRANT AREAS.—Section 4(a)(1) of the Cybersecurity Research and Development Act (15 U.S.C. 7403(a)(1)) is amended—

(1) by striking "and" after the semicolon in subparagraph (H);

(2) by striking "property." in subparagraph (I) and inserting "property;"; and

(3) by adding at the end the following:

"(J) secure fundamental protocols that are at the heart of inter-network communications and data exchange;

"(K) secure software engineering and software assurance, including—

"(i) programming languages and systems that include fundamental security features;

"(ii) portable or reusable code that remains secure when deployed in various environments;

''(iii) verification and validation technologies to ensure that requirements and specifications have been implemented; and

''(iv) models for comparison and metrics to assure that required standards have been met;

''(L) holistic system security that—

''(i) addresses the building of secure systems from trusted and untrusted components;

''(ii) proactively reduces vulnerabilities;

''(iii) addresses insider threats; and

''(iv) supports privacy in conjunction with improved security;

''(M) monitoring and detection; and

''(N) mitigation and rapid recovery methods.''.

(f) NSF COMPUTER AND NETWORK SECURITY GRANTS.—Section 4(a)(3) of the Cybersecurity Research and Development Act (15 U.S.C. 7403(a)(3)) is amended—

(1) by striking ''and'' in subparagraph (D);

(2) by striking ''2007'' in subparagraph (E) and inserting ''2007;''; and

(3) by adding at the end of the following:

''(F) $150,000,000 for fiscal year 2010;

''(G) $155,000,000 for fiscal year 2011;

''(H) $160,000,000 for fiscal year 2012;

''(I) $165,000,000 for fiscal year 2013; and

''(J) $170,000,000 for fiscal year 2014.''.

(g) COMPUTER AND NETWORK SECURITY CENTERS.—Section 4(b)(7) of such Act (15 U.S.C. 7403(b)(7)) is amended—

(1) by striking ''and'' in subparagraph (D);

(2) by striking ''2007'' in subparagraph (E) and inserting ''2007;''; and

(3) by adding at the end of the following:

''(F) $50,000,000 for fiscal year 2010;

''(G) $52,000,000 for fiscal year 2011;

''(H) $54,000,000 for fiscal year 2012;

''(I) $56,000,000 for fiscal year 2013; and

''(J) $58,000,000 for fiscal year 2014.''.

(h) COMPUTER AND NETWORK SECURITY CAPACITY BUILDING GRANTS.—Section 5(a)(6) of such Act (15 U.S.C. 7404(a)(6)) is amended—

(1) by striking ''and'' in subparagraph (D);

(2) by striking ''2007'' in subparagraph (E) and inserting ''2007;''; and

(3) by adding at the end of the following:

''(F) $40,000,000 for fiscal year 2010;

''(G) $42,000,000 for fiscal year 2011;

''(H) $44,000,000 for fiscal year 2012;

"(I) $46,000,000 for fiscal year 2013; and

"(J) $48,000,000 for fiscal year 2014.".

(i) SCIENTIFIC AND ADVANCED TECHNOLOGY ACT GRANTS.—Section 5(b)(2) of such Act (15 U.S.C. 7404(b)(2)) is amended—

(1) by striking "and" in subparagraph (D);

(2) by striking "2007" in subparagraph (E) and inserting "2007;"; and

(3) by adding at the end of the following:

"(F) $5,000,000 for fiscal year 2010;

"(G) $6,000,000 for fiscal year 2011;

"(H) $7,000,000 for fiscal year 2012;

"(I) $8,000,000 for fiscal year 2013; and

"(J) $9,000,000 for fiscal year 2014.".

(j) GRADUATE TRAINEESHIPS IN COMPUTER AND NETWORK SECURITY RESEARCH.—Section 5(c)(7) of such Act (15 U.S.C. 7404(c)(7)) is amended—

(1) by striking "and" in subparagraph (D);

(2) by striking "2007" in subparagraph (E) and inserting "2007;"; and

(3) by adding at the end of the following:

"(F) $20,000,000 for fiscal year 2010;

"(G) $22,000,000 for fiscal year 2011;

"(H) $24,000,000 for fiscal year 2012;

"(I) $26,000,000 for fiscal year 2013; and

"(J) $28,000,000 for fiscal year 2014.".

(k) CYBERSECURITY FACULTY DEVELOPMENT TRAINEESHIP PROGRAM.—Section 5(e)(9) of such Act (15 U.S.C. 7404(e)(9)) is amended by striking "2007." and inserting "2007 and for each of fiscal years 2010 through 2014.".

(l) NETWORKING AND INFORMATION TECHNOLOGY RESEARCH AND DEVELOPMENT PROGRAM.—Section 204(a)(1) of the High-Performance Computing Act of 1991 (15 U.S.C. 5524(a)(1)) is amended—

(1) by striking "and" after the semicolon in subparagraph (B); and

(2) by inserting after subparagraph (C) the following:

"(D) develop and propose standards and guidelines, and develop measurement techniques and test methods, for enhanced cybersecurity for computer networks and common user interfaces to systems; and".

SEC. 518. FEDERAL CYBER SCHOLARSHIP-FOR-SERVICE PROGRAM.

(a) IN GENERAL.—The Director of the National Science Foundation shall establish a Federal Cyber Scholarship-for-Service program to recruit and train the next

~~generation of Federal information technology workers and security managers.~~

~~(b) PROGRAM DESCRIPTION AND COMPONENTS.—The program—~~

~~(1) shall provide scholarships, that provide full tuition, fees, and a stipend, for up to 1,000 students per year in their pursuit of undergraduate or graduate degrees in the cybersecurity field;~~

~~(2) shall require scholarship recipients, as a condition of receiving a scholarship under the program, to agree to serve in the Federal information technology workforce for a period equal to the length of the scholarship following graduation if offered employment in that field by a Federal agency;~~

~~(3) shall provide opportunities for students to receive temporary appointments for meaningful employment in the Federal information technology workforce during school vacation periods and for internships;~~

~~(4) shall provide a procedure for identifying promising K–12 students for participation in summer work and internship programs that would lead to certification of Federal information technology workforce standards and possible future employment; and~~

(5) shall examine and develop, if appropriate, programs to promote computer security awareness in secondary and high school classrooms.

(c) HIRING AUTHORITY.—For purposes of any law or regulation governing the appointment of individuals in the Federal civil service, upon the successful completion of their studies, students receiving a scholarship under the program shall be hired under the authority provided for in section 213.3102(r) of title 5, Code of Federal Regulations, and be exempt from competitive service. Upon fulfillment of the service term, such individuals shall be converted to a competitive service position without competition if the individual meets the requirements for that position.

(d) ELIGIBILITY.—To be eligible to receive a scholarship under this section, an individual shall—

(1) be a citizen of the United States; and

(2) demonstrate a commitment to a career in improving the Nation's cyber defenses.

(e) CONSIDERATION AND PREFERENCE.—In making selections for scholarships under this section, the Director shall—

(1) consider, to the extent possible, a diverse pool of applicants whose interests are of an interdisciplinary nature, encompassing the social sci-

entific as well as the technical dimensions of cyber security; and

(2) give preference to applicants that have participated in the competition and challenge described in section 13.

(f) EVALUATION AND REPORT.—The Director shall evaluate and report to the Senate Committee on Commerce, Science, and Transportation and the House of Representatives Committee on Science and Technology on the success of recruiting individuals for the scholarships.

(g) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the National Science Foundation to carry out this section—

(1) $50,000,000 for fiscal year 2010;

(2) $55,000,000 for fiscal year 2011;

(3) $60,000,000 for fiscal year 2012;

(4) $65,000,000 for fiscal year 2013; and

(5) $70,000,000 for fiscal year 2014.

TITLE VI—INNOVATION

SEC. 601. OFFICE OF INNOVATION AND ENTREPRENEURSHIP.

The Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3701 et seq.), as amended by section 107 of this Act, is amended by adding at the end the following:

"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 commercialization 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;

"(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 and between the Depart-

ment of Commerce and other Federal agencies, 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. 602. FEDERAL LOAN GUARANTEES FOR INNOVATIVE TECHNOLOGIES IN MANUFACTURING.

The Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3701 et seq.), as amended by section 601, is further amended by adding at the end the following:

''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; or

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

‘‘(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. 603. REGIONAL INNOVATION PROGRAM.

The Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3701 et seq.), as amended by section 602, is further amended by adding at the end thereof the following:

''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, in-

cluding regional innovation clusters and science and research parks.

'(b) REGIONAL INNOVATION 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 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 to 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) 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) CLUSTER GRANT PROGRAM.—The Secretary shall incorporate data and analysis relating to any regional innovation cluster supported by a grant under subsection (b) into the program established under this subsection.

''(d) 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 multi-agency 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.

''(e) EVALUATION.—

''(1) IN GENERAL.—Not later than 4 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.

''(f) 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) 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.

''(g) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated such sums as are necessary for each of fiscal years 2011 through 2015 to carry out this section, including such sums as are necessary to carry out the evaluation required under subsection (e).''.

SEC. 604. SCIENCE AND RESEARCH PARKS.

The Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3701 et seq.), as amended by section 603, is further amended by adding at the end thereof the following:

''SEC. 28. SCIENCE AND RESEARCH PARKS.

''(a) ESTABLISHMENT.—Upon the application of an eligible recipient, the Secretary is authorized to provide financial assistance under this section for the development

and construction of science and research parks to promote the clustering of innovation through high technology activities.

''(b) DEVELOPMENT OF PLANS FOR CONSTRUCTION OF SCIENCE PARKS.—

''(1) IN GENERAL.—The Secretary may award grants for the development of feasibility studies and plans for the construction of new science parks or 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 predominate rural or urban character as indicated by population density.

''(C) SELECTION CRITERIA.—The Secretary shall publish the criteria to be utilized in

any competition under this paragraph 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 5 years;

"(iii) funding to be required to construct, renovate or expand, the science park during its first 5 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 (BRAC) 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) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated $7,500,000 for each of the fiscal years 2011 through 2015 to carry out this subsection.

''(c) 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) $500,000,000 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 grants under subsection (a) 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) REVIEW.—

"(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 subsection; and

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

"(7) TERMINATION.—A loan may not be guaranteed under this subsection after September 30, 2015.

"(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 $500,000,000 in loans under this subsection, and

"(B) such sums as may be necessary for administrative expenses in fiscal year 2011 and thereafter,

such sums to remain available until expended.

"(d) SCIENCE PARK DEFINED.—In this section, the term 'science park' means a property-based venture that—

"(1) 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) as its primary mission the promotion of 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;

''(2) is owned by a governmental or not-for-profit entity; and

''(3) may enter into partnerships or joint ventures with for-profit entities for development or management of specific components of the park.''.

~~TITLE VII—GENERAL PROVISIONS~~

~~SEC. 701. GOVERNMENT ACCOUNTABILITY OFFICE REVIEW.~~

~~Not later than May 31, 2013, the Comptroller General of the United States shall submit a report to the Senate Committee on Commerce, Science, and Transportation and the House of Representatives Committee on Science and Technology that evaluates the status of the programs authorized in this Act, including the extent to which such programs have been funded, implemented, and are contributing to achieving the goals of the Act.~~

~~SEC. 702. SALARY RESTRICTIONS.~~

~~(a) OBSCENE MATTER ON FEDERAL PROPERTY.—None of the funds authorized under this Act may be used to pay the salary of any individual who is convicted of violating section 1460 of title 18, United States Code.~~

~~(b) USE OF FEDERAL COMPUTERS FOR CHILD PORNOGRAPHY OR EXPLOITATION OF MINORS.—None of the funds authorized under this Act may be used to pay the salary of any individual who is convicted of a violation of section 2252 of title 18, United States Code.~~

SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

(a) SHORT TITLE.—This Act may be cited as the "America COMPETES Reauthorization Act of 2010" or the "America Creating Opportunities to Meaningfully Promote

Excellence in Technology, Education, and Science Reauthorization Act of 2010".

(b) TABLE OF CONTENTS.—The table of contents for this Act is as follows:

SEC. 2. DEFINITIONS.

In this Act:

(1) DIRECTOR.—In title I, the term "Director" means the Director of the Office of Science and Technology Policy.

(2) STEM.—The term "STEM" means the academic and professional disciplines of science, technology, engineering, and mathematics.

TITLE I—OFFICE OF SCIENCE AND TECHNOLOGY POLICY

SEC. 101. COORDINATION OF FEDERAL STEM EDUCATION.

(a) ESTABLISHMENT.—The Director shall establish a committee under the National Science and Technology Council, including the Office of Management and Budget, with the responsibility to coordinate Federal programs and activities in support of STEM education, including at the National Science Foundation, the Department of Energy, the National Aeronautics and Space Administration, the National Oceanic and Atmospheric Administration, the Department of Education, and all other Federal agencies that have programs and activities in support of STEM education.

(b) RESPONSIBILITIES.—The committee established under subsection (a) shall—

(1) coordinate the STEM education activities and programs of the Federal agencies;

(2) coordinate STEM education activities and programs with the Office of Management and Budget;

(3) encourage the teaching of innovation and entrepreneurship as part of STEM education activities;

(4) review STEM education activities and programs to ensure they are not duplicative of similar efforts within the Federal government;

(5) develop, implement through the participating agencies, and update once every 5 years a 5-year STEM education strategic plan, which shall—

(A) specify and prioritize annual and long-term objectives;

(B) specify the common metrics that will be used to assess progress toward achieving the objectives;

(C) describe the approaches that will be taken by each participating agency to assess the effectiveness of its STEM education programs and activities; and

(D) with respect to subparagraph (A), describe the role of each agency in supporting programs and activities designed to achieve the objectives; and

(6) 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 in such programs and activities.

(b) RESPONSIBILITIES OF OSTP.—The Director shall encourage and monitor the efforts of the participating agencies to ensure that the strategic plan under subsection (b)(5) is developed and executed effectively and that the objectives of the strategic plan are met.

(c) REPORT.—The Director shall transmit a report annually to Congress at the time of the President's budget request describing the plan required under subsection (b)(5). The annual report shall include—

(1) a description of the STEM education programs and activities for the previous and current fiscal years, and the proposed programs and activities under the President's budget request, of each participating Federal agency;

(2) the levels of funding for each participating Federal agency for the programs and activities described under paragraph (1) for the previous fiscal year and under the President's budget request;

(3) an evaluation of the levels of duplication and fragmentation of the programs and activities described under paragraph (1)

(4) except for the initial annual report, a description of the progress made in carrying out the implementation plan, including a description of the outcome of any program assessments completed in the previous year, and any changes made to that plan since the previous annual report; and

(5) a description of how the participating Federal agencies will disseminate information about federally supported resources for STEM education practitioners, including teacher professional development programs, to States and to STEM education practitioners, including to teachers and administrators in schools that meet the criteria described in subsection (c)(1)(A) and (B) of section 3175 of the Department of Energy Science Education Enhancement Act (42 U.S.C. 7381j(c)(1)(A) and (B)).

SEC. 102. COORDINATION OF ADVANCED MANUFACTURING RESEARCH AND DEVELOPMENT.

(a) INTERAGENCY COMMITTEE.—The Director shall establish or designate a Committee on Technology under the National Science and Technology Council. The Committee shall be responsible for planning and coordinating Federal

programs and activities in advanced manufacturing research and development.

(b) RESPONSIBILITIES OF COMMITTEE.—The Committee shall—

(1) coordinate the advanced manufacturing research and development programs and activities of the Federal agencies;

(2) establish goals and priorities for advanced manufacturing research and development that will strengthen United States manufacturing;

(3) work with industry organizations, Federal agencies, and Federally Funded Research and Development Centers not represented on the Committee, to identify and reduce regulatory, logistical, and fiscal barriers within the Federal government and State governments that inhibit United States manufacturing;

(4) facilitate the transfer of intellectual property and technology based on federally supported university research into commercialization and manufacturing;

(5) identify technological, market, or business challenges that may best be addressed by public-private partnerships, and are likely to attract both participation and primary funding from industry;

(6) encourage the formation of public-private partnerships to respond to those challenges for transition to United States manufacturing; and

(7) develop, and update every 5 years, a strategic plan to guide Federal programs and activities in support of advanced manufacturing research and development, which shall—

(A) specify and prioritize near-term and long-term research and development objectives, the anticipated time frame for achieving the objectives, and the metrics for use in assessing progress toward the objectives;

(B) specify the role of each Federal agency in carrying out or sponsoring research and development to meet the objectives of the strategic plan;

(C) describe how the Federal agencies and Federally Funded Research and Development Centers supporting advanced manufacturing research and development will foster the transfer of research and development results into new manufacturing technologies and United States based manufacturing of new products and processes for the benefit of society to ensure national, energy, and economic security;

(D) describe how Federal agencies and Federally Funded Research and Development Centers supporting advanced manufacturing research and development will strengthen all levels of manufacturing education and training programs to ensure an adequate, well-trained workforce;

(E) describe how the Federal agencies and Federally Funded Research and Development Centers supporting advanced manufacturing research and development will assist small- and medium-sized manufacturers in developing and implementing new products and processes; and

(F) take into consideration the recommendations of a wide range of stakeholders, including representatives from diverse manufacturing companies, academia, and other relevant organizations and institutions.

(c) REPORT.—Not later than 1 year after the date of enactment of this Act, the Director shall transmit the strategic plan developed under subsection (b)(7) to the Senate Committee on Commerce, Science, and Transportation, and the House of Representatives Committee on Science and Technology, and shall transmit subsequent updates to those committees as appropriate.

SEC. 103. INTERAGENCY PUBLIC ACCESS COMMITTEE.

(a) ESTABLISHMENT.—The Director shall establish a working group under the National Science and Technology Council with the responsibility to coordinate Federal science agency research and policies related to the dissemination and long-term stewardship of the results of unclassified research, including digital data and peer-reviewed scholarly publications, supported wholly, or in part, by funding from the Federal science agencies.

(b) RESPONSIBILITIES.—The working group shall—

(1) identify the specific objectives and public interests that need to be addressed by any policies coordinated under (a);

(2) take into account inherent variability among Federal science agencies and scientific disciplines in the nature of research, types of data, and dissemination models;

(3) coordinate the development or designation of standards for research data, the structure of full text and metadata, navigation tools, and other applications to maximize interoperability across Federal science agencies, across science and engineering disciplines, and between research data and scholarly publications, taking into account existing consensus standards, including international standards;

(4) coordinate Federal science agency programs and activities that support research and education on tools and systems required to ensure preservation and stewardship of all forms of digital research data, including scholarly publications;

(5) work with international science and technology counterparts to maximize interoperability between United States based unclassified research databases and international databases and repositories;

(6) solicit input and recommendations from, and collaborate with, non-Federal stakeholders, including the public, universities, nonprofit and for-profit publishers, libraries, federally funded and non federally funded research scientists, and other organizations and institutions with a stake in long term preservation and access to the results of federally funded research;

(7) establish priorities for coordinating the development of any Federal science agency policies related to public access to the results of federally funded research to maximize the benefits of such policies with respect to their potential economic or other impact on the science and engineering enterprise and the stakeholders thereof;

(8) take into consideration the distinction between scholarly publications and digital data;

(9) take into consideration the role that scientific publishers play in the peer review process in ensuring the integrity of the record of scientific research, including the investments and added value that they make; and

(10) examine Federal agency practices and procedures for providing research reports to the agencies charged with locating and preserving unclassified research.

(c) PATENT OR COPYRIGHT LAW.—Nothing in this section shall be construed to undermine any right under the provisions of title 17 or 35, United States Code.

(d) APPLICATION WITH EXISTING LAW.—Nothing defined in section (b) shall be construed to affect existing law with respect to Federal science agencies' policies related to public access.

(e) REPORT TO CONGRESS.—Not later than 1 year after the date of enactment of this Act, the Director shall transmit a report to Congress describing—

(1) the specific objectives and public interest identified under (b)(1);

(2) any priorities established under subsection (b)(7);

(3) the impact the policies described under (a) have had on the science and engineering enterprise and the stakeholders, including the financial impact on research budgets;

(4) the status of any Federal science agency policies related to public access to the results of federally funded research; and

(5) how any policies developed or being developed by Federal science agencies, as described in subsection (a), incorporate input from the non-Federal stakeholders described in subsection (b)(6).

(f) FEDERAL SCIENCE AGENCY DEFINED.—For the purposes of this section, the term "Federal science agency" means any Federal agency with an annual extramural research expenditure of over $100,000,000.

SEC. 104. FEDERAL SCIENTIFIC COLLECTIONS.

(a) MANAGEMENT OF SCIENTIFIC COLLECTIONS.—The Office of Science and Technology Policy shall develop policies for the management and use of Federal scientific collections to improve the quality, organization, access, including online access, and long-term preservation of such collections for the benefit of the scientific enterprise. In developing those policies the Office of Science and Technology Policy shall consult, as appropriate, with—

(1) Federal agencies with such collections; and

(2) representatives of other organizations, institutions, and other entities not a part of the Federal Government that have a stake in the preservation, maintenance, and accessibility of such collections, including State and local government agencies, institutions of higher education, museums, and other entities engaged in the acquisition, holding, management, or use of scientific collections.

(b) CLEARINGHOUSE.—The Office of Science and Technology Policy, in consultation with relevant Federal agencies, shall ensure the development of an online clearinghouse for information on the contents of and access to Federal scientific collections.

(c) DISPOSAL OF COLLECTIONS.—The policies developed under subsection (a) shall—

(1) require that, before disposing of a scientific collection, a Federal agency shall—

(A) conduct a review of the research value of the collection; and

(B) consult with researchers who have used the collection, and other potentially interested parties, concerning—

(i) the collection's value for research purposes; and

(ii) possible additional educational uses for the collection; and

(2) include procedures for Federal agencies to transfer scientific collections they no longer need to researchers at institutions or other entities qualified to manage the collections.

(d) COST PROJECTIONS.—The Office of Science and Technology Policy, in consultation with relevant Federal agencies, shall develop a common set of methodologies to be used by Federal agencies for the assessment and projection of costs associated with the management and preservation of their scientific collections.

(e) SCIENTIFIC COLLECTION DEFINED.—In this section, the term "scientific collection" means a set of physical specimens, living or inanimate, created for the purpose of supporting science and serving as a long-term research asset, rather than for their market value as collectibles or their historical, artistic, or cultural significance, and, as appropriate and feasible, the associated specimen data and materials.

SEC. 105. PRIZE COMPETITIONS.

(a) IN GENERAL.—The Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3701 et seq.) is amended by adding at the end the following:

"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 fur-

ther 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 FACA.—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 per-

mits 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.".

(b) REPEAL OF SPACE ACT LIMITATION.—Section 314(a) of the National Aeronautics and Space Act of 1958 (42 U.S.C. 2459f-1 is amended by striking "The Administration may carry out a program to award prizes only in conformity with this section.".

TITLE II—NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

SEC. 201. NASA'S CONTRIBUTION TO INNOVATION AND COMPETITIVENESS.

It is the sense of Congress that a renewed emphasis on technology development would enhance current mission capabilities and enable future missions, while encouraging NASA, private industry, and academia to spur innovation. NASA's Innovative Partnership Program is a valuable mechanism to accelerate technology maturation and encourage the transfer of technology into the private sector.

SEC. 202. NASA'S CONTRIBUTION TO EDUCATION.

(a) SENSE OF CONGRESS.—It is the sense of Congress that NASA is uniquely positioned to interest students in science, technology, engineering, and mathematics, not only by the example it sets, but through its education programs.

(b) EDUCATIONAL PROGRAM GOALS.—NASA shall develop educational programs—

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

(2) to improve public literacy in STEM;

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

(4) to 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;

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

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

SEC. 203. INTERNATIONAL SPACE STATION'S CONTRIBUTION TO NATIONAL COMPETITIVENESS ENHANCEMENT.

(a) SENSE OF CONGRESS.—It is the sense of the Congress that the International Space Station represents a valuable and unique national asset which can be utilized to increase educational opportunities and scientific and technological innovation which will enhance the Nation's economic security and competitiveness in the global technology fields of endeavor. If the period for active utilization of the International Space Station is extended to at least the year 2020, the potential for such opportunities and innovation would be increased. Efforts should be made to fully realize that potential.

(b) EVALUATION AND ASSESSMENT OF NASA'S INTERAGENCY CONTRIBUTION.—Pursuant to the authority provided in title II of the America COMPETES Act (Public Law 110–69), the Administrator shall evaluate and, where possible, expand efforts to maximize NASA's contribution to interagency efforts to enhance science, technology, engineering, and mathematics education capabilities, and to enhance the Nation's technological excellence and global competitiveness. The Administrator shall identify these enhancements in the annual reports required by section 2001(e) of that Act (42 U.S.C. 16611a(e)).

(c) REPORT TO THE CONGRESS.—Within 120 days after the date of enactment of this Act, the Administrator shall provide to the House of Representatives Committee on Science and Technology and the Senate Committee on Commerce, Science, and Transportation a report on the assessment made pursuant to subsection (a). The report shall include—

(1) a description of current and potential activities associated with utilization of the International Space Station which are supportive of the goals of educational excellence and innovation and competitive enhancement established or reaffirmed by this Act, including a summary of the goals supported, the number of individuals or organizations participating in or benefiting from such activities, and a summary of how such activities might be expanded or improved upon;

(2) a description of government and private partnerships which are, or may be, established to effectively utilize the capabilities represented by the International Space Station to enhance United States competitiveness, innovation and science, technology, engineering, and mathematics education; and

(3) a summary of proposed actions or activities to be undertaken to ensure the maximum utilization

of the International Space Station to contribute to fulfillment of the goals and objectives of this Act, and the identification of any additional authority, assets, or funding that would be required to support such activities.

SEC. 204. DEFINITIONS.

In this title:

(1) ADMINISTRATOR.—The term "Administrator" means the Administrator of NASA.

(2) NASA.—The term "NASA" means the National Aeronautics and Space Administration.

TITLE III—NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

SEC. 301. OCEANIC AND ATMOSPHERIC RESEARCH AND DEVELOPMENT PROGRAM.

Section 4001 of the America COMPETES Act (33 U.S.C. 893) is amended—

(1) by inserting "(a) IN GENERAL.—" before "The Administrator"; and

(2) by adding at the end the following:

"(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 United States 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 oceanic 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 NOAA'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 the Senate Committee on Commerce, Science, and Transportation and the House of Representatives Committee on Science and Technology that describes 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. 302. OCEANIC AND ATMOSPHERIC SCIENCE EDUCATION PROGRAMS.

Section 4002 of the America COMPETES Act (33 U.S.C. 893a) is amended—

(1) by striking "the agency." in subsection (a) and inserting "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.";

(2) by redesignating subsections (b) and (c) as subsections (c) and (d), respectively;

(3) by inserting after subsection (a) the following:

"(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) promote 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.";

(4) by striking "develop" in subsection (c), as redesignated, and inserting "maintain"; and

(5) by adding at the end thereof the following:

"(e) STEM DEFINED.—In this section, the term 'STEM' means the academic and professional disciplines of science, technology, engineering, and mathematics.".

SEC. 303. WORKFORCE STUDY.

(a) IN GENERAL.—The Secretary of Commerce, in cooperation with the Secretary of Education, shall request the National Academy of Sciences to conduct a study on the scientific workforce in the areas of oceanic and atmospheric research and development. The study shall investigate—

(1) whether there is a shortage in the number of individuals with advanced degrees in oceanic and atmospheric sciences who have the ability to conduct high quality scientific research in physical and chem-

ical oceanography, meteorology, and atmospheric modeling, and related fields, for government, non-profit, and private sector entities;

(2) what Federal programs are available to help facilitate the education of students hoping to pursue these degrees;

(3) barriers to transitioning highly qualified oceanic and atmospheric scientists into Federal civil service scientist career tracks;

(4) what institutions of higher education, the private sector, and the Congress could do to increase the number of individuals with such post baccalaureate degrees;

(5) the impact of an aging Federal scientist workforce on the ability of Federal agencies to conduct high quality scientific research; and

(6) what actions the Federal government can take to assist the transition of highly qualified scientists into Federal career scientist positions and ensure that the experiences of retiring Federal scientists are adequately documented and transferred prior to retirement from Federal service.

(b) COORDINATION.—The Secretary of Commerce and the Secretary of Education shall consult with the heads of other Federal agencies and departments with oceanic and

atmospheric expertise or authority in preparing the specifications for the study.

(c) REPORT.—No later than 18 months after the date of enactment of this Act, the Secretary of Commerce and the Secretary of Education shall transmit a joint report to each committee of Congress with jurisdiction over the programs described in 4002(b) of the America COMPETES Act (33 U.S.C. 893a(b)), as amended by section 302 of this Act, detailing the findings and recommendations of the study and setting forth a prioritized plan to implement the recommendations.

(d) PROGRAM AND PLAN.—The Administrator of the National Oceanic and Atmospheric Administration shall evaluate the National Academy of Sciences study and develop a workforce program and plan to institutionalize the Administration's Federal science career pathways and address aging workforce issues. The program and plan shall be developed in consultation with the Administration's cooperative institutes and other academic partners to identify and implement programs and mechanisms to ensure that—

(1) sufficient highly qualified scientists are able to transition into Federal career scientist positions in the Administration's laboratories and programs; and

(2) the technical and management experiences of senior employees are documented and transferred before leaving Federal service.

TITLE IV—NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY

SEC. 401. SHORT TITLE.

This title may be cited as the "National Institute of Standards and Technology Authorization Act of 2010".

SEC. 402. AUTHORIZATION OF APPROPRIATIONS.

(a) FISCAL YEAR 2011.—

(1) IN GENERAL.—There are authorized to be appropriated to the Secretary of Commerce $991,100,000 for the National Institute of Standards and Technology for fiscal year 2011.

(2) SPECIFIC ALLOCATIONS.—Of the amount authorized by paragraph (1)—

(A) $620,000,000 shall be authorized for scientific and technical research and services laboratory activities;

(B) $125,000,000 shall be authorized for the construction and maintenance of facilities; and

(C) $246,100,000 shall be authorized for industrial technology services activities, of which—

(i) $95,000,000 shall be authorized for the Technology Innovation Program under section 28 of the National Institute of Standards and Technology Act (15 U.S.C. 278n);

(ii) $141,100,000 shall be authorized for the Manufacturing Extension Partnership program under sections 25 and 26 of such Act (15 U.S.C. 278k and 278l), of which not more than $5,000,000 shall be for the competitive grant program under section 25(f) of such Act; and

(iii) $10,000,000 shall be authorized for the Malcolm Baldrige National Quality Award program under section 17 of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3711a).

(b) FISCAL YEAR 2012.—

(1) IN GENERAL.—There are authorized to be appropriated to the Secretary of Commerce $992,400,000 for the National Institute of Standards and Technology for fiscal year 2012.

(2) SPECIFIC ALLOCATIONS.—Of the amount authorized by paragraph (1)—

(A) $657,200,000 shall be authorized for scientific and technical research and services laboratory activities;

(B) $85,000,000 shall be authorized for the construction and maintenance of facilities; and

(C) $250,200,000 shall be authorized for industrial technology services activities, of which—

(i) $89,000,000 shall be authorized for the Technology Innovation Program under section 28 of the National Institute of Standards and Technology Act (15 U.S.C. 278n);

(ii) $150,900,000 shall be authorized for the Manufacturing Extension Partnership program under sections 25 and 26 of such Act (15 U.S.C. 278k and 278l), of which not more than $5,000,000 shall be for the competitive grant program under section 25(f) of such Act; and

(iii) $10,300,000 shall be authorized for the Malcolm Baldrige National Quality Award program under section 17 of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3711a).

(c) FISCAL YEAR 2013.—

(1) IN GENERAL.—There are authorized to be appropriated to the Secretary of Commerce $1,079,809,000 for the National Institute of Standards and Technology for fiscal year 2013.

(2) SPECIFIC ALLOCATIONS.—Of the amount authorized by paragraph (1)—

(A) $696,700,000 shall be authorized for scientific and technical research and services laboratory activities;

(B) $122,000,000 shall be authorized for the construction and maintenance of facilities; and

(C) $261,109,000 shall be authorized for industrial technology services activities, of which—

(i) $89,000,000 shall be authorized for the Technology Innovation Program under section 28 of the National Institute of Standards and Technology Act (15 U.S.C. 278n);

(ii) $161,500,000 shall be authorized for the Manufacturing Extension Partnership program under sections 25 and 26 of such Act (15 U.S.C. 278k and 278l), of which not more than $5,000,000 shall be for the competitive grant program under section 25(f) of such Act; and

(iii) $10,609,000 shall be authorized for the Malcolm Baldrige National Quality Award program under section 17 of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3711a).

SEC. 403. UNDER SECRETARY OF COMMERCE FOR STANDARDS AND TECHNOLOGY.

(a) ESTABLISHMENT.—The National Institute of Standards and Technology Act is amended by inserting after section 3 the following:

"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).".

(b) CONFORMING AMENDMENTS.—

(1) TITLE 5, UNITED STATES CODE.—

(A) LEVEL III.—Section 5314 of title 5, United States Code, is amended by inserting before the item "Associate Attorney General" the following:

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

(B) LEVEL IV.—Section 5315 of title 5, United States Code, is amended by striking "Director, National Institute of Standards and Technology, Department of Commerce.".

(2) NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY ACT.—Section 5 of the National Institute of Standards and Technology Act (15 U.S.C.

274) is amended by striking the first, fifth, and sixth sentences.

SEC. 404. MANUFACTURING EXTENSION PARTNERSHIP.

(a) COMMUNITY COLLEGE SUPPORT.—Section 25(a) of the National Institute of Standards and Technology Act (15 U.S.C. 278k(a)) is amended—

(1) by striking "and" after the semicolon in paragraph (4);

(2) by striking "Institute." in paragraph (5) and inserting "Institute; and"; and

(3) by adding at the end the following:

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

(b) INNOVATIVE SERVICES INITIATIVE.—Section 25 of such Act (15 U.S.C. 278k) is amended by adding at the end the following:

"(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.".

(c) REPORTS.—Section 25 of such Act (15 U.S.C. 278k), as amended by subsection (b), is further amended by adding at the end the following:

"(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)).".

(d) HOLLINGS MANUFACTURING EXTENSION PARTNERSHIP PROGRAM COST-SHARING.—Section 25(c) of such Act (15 U.S.C. 278k(c)) is amended by adding at the end the following:

"(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) ADVISORY BOARD.—Section 25(e)(4) of such Act (15 U.S.C. 278k(e)(4)) is amended to read as follows:

"(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.'.

(f) DESIGNATION OF PROGRAM.—

(1) IN GENERAL.—Section 25 of the National Institute of Standards and Technology Act (15 U.S.C.

278k), as amended by subsection (c), is further amended by adding at the end the following:

"(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').".

(2) CONFORMING AMENDMENT TO CONSOLIDATED APPROPRIATIONS ACT, 2005.—Division B of title II of the Consolidated Appropriations Act, 2005 (Public Law 108-447; 118 Stat. 2879; 15 U.S.C. 278k note) is amended under the heading "INDUSTRIAL TECHNOLOGY SERVICES" by striking "2007: Provided further, That" and all that follows through "Extension Centers." and inserting "2007.".

(3) TECHNICAL AMENDMENTS.—

(A) Section 25(a) of the National Institute of Standards and Technology Act (15 U.S.C. 278k(a)) is amended in the matter preceding

paragraph (1) by striking "Regional Centers for the Transfer of Manufacturing Technology" and inserting "regional centers for the transfer of manufacturing technology".

(B) Section 25 of such Act (15 U.S.C. 278k), as amended by subsection (f), is further amended by adding at the end the following:

"(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.".

(h) EVALUATION OF OBSTACLES UNIQUE TO SMALL MANUFACTURERS.—Section 25 of such Act (15 U.S.C. 278k), as amended by subsection (g), is further amended by adding at the end the following:

"(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.".

(i) NIST ACT AMENDMENT.—Section 25(f)(3) of the National Institute of Standards and Technology Act (15 U.S.C. 278k(f)(3)) is amended by striking "Director of the Centers program," and inserting "Director of the Hollings MEP program,".

SEC. 405. EMERGENCY COMMUNICATION AND TRACKING TECHNOLOGIES RESEARCH INITIATIVE.

(a) ESTABLISHMENT.—The Director shall 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, such as high-rise buildings or collapsed structures, where conventional radio communication is limited.

(b) ACTIVITIES.—In order to carry out this section, the Director shall work with the private sector and appropriate Federal agencies to—

(1) perform a needs assessment to identify and evaluate the measurement, technical standards, and conformity assessment needs required to improve the

operation and reliability of such emergency communication and tracking technologies;

(2) support the development of technical standards and conformance architecture to improve the operation and reliability of such emergency communication and tracking technologies; and

(3) incorporate and build upon existing reports and studies on improving emergency communications.

(c) REPORT.—Not later than 18 months after the date of enactment of this Act, the Director shall submit to Congress and make publicly available a report describing the assessment performed under subsection (b)(1) and making recommendations about research priorities to address gaps in the measurement, technical standards, and conformity assessment needs identified by the assessment.

SEC. 406. BROADENING PARTICIPATION.

(a) RESEARCH FELLOWSHIPS.—Section 18 of the National Institute of Standards and Technology Act (15 U.S.C. 278g–1) is amended by adding at the end the following:

"(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.".

(b) POSTDOCTORAL FELLOWSHIP PROGRAM.—Section 19 of such Act (15 U.S.C. 278g–2) is amended by adding at the end the following: "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.".

(c) TEACHER DEVELOPMENT.—Section 19A(c) of such Act (15 U.S.C. 278g–2a(c)) is amended by adding at the end the following: "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).".

SEC. 407. NIST FELLOWSHIPS.

(a) POST-DOCTORAL FELLOWSHIP PROGRAM.—Section 19 of the National Institute of Standards and Technology Act (15 U.S.C. 278g-2) is amended by striking ", in conjunction with the National Academy of Sciences,".

(b) RESEARCH FELLOWSHIPS.—Section 18(a) of that Act (15 USC 278g–1(a)) is amended by striking "up to 1.5 percent of the".

(c) COMMERCE, SCIENCE, AND TECHNOLOGY FELLOWSHIP PROGRAM.—Section 5163(d) of the Omnibus Trade and Competition Act of 1988 (15 U.S.C. 1533) is repealed.

SEC. 408. GREEN MANUFACTURING AND CONSTRUCTION.

The Director shall carry out a green manufacturing and construction initiative—

(1) to develop accurate sustainability metrics and practices for use in manufacturing;

(2) to advance the development of standards, including high performance green building standards, and the creation of an information infrastructure to communicate sustainability information about suppliers; and

(3) to move buildings toward becoming high performance green buildings, including improving energy performance, service life, and indoor air quality of new and retrofitted buildings through validated measurement data.

SEC. 409. DEFINITIONS.

In this title:

(1) DIRECTOR.—The term "Director" means the Director of the National Institute of Standards and Technology.

(2) FEDERAL AGENCY.—The term "Federal agency" has the meaning given such term in section 4 of the Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3703).

(3) HIGH PERFORMANCE GREEN BUILDING.—The term "high performance green building" has the

meaning given that term by section 401(13) of the Energy Independence and Security Act of 2009 (42 U.S.C. 17061(13)).

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

SUBTITLE A—NATIONAL SCIENCE FOUNDATION

SEC. 501. SHORT TITLE.

This subtitle may be cited as the "National Science Foundation Authorization Act of 2010".

SEC. 502. DEFINITIONS.

In this subtitle:

(1) DIRECTOR.—The term "Director" means the Director of the National Science Foundation.

(2) EPSCOR.—The term "EPSCoR" means the Experimental Program to Stimulate Competititve Research.

(3) FOUNDATION.—The term "Foundation" means the National Science Foundation established under section 2 of the National Science Foundation Act of 1950 (42 U.S.C. 1861).

(4) INSTITUTION OF HIGHER EDUCATION.—The term "institution of higher education" has the mean-

ing given such term in section 101(a) of the Higher Education Act of 1965 (20 U.S.C. 1001(a)).

(5) 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.

(6) UNITED STATES.—The term "United States" means 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, and any other territory or possession of the United States.

SEC. 503. AUTHORIZATION OF APPROPRIATIONS.

(a) FISCAL YEAR 2011.—

(1) IN GENERAL.—There are authorized to be appropriated to the Foundation $7,481,000,000 for fiscal year 2011.

(2) SPECIFIC ALLOCATIONS.—Of the amount authorized by paragraph (1)—

(A) $6,020,000,000 shall be made available to carry research and related activities;

(B) $945,000,000 shall be made available for education and human resources;

(C) $166,000,000 shall be made available for major research equipment and facilities construction;

(D) $330,000,000 shall be made available for agency operations and award management;

(E) $4,840,000 shall be made available for the Office of the National Science Board; and

(F) $14,830,000 shall be made available for the Office of Inspector General.

(b) FISCAL YEAR 2012.—

(1) IN GENERAL.—There are authorized to be appropriated to the Foundation $8,127,000,000 for fiscal year 2012.

(2) SPECIFIC ALLOCATIONS.—Of the amount authorized by paragraph (1)—

(A) $6,496,000,000 shall be made available to carry research and related activities;

(B) $1,020,000,000 shall be made available for education and human resources;

(C) $235,000,000 shall be made available for major research equipment and facilities construction;

(D) $356,000,000 shall be made available for agency operations and award management;

(E) $5,010,000 shall be made available for the Office of the National Science Board; and

(F) $15,350,000 shall be made available for the Office of Inspector General.

(c) FISCAL YEAR 2013.—

(1) IN GENERAL.—There are authorized to be appropriated to the Foundation $8,764,000,000 for fiscal year 2013.

(2) SPECIFIC ALLOCATIONS.—Of the amount authorized by paragraph (1)—

(A) $7,009,000,000 shall be made available to carry research and related activities;

(B) $1,100,000,000 shall be made available for education and human resources;

(C) $250,000,000 shall be made available for major research equipment and facilities construction;

(D) $384,000,000 shall be made available for agency operations and award management;

(E) $5,180,000 shall be made available for the Office of the National Science Board; and

(F) $15,890,000 shall be made available for the Office of Inspector General.

SEC. 504. NATIONAL SCIENCE BOARD ADMINISTRATIVE AMENDMENTS.

(a) STAFFING AT THE NATIONAL SCIENCE BOARD.—Section 4(g) of the National Science Foundation Act of 1950 (42 U.S.C. 1863(g)) is amended by striking "not more than 5".

(b) NATIONAL SCIENCE BOARD REPORTS.—Section 4(j)(2) of the National Science Foundation Act of 1950 (42 U.S.C. 1863(j)(2)) is amended by inserting "within the authority of the Foundation (or otherwise as requested by the Congress or the President)" after "individual policy matters".

(c) BOARD ADHERENCE TO SUNSHINE ACT.—Section 15(a)(2) of the National Science Foundation Authorization Act of 2002 (42 U.S.C. 1862n-5(a)(2)) is amended—

(1) by striking "The Board" and inserting "To ensure transparency of the Board's entire decision-making process, including deliberations on Board business occurring within its various subdivisions, the Board"; and

(2) by adding at the end the following: "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.".

SEC. 505. NATIONAL CENTER FOR SCIENCE AND ENGINEERING STATISTICS.

(a) ESTABLISHMENT.—There is established within the Foundation a National Center for Science and Engineering Statistics that shall serve as a central Federal clearinghouse for the collection, interpretation, analysis, and dissemination of objective data on science, engineering, technology, and research and development.

(b) DUTIES.—In carrying out subsection (a) of this section, the Director, acting through the Center shall—

(1) collect, acquire, analyze, report, and disseminate statistical data related to the science and engineering enterprise in the United States and other nations that is relevant and useful to practitioners, researchers, policymakers, and the public, including statistical data on—

(A) research and development trends;

(B) the science and engineering workforce;

(C) United States competitiveness in science, engineering, technology, and research and development; and

(D) the condition and progress of United States STEM education;

(2) support research using the data it collects, and on methodologies in areas related to the work of the Center; and

(3) support the education and training of researchers in the use of large-scale, nationally representative data sets.

(c) STATISTICAL REPORTS.—The Director or the National Science Board, acting through the Center, shall issue regular, and as necessary, special statistical reports on topics related to the national and international science and engineering enterprise such as the biennial report required by section 4(j)(1) of the National Science Foundation Act of 1950 (42 U.S.C. 1863(j)(1)) on indicators of the state of science and engineering in the United States.

SEC. 506. NATIONAL SCIENCE FOUNDATION MANUFACTURING RESEARCH AND EDUCATION.

(a) MANUFACTURING RESEARCH.—The Director shall carry out a program to award merit-reviewed, competitive grants to institutions of higher education to support fundamental research leading to transformative advances in manufacturing technologies, processes, and enterprises that will support United States manufacturing through improved performance, productivity, sustainability, and competitiveness. Research areas may include—

(1) nanomanufacturing;

(2) manufacturing and construction machines and equipment, including robotics, automation, and other intelligent systems;

(3) manufacturing enterprise systems;

(4) advanced sensing and control techniques;

(5) materials processing; and

(6) information technologies for manufacturing, including predictive and real-time models and simulations, and virtual manufacturing.

(b) MANUFACTURING EDUCATION.—In order to help ensure a well-trained manufacturing workforce, the Director shall award grants to strengthen and expand scientific and technical education and training in advanced manufacturing, including through the Foundation's Advanced Technological Education program.

SEC. 507. NATIONAL SCIENCE BOARD REPORT ON MID-SCALE INSTRUMENTATION.

(a) MID-SCALE RESEARCH INSTRUMENTATION NEEDS.—The National Science Board shall evaluate the needs, across all disciplines supported by the Foundation, for mid-scale research instrumentation that falls between the instruments funded by the Major Research Instrumentation program and the very large projects funded by the Major Research Equipment and Facilities Construction program.

(b) REPORT ON MID-SCALE RESEARCH INSTRUMENTATION PROGRAM.—Not later than 1 year after the date of enactment of this Act, the National Science Board shall sub-

mit to Congress a report on mid-scale research instrumentation at the Foundation. At a minimum, this report shall include—

(1) the findings from the Board's evaluation of instrumentation needs required under subsection (a), including a description of differences across disciplines and Foundation research directorates;

(2) a recommendation or recommendations regarding how the Foundation should set priorities for mid-scale instrumentation across disciplines and Foundation research directorates;

(3) a recommendation or recommendations regarding the appropriateness of expanding existing programs, including the Major Research Instrumentation program or the Major Research Equipment and Facilities Construction program, to support more instrumentation at the mid-scale;

(4) a recommendation or recommendations regarding the need for and appropriateness of a new, Foundation-wide program or initiative in support of mid-scale instrumentation, including any recommendations regarding the administration of and budget for such a program or initiative and the appropriate scope of instruments to be funded under such a program or initiative; and

(5) any recommendation or recommendations regarding other options for supporting mid-scale research instrumentation at the Foundation.

SEC. 508. PARTNERSHIPS FOR INNOVATION.

(a) IN GENERAL.—The Director shall carry out a program to award merit-reviewed, competitive grants to institutions of higher education to establish and to expand partnerships that promote innovation and increase the impact of research by developing tools and resources to connect new scientific discoveries to practical uses.

(b) PARTNERSHIPS.—

(1) IN GENERAL.—To be eligible for funding under this section, an institution of higher education must propose establishment of a partnership that—

(A) includes at least one private sector entity; and

(B) may include other institutions of higher education, public sector institutions, private sector entities, and nonprofit organizations.

(2) PRIORITY.—In selecting grant recipients under this section, the Director shall give priority to partnerships that include one or more institutions of higher education and at least one of the following:

(A) A minority serving institution.

(B) A primarily undergraduate institution.

(C) A 2-year institution of higher education.

(c) PROGRAM.—Proposals funded under this section shall seek—

(1) to increase the impact of the most promising research at the institution or institutions of higher education that are members of the partnership through knowledge transfer or commercialization;

(2) to increase the engagement of faculty and students across multiple disciplines and departments, including faculty and students in schools of business and other appropriate non-STEM fields and disciplines in knowledge transfer activities;

(3) to enhance education and mentoring of students and faculty in innovation and entrepreneurship through networks, courses, and development of best practices and curricula;

(4) to strengthen the culture of the institution or institutions of higher education to undertake and participate in activities related to innovation and leading to economic or social impact;

(5) to broaden the participation of all types of institutions of higher education in activities to meet STEM workforce needs and promote innovation and knowledge transfer; and

(6) to build lasting partnerships with local and regional businesses, local and State governments, and other relevant entities.

(d) ADDITIONAL CRITERIA.—In selecting grant recipients under this section, the Director shall also consider the extent to which the applicants are able to demonstrate evidence of institutional support for, and commitment to—

(1) achieving the goals of the program as described in subsection (c);

(2) expansion to an institution-wide program if the initial proposal is not for an institution-wide program; and

(3) sustaining any new innovation tools and resources generated from funding under this program.

(e) LIMITATION.—No funds provided under this section may be used to construct or renovate a building or structure.

SEC. 509. SUSTAINABLE CHEMISTRY BASIC RESEARCH.

The Director shall establish a Green Chemistry Basic Research program to award competitive, merit-based grants to support research into green and sustainable chemistry which will lead to clean, safe, and economical alternatives to traditional chemical products and practices. The research program shall provide sustained support for green chemistry research, education, and technology transfer through—

(1) merit-reviewed competitive grants to individual investigators and teams of investigators, including, to the extent practicable, young investigators, for research;

(2) grants to fund collaborative research partnerships among universities, industry, and nonprofit organizations;

(3) symposia, forums, and conferences to increase outreach, collaboration, and dissemination of green chemistry advances and practices; and

(4) education, training, and retraining of undergraduate and graduate students and professional chemists and chemical engineers, including through partnerships with industry, in green chemistry science and engineering.

SEC. 510. GRADUATE STUDENT SUPPORT.

(a) FINDING.—The Congress finds that—

(1) the Integrative Graduate Education and Research Traineeship program is an important program for training the next generation of scientists and engineers in team-based interdisciplinary research and problem solving, and for providing them with the many additional skills, such as communication skills, needed to thrive in diverse STEM careers; and

(2) the Integrative Graduate Education and Research Traineeship program is no less valuable to the preparation and support of graduate students than the Foundation's Graduate Research Fellowship program.

(b) EQUAL TREATMENT OF IGERT AND GRF.—Beginning in fiscal year 2011, the Director shall increase or, if necessary, decrease funding for the Foundation's Integrative Graduate Education and Research Traineeship program (or any program by which it is replaced) at least at the same rate as it increases or decreases funding for the Graduate Research Fellowship program.

(c) SUPPORT FOR GRADUATE STUDENT RESEARCH FROM THE RESEARCH ACCOUNT.—For each of the fiscal years 2011 through 2013, at least 50 percent of the total Foundation funds allocated to the Integrative Graduate Education and Research Traineeship program and the Graduate Research Fellowship program shall come from funds appropriated for Research and Related Activities.

(d) COST OF EDUCATION ALLOWANCE FOR GRF PROGRAM.—Section 10 of the National Science Foundation Act of 1950 (42 U.S.C. 1869) is amended—

(1) by inserting "(a) IN GENERAL.—" before "The Foundation is authorized"; and

(2) by adding at the end the following:

"(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.".

SEC. 511. ROBERT NOYCE TEACHER SCHOLARSHIP PROGRAM.

(a) MATCHING REQUIREMENT.—Section 10A(h)(1) of the National Science Foundation Authorization Act of 2002 (42 U.S.C. 1862n-1a(h)(1)) is amended to read as follows:

"(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.".

(b) RETIRING STEM PROFESSIONALS.—Section 10A(a)(2)(A) of the National Science Foundation Author-

ization Act of 2002 (42 U.S.C. 1862n-1a(a)(2)(A)) is amended by inserting "including retiring professionals in those fields," after "mathematics professionals,".

SEC. 512 UNDERGRADUATE BROADENING PARTICIPATION PROGRAM.

The Foundation shall continue to support the Historically Black Colleges and Universities Undergraduate Program, the Louis Stokes Alliances for Minority Participation program, the Tribal Colleges and Universities Program, and Hispanic-serving institutions as separate programs.

SEC. 513. RESEARCH EXPERIENCES FOR HIGH SCHOOL STUDENTS.

The Director shall permit specialized STEM high schools conducting research to participate in major data collection initiatives from universities, corporations, or government labs under a research grant from the Foundation, as part of the research proposal.

SEC. 514. RESEARCH EXPERIENCES FOR UNDERGRADUATES.

(a) RESEARCH SITES.—The Director shall award grants, on a merit-reviewed, competitive basis, to institutions of higher education, nonprofit organizations, or consortia of such institutions and organizations, for sites designated by the Director to provide research experiences for 6 or more undergraduate STEM students for sites des-

ignated at primarily undergraduate institutions of higher education and 10 or more undergraduate STEM students for all other sites, with consideration 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). The Director shall ensure that—

(1) at least half of the students participating in a program funded by a grant under this subsection at each site shall be recruited from institutions of higher education where research opportunities in STEM are limited, including 2-year institutions;

(2) the awards provide undergraduate research experiences in a wide range of STEM disciplines;

(3) the awards support a variety of projects, including independent investigator-led projects, interdisciplinary projects, and multi-institutional projects (including virtual projects);

(4) students participating in each program funded have mentors, including during the academic year to the extent practicable, to help connect the students' research experiences to the overall academic course of study and to help students achieve success in courses of study leading to a baccalaureate degree in a STEM field;

(5) mentors and students are supported with appropriate salary or stipends; and

(6) student participants are tracked, for employment and continued matriculation in STEM fields, through receipt of the undergraduate degree and for at least 3 years thereafter.

(b) INCLUSION OF UNDERGRADUATES IN STANDARD RESEARCH GRANTS.—The Director shall require that every recipient of a research grant from the Foundation proposing to include 1 or more students enrolled in certificate, associate, or baccalaureate degree programs in carrying out the research under the grant shall request support, including stipend support, for such undergraduate students as part of the research proposal itself rather than as a supplement to the research proposal, unless such undergraduate participation was not foreseeable at the time of the original proposal.

SEC. 515. STEM INDUSTRY INTERNSHIP PROGRAMS.

(a) IN GENERAL.—The Director may award grants, on a competitive, merit-reviewed basis, to institutions of higher education, or consortia thereof, to establish or expand partnerships with local or regional private sector entities, for the purpose of providing undergraduate students with integrated internship experiences that connect private sector internship experiences with the students' STEM

coursework. The partnerships may also include industry or professional associations.

(b) INTERNSHIP PROGRAM.— The grants awarded under section (a) may include internship programs in the manufacturing sector.

(c) USE OF GRANT FUNDS.—Grants under this section may be used—

(1) to develop and implement hands-on learning opportunities;

(2) to develop curricula and instructional materials related to industry, including the manufacturing sector;

(3) to perform outreach to secondary schools;

(4) to develop mentorship programs for students with partner organizations; and

(5) to conduct activities to support awareness of career opportunities and skill requirements.

(d) PRIORITY.—In awarding grants under this section, the Director shall give priority to institutions of higher education or consortia thereof that demonstrate significant outreach to and coordination with local or regional private sector entities and Regional Centers for the Transfer of Manufacturing Technology established by section 25(a) of the National Institute of Standards and Technology Act (15 U.S.C. 278k(a)) in developing academic courses designed to

provide students with the skills or certifications necessary for employment in local or regional companies.

(c) OUTREACH TO RURAL COMMUNITIES.—The Foundation shall conduct outreach to institutions of higher education and private sector entities in rural areas to encourage those entities to participate in partnerships under this section.

(d) COST-SHARE.—The Director shall require a 50 percent non-Federal cost-share from partnerships established or expanded under this section.

(e) RESTRICTION.—No Federal funds provided under this section may be used—

(1) for the purpose of providing stipends or compensation to students for private sector internships unless private sector entities match 75 percent of such funding; or

(2) as payment or reimbursement to private sector entities, except for institutions of higher education.

(f) REPORT.—Not less than 3 years after the date of enactment of this Act, the Director shall submit a report to Congress on the number and total value of awards made under this section, the number of students affected by those awards, any evidence of the effect of those awards on workforce preparation and jobs placement for participating stu-

dents, and an economic and ethnic breakdown of the participating students.

SEC. 516. CYBER-ENABLED LEARNING FOR NATIONAL CHALLENGES.

The Director shall, in consultation with appropriate Federal agencies, identify ways to use cyber-enabled learning to create an innovative STEM workforce and to help retrain and retain our existing STEM workforce to address national challenges, including national security and competitiveness, and use technology to enhance or supplement laboratory based learning.

SEC. 517. EXPERIMENTAL PROGRAM TO STIMULATE COMPETITIVE RESEARCH.

(a) FINDINGS.—The Congress finds that—

(1) The National Science Foundation Act of 1950 stated, "it shall be an objective of the Foundation to strengthen research and education in the sciences and engineering, including independent research by individuals, throughout the United States, and to avoid undue concentration of such research and education,";

(2) National Science Foundation funding remains highly concentrated, with 27 States and 2 jurisdictions, taken together, receiving only about 10 percent of all NSF research funding; each of these

States received only a fraction of one percent of Foundation's research dollars each year;

(3) the Nation requires the talent, expertise, and research capabilities of all States in order to prepare sufficient numbers of scientists and engineers, remain globally competitive and support economic development.

(b) CONTINUATION OF PROGRAM.—The Director shall continue to carry out EPSCoR, with the objective of helping the eligible States to develop the research infrastructure that will make them more competitive for Foundation and other Federal research funding. The program shall continue to increase as the National Science Foundation funding increases.

(c) CONGRESSIONAL REPORTS.—The Director shall report to the appropriate committees of Congress on an annual basis, using the most recent available data—

(1) the total amount made available, by State, under EPSCoR;

(2) the amount of co-funding made available to EPSCoR States;

(3) the total amount of National Science Foundation funding made available to all institutions and entities within EPSCoR States; and

(4) efforts and accomplishments to more fully integrate the 29 EPSCoR jurisdictions in major activities and initiatives of the Foundation.

(d) COORDINATION OF EPSCOR AND SIMILAR FEDERAL PROGRAMS.—

(1) ANOTHER FINDING.—The Congress finds that a number of Federal agencies have programs, such as Experimental Programs to Stimulate Competitive Research and the National Institutes of Health Institutional Development Award program, designed to increase the capacity for and quality of science and technology research and training at academic institutions in States that historically have received relatively little Federal research and development funding.

(2) COORDINATION REQUIRED.—The EPSCoR Interagency Coordinating Committee, chaired by the National Science Foundation, shall—

(A) coordinate EPSCoR and Federal EPSCoR-like programs to maximize the impact of Federal support for building competitive research infrastructure, and in order to achieve an integrated Federal effort;

(B) coordinate agency objectives with State and institutional goals, to obtain continued non-

Federal support of science and technology research and training;

(C) develop metrics to assess gains in academic research quality and competitiveness, and in science and technology human resource development;

(D) conduct a cross-agency evaluation of EPSCoR and other Federal EPSCoR-like programs and accomplishments, including management, investment, and metric-measuring strategies implemented by the different agencies aimed to increase the number of new investigators receiving peer-reviewed funding, broaden participation, and empower knowledge generation, dissemination, application, and national research and development competitiveness;

(E) coordinate the development and implementation of new, novel workshops, outreach activities, and follow-up mentoring activities among EPSCoR or EPSCoR-like programs for colleges and universities in EPSCoR States and territories in order to increase the number of proposals submitted and successfully funded and to enhance statewide coordination of EPSCoR and Federal EPSCoR-like programs;

(F) coordinate the development of new, innovative solicitations and programs to facilitate collaborations, partnerships, and mentoring activities among faculty at all levels in non-EPSCoR and EPSCoR States and jurisdictions;

(G) conduct an evaluation of the roles, responsibilities and degree of autonomy that program officers or managers (or the equivalent position) have in executing EPSCoR programs at the different Federal agencies and the impacts these differences have on the number of EPSCoR State and jurisdiction faculty participating in the peer review process and the percentage of successful awards by individual EPSCoR State jurisdiction and individual researcher; and

(H) conduct a survey of colleges and university faculty at all levels regarding their knowledge and understanding of EPSCoR, and their level of interaction with and knowledge about their respective State or Jurisdictional EPSCoR Committee.

(3) MEETINGS AND REPORTS.—The Committee shall meet at least twice each fiscal year and shall submit an annual report to the appropriate commit-

tees of Congress describing progress made in carrying out paragraph (2).

(e) FEDERAL AGENCY REPORTS.—Each Federal agency that administers an EPSCoR or Federal EPSCoR-like program shall submit to the OSTP as part of its Federal budget submission—

(1) a description of the program strategy and objectives;

(2) a description of the awards made in the previous year, including—

(A) the percentage of reviewers and number of new reviewers from EPSCoR States;

(B) the percentage of new investigators from EPSCoR States;

(C) the number of programs or large collaborator awards involving a partnership of organizations and institutions from EPSCoR and non-EPSCoR States; and

(3) an analysis of the gains in academic research quality and competitiveness, and in science and technology human resource development, achieved by the program in the last year.

(f) NATIONAL ACADEMY OF SCIENCES STUDY.—

(1) IN GENERAL.—The Director shall contract with the National Academy of Sciences to conduct a

study on all Federal agencies that administer an Experimental Program to Stimulate Competitive Research or a program similar to the Experimental Program to Stimulate Competitive Research.

(2) MATTERS TO BE ADDRESSED.—The study conducted under paragraph (1) shall include the following:

(A) A delineation of the policies of each Federal agency with respect to the awarding of grants to EPSCoR States.

(B) The effectiveness of each program.

(C) Recommendations for improvements for each agency to achieve EPSCoR goals.

(D) An assessment of the effectiveness of EPSCoR States in using awards to develop science and engineering research and education, and science and engineering infrastructure within their States.

(E) Such other issues that address the effectiveness of EPSCoR as the National Academy of Sciences considers appropriate.

SEC. 518. SENSE OF THE CONGRESS REGARDING THE SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS TALENT EXPANSION PROGRAM.

It is the sense of the Congress that—

(1) the Science, Technology, Engineering, and Mathematics Talent Expansion Program established by the National Science Foundation Authorization Act of 2002 continues to be an effective program to increase the number of students, who are citizens or permanent residents of the United States, receiving associate or baccalaureate degrees in established or emerging fields within science, technology, engineering, and mathematics, and its authorization continues;

(2) the strategies employed continue to strengthen mentoring and tutoring between faculty and students and provide students with information and exposure to potential career pathways in science, technology, engineering, and mathematics areas;

(3) this highly competitive program awarded 145 Program implementation awards and 12 research projects in the first 6 years of operations; and

(4) the Science, Technology, Engineering, and Mathematics Talent Expansion Program should con-

tinue to be supported by the National Science Foundation.

SEC. 519. SENSE OF THE CONGRESS REGARDING THE NATIONAL SCIENCE FOUNDATION'S CONTRIBUTIONS TO BASIC RESEARCH AND EDUCATION.

(a) FINDINGS.—The Congress finds that—

(1) the National Science Foundation is an independent Federal agency created by Congress in 1950 to, among other things, promote the progress of science, to advance the national health, prosperity, and welfare, and to secure the national defense;

(2) the Foundation is the funding source for approximately 20 percent of all federally supported basic research conducted by America's colleges and universities, and is the major source of Federal backing for mathematics, computer science and other sciences;

(3) the America COMPETES Act of 2007 helped rejuvenate our focus on increasing basic research investment in the physical sciences, strengthening educational opportunities in the science, technology, engineering, and mathematics fields and developing a robust innovation infrastructure; and

(4) reauthorization of the America COMPETES Act should continue a robust investment in basic re-

search and education and preserve the essence of the original Act by increasing the investment focus on science, technology, engineering, and mathematics basic research and education as a national priority.

(b) SENSE OF THE CONGRES.—It is the sense of the Congress that—

(1) the National Science Foundation is the finest scientific foundation in the world, and is a vital agency that must support basic research needed to advance the United States into the 21st century;

(2) the National Science Foundation should focus Federal research and development resources primarily in the areas of science, technology, engineering, and mathematics basic research and education; and

(3) the National Science Foundation should strive to ensure that federally-supported research is of the finest quality, is ground breaking, and answers questions or solves problems that are of utmost importance to society at large.

SEC. 520. GRANTEE REPORTS ON COMMERCIALIZATION STRATEGY AND RESULTS.

(a) IN GENERAL.—Any institution of higher education (as such term is defined in section 101(a) of the Higher Education Act of 1965 (20 U.S.C. 1001(a))) that receives

1 or more grants of financial assistance from the National Science Foundation for research shall submit a report to the Foundation at the end of the first year of the grants, and at the end of each subsequent year in which funds are received pursuant to such grants, describing—

(1) the institution's strategy for commercializing the results of research supported by such grants;

(2) the implementation of the strategy with respect to research supported by the grants; and

(3) the results of its efforts to realize the commercial potential of the research supported by those grants.

(b) WEBSITE.—The Foundation shall post reports received under this section on a website accessible to and searchable by the public.

(c) TRADE SECRET INFORMATION.—An institution of higher education that submits reports to the Foundation under this section shall not reveal confidential, trade secret, or proprietary information in such reports.

SEC. 521. STUDY TO DEVELOP IMPROVED IMPACT-ON-SOCIETY METRICS.

(a) IN GENERAL.—Within 180 days after the date of enactment of this Act, the Director of the National Science Foundation shall contract with the National Academy of Sciences to initiate a study to evaluate, develop, or improve

metrics for measuring the potential impact-on-society, including—

(1) the potential for commercial applications of research studies funded in whole or in part by grants of financial assistance from the Foundation or other Federal agencies;

(2) the manner in which research conducted at, and individuals graduating from, an institution of higher education contribute to the development of new intellectual property and the success of commercial activities;

(3) the quality of relevant scientific and international publications; and

(4) the ability of such institutions to attract external research funding.

(b) REPORT.—Within 1 year after initiating the study required by subsection (a), the Director shall submit a report to the Senate Committee on Commerce, Science, and Transportation and the House of Representatives Committee on Science and Technology setting forth the Director's findings, conclusions, and recommendations.

SEC. 522. NSF GRANTS IN SUPPORT OF SPONSORED POST-DOCTORAL FELLOWSHIP PROGRAMS.

The Director of the National Science Foundation may utilize funds appropriated to carry out grants to institu-

tions of higher education (as such term is defined in section 101(a) of the Higher Education Act of 1965 (20 U.S.C. 1001(a))) to provide financial support for post-graduate research in fields with potential commercial applications to match, in whole or in part, any private sector grant of financial assistance to any post-doctoral program in such a field of study.

SEC. 523. COLLABORATION IN PLANNING FOR STEWARDSHIP OF LARGE-SCALE FACILITIES.

It is the sense of Congress that—

(1) the Foundation should, in its planning for construction and stewardship of large facilities, coordinate and collaborate with other Federal agencies, including the Department of Energy's Office of Science, to ensure that joint investments may be made when practicable;

(2) in particular, the Foundation should ensure that it responds to recommendations by the National Academy of Sciences and working groups convened by the National Science and Technology Council regarding such facilities and opportunities for partnership with other agencies in the design and construction of such facilities; and

(3) for facilities in which research in multiple disciplines will be possible, the Director should in-

clude multiple units within the Foundation during the planning process.

SEC. 524. CLOUD COMPUTING RESEARCH ENHANCEMENT.

(a) RESEARCH FOCUS AREA.—The Director may support a national research agenda in key areas affected by the increased use of public and private cloud computing, including—

(1) new approaches, techniques, technologies, and tools for—

(A) optimizing the effectiveness and efficiency of cloud computing environments; and

(B) mitigating security, identity, privacy, reliability, and manageability risks in cloud-based environments, including as they differ from traditional data centers;

(2) new algorithms and technologies to define, assess, and establish large-scale, trustworthy, cloud-based infrastructures;

(3) models and advanced technologies to measure, assess, report, and understand the performance, reliability, energy consumption, and other characteristics of complex cloud environments; and

(4) advanced security technologies to protect sensitive or proprietary information in global-scale cloud environments.

(b) ESTABLISHMENT.—

(1) IN GENERAL.—Not later than 60 days after the date of enactment of this Act, the Director shall initiate a review and assessment of cloud computing research opportunities and challenges, including research areas listed in subsection (a), as well as related issues such as—

(A) the management and assurance of data that are the subject of Federal laws and regulations in cloud computing environments, which laws and regulations exist on the date of enactment of this Act;

(B) misappropriation of cloud services, piracy through cloud technologies, and other threats to the integrity of cloud services;

(C) areas of advanced technology needed to enable trusted communications, processing, and storage; and

(D) other areas of focus determined appropriate by the Director.

(2) UNSOLICITED PROPOSALS.—The Director may accept unsolicited proposals that review and assess the issues described in paragraph (1). The proposals may be judged according to existing criteria of the National Science Foundation.

(c) REPORT.—The Director shall provide an annual report for not less than 5 consecutive years to Congress on the outcomes of National Science Foundation investments in cloud computing research, recommendations for research focus and program improvements, or other related recommendations. The reports, including any interim findings or recommendations, shall be made publicly available on the website of the National Science Foundation.

(d) NIST SUPPORT.—The Director of the National Institute of Standards and Technology shall—

(1) collaborate with industry in the development of standards supporting trusted cloud computing infrastructures, metrics, interoperability, and assurance; and

(2) support standards development with the intent of supporting common goals.

SEC. 525. TRIBAL COLLEGES AND UNIVERSITIES PROGRAM.

(a) IN GENERAL.—The Director shall continue to support a program to award grants on a competitive, merit-reviewed basis to tribal colleges and universities (as defined in section 316 of the Higher Education Act of 1965 (20 U.S.C. 1059c), including institutions described in section 317 of such Act (20 U.S.C. 1059d), to enhance the quality of undergraduate STEM education at such institutions and to increase the retention and graduation rates of Native

American students pursuing associate's or baccalaureate degrees in STEM.

(b) PROGRAM COMPONENTS.—Grants awarded under this section shall support—

(1) activities to improve courses and curriculum in STEM;

(2) faculty development;

(3) stipends for undergraduate students participating in research; and

(4) other activities consistent with subsection (a), as determined by the Director.

(c) INSTRUMENTATION.—Funding provided under this section may be used for laboratory equipment and materials.

SUBTITLE B—STEM-TRAINING GRANT PROGRAM

SEC. 551. PURPOSE.

The purpose of this subtitle is to replicate and implement programs at institutions of higher education that provide integrated courses of study in science, technology, engineering, or mathematics, and teacher education, that lead to a baccalaureate degree in science, technology, engineering, or mathematics with concurrent teacher certification.

SEC. 552. PROGRAM REQUIREMENTS.

The Director shall replicate and implement undergraduate degree programs under this subtitle that—

(1) are designed to recruit and prepare students who pursue a baccalaureate degree in science, technology, engineering, or mathematics to become certified as elementary and secondary teachers;

(2) require the education department (or its equivalent) and the departments or division responsible for preparation of science, technology, engineering, and mathematics majors at an institution of higher education to collaborate in establishing and implementing the program at that institution;

(3) require students participating in the program to enter the program through a field-based course and to continue to complete field-based courses supervised by master teachers throughout the program;

(4) hire sufficient teachers so that the ratio of students to master teachers in the program does not exceed 100 to 1;

(5) include instruction in the use of scientifically-based instructional materials and methods, assessments, pedagogical content knowledge (including the interaction between mathematics and science), the use of instructional technology, and how to incor-

porate State and local standards into the classroom curriculum;

(6) restrict to students participating in the program those courses that are specifically designed for the needs of teachers of science, technology, engineering, and mathematics; and

(7) require students participating in the program to successfully complete a final evaluation of their teaching proficiency, based on their classroom teaching performance, conducted by multiple trained observers, and a portfolio of their accomplishments.

SEC. 553. GRANT PROGRAM.

(a) IN GENERAL.—The Director shall establish a grant program to support programs at institutions of higher education to carry out the purpose of this subtitle.

(b) GEOGRAPHICAL CONSIDERATIONS.—In the administration of this subtitle, the Director shall take such steps as may be necessary to ensure that grants are equitably distributed across all regions of the United States, taking into account population density and other geographic and demographic considerations.

(c) AMOUNT OF GRANT.—Subject to the requirements of subsection (d), the Director may award grants annually on a competitive basis to institutions of higher education in the amount of $2,000,000, per institution of which—

(1) $1,500,000 shall be used—

(A) to design, implement, and evaluate a program that meets the requirements of section 552;

(B) to employ master teachers at the institution to oversee field experiences;

(C) to provide a stipend to mentor teachers participating in the program; and

(D) to support curriculum development and implementation strategies for science, technology, engineering, and mathematics content courses taught through the program; and

(2) up to $500,000 shall be set aside by the grantee for technical support and evaluation services from the institution whose programs will be replicated.

(d) ELIGIBILITY.—To be eligible to apply for a grant under this section, an institution of higher education shall—

(1) include former secondary school science, technology, engineering, or mathematics master teachers as faculty in its science department for this program;

(2) grant terminal degrees in science, technology, engineering, and mathematics; and

(3) have a process to be used in establishing partnerships with local educational agencies for placement of participating students in their field experiences, including a process for identifying mentor teachers working in local schools to supervise classroom field experiences in cooperation with university-based master teachers;

(4) maintain policies allowing flexible entry to the program throughout the undergraduate coursework;

(5) require that master teachers employed by the institution will supervise field experiences of students in the program;

(6) require that the program complies with State certification or licensing requirements and the requirements under section 9101(23) of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 7801(23)) for highly qualified teachers;

(7) develop during the course of the grant a plan for long-term support and assessment of its graduates, which shall include—

(A) induction support for graduates in their first one to two years of teaching;

(B) systems to determine the teaching status of graduates and thereby determine retention rates; and

(C) methods to analyze the achievement of students taught by graduates, and methods to analyze classroom practices of graduates; and

(8) be able upon completion of the grant at the end of 5 years to fund essential program costs, including salaries of master teachers and other necessary personnel, from recurring university budgets.

(e) APPLICATION REQUIREMENTS.—An institution of higher education seeking a grant under the program shall submit an application to the Director in such form, at such time, and containing such information and assurances as the Director may require, including—

(1) a description of the current rate at which individuals majoring in science, technology, engineering, and mathematics become certified as elementary and secondary teachers;

(2) a description for the institution's plan for increasing the numbers of students enrolled in and graduating from the program supported under this subtitle;

(3) a description of the institution's capacity to develop a program in which individuals majoring in

science, technology, engineering, and mathematics can become certified as elementary and secondary teachers;

(4) identification of the organizational unit within the department or division of arts and sciences or the science department at the institution that will adopt teacher certification for elementary and secondary teachers as its primary mission;

(5) identification of core faculty within the department or division of arts and sciences or the science department at the institution to champion teacher preparation in their departments by teaching courses dedicated to preparing future elementary and secondary school teachers, helping create new degree plans, advising prospective students within their major, and assisting as needed with program administration;

(6) identification of core faculty in the education department or its equivalent at the institution to champion teacher preparation by creating and teaching courses specific to the preparation of science, technology, engineering, and mathematics and working closely with colleagues in the department or division of arts and sciences or the science department; and

(7) a description of involving practical, field-based experience in teaching and degree plans enabling students to graduate in 4 years with a major in science, technology, engineering, or mathematics and elementary or secondary school teacher certification.

(f) MATCHING REQUIREMENT.—An institution of higher education may not receive a grant under this section unless it provides, from non-federal sources, to carry out the activities supported by the grant, an amount that is not less than—

(1) 35 percent of the amount of the grant for the first fiscal year of the grant;

(2) 55 percent of the amount of the grant for the second and third fiscal years of the grant; and

(3) 75 percent of the amount of the grant for the fourth and fifth fiscal years of the grant.

(g) GUIDANCE.—Within 90 days after the date of enactment of this Act, the Director shall initiate a proceeding to promulgate guidance for the administration of the grant program established under subsection (a).

SEC. 554. GRANT OVERSIGHT AND ADMINISTRATION.

(a) IN GENERAL.—The Director may execute a contract for program oversight and fiscal management with an organization at an institution of higher education, a non-

profit organization, or other entity that demonstrates capacity for and experience in—

(1) replicating 1 or more similar programs at regional or national levels;

(2) providing programmatic and technical implementation assistance for the program;

(3) performing data collection and analysis to ensure proper implementation and continuous program improvement; and

(4) providing accountability for results by measuring and monitoring achievement of programmatic milestones.

(b) OVERSIGHT RESPONSIBILITIES.—

(1) MANDATORY DUTIES.—If the Director executes a contract under subsection (a) with an organization for program oversight and fiscal management, the organization shall—

(A) ensure that a grant recipient faithfully replicates and implements the program or programs for which the grant is awarded;

(B) ensure that grant funds are used for the purposes authorized and that a grant recipient has a system in place to track and account for all Federal grant funds provided;

(C) provide technical assistance to grant recipients;

(D) collect and analyze data and report to the Director annually on the effects of the program on—

(i) the progress of participating students in achieving teaching competence and teaching certification;

(ii) the participation of students in the program by major, compared with local and State needs on secondary teachers by discipline; and

(iii) the participation of students in the program by demographic subgroup;

(E) collect and analyze data and report to the Director annually on the effects of the program on the academic achievement of elementary and secondary school students taught by graduates of programs funded by grants under this subtitle; and

(F) submit an annual report to the Director demonstrating compliance with the requirements of subparagraphs (A) through (E).

(2) DISCRETIONARY DUTIES.—At the request of the Director, the organization under contract under

subsection (a) may assist the Director in evaluating grant applications.

(c) REPORTS TO CONGRESS.—The Director shall submit a copy of the annual report required by subsection (b)(1)(F) 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.

SEC. 555. DEFINITIONS.

In this subtitle:

(1) FIELD-BASED COURSE.—The term "field-based course" means a course of instruction offered by an institution of higher education that includes a requirement that students teach a minimum of 3 lessons or sequences of lessons to elementary or secondary students.

(2) INSTITUTION OF HIGHER EDUCATION.—The term "institution of higher education" has the meaning given that term by section 101 of the Higher Education Act of 1965 (20 U.S.C. 1001).

(3) MASTER TEACHER.—The term "master teacher" means an individual—

(A) who has been awarded a master's or doctoral degree by an institution of higher education;

(B) whose graduate coursework included courses in mathematics, science, computer science, or engineering;

(C) who has at least 3 years teaching experience in K-12 settings; and

(D) whose teaching has been recognized for exceptional accomplishments in educating students, or is demonstrated to have resulted in improved student achievement.

(4) MENTOR TEACHER.—The term ''mentor teacher'' means an elementary or secondary school classroom teacher who assists with the training of students participating in a field-based course.

(5) DIRECTOR.—The term ''Director'' means the Director of the National Science Foundation.

SEC. 557. AUTHORIZATION OF APPROPRIATIONS.

There are authorized to be appropriated to the Director to carry out this subtitle $10,000,000 for each of fiscal years 2011 through 2013.

TITLE VI—INNOVATION

SEC. 601. OFFICE OF INNOVATION AND ENTREPRENEURSHIP.

The Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3701 et seq.), as amended by section 106 of this Act, is amended by adding at the end the following:

"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 commercialization 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. 602. FEDERAL LOAN GUARANTEES FOR INNOVATIVE TECHNOLOGIES IN MANUFACTURING.

The Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3701 et seq.), as amended by section 601, is further amended by adding at the end the following:

"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 (l).

"(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.

"(g) 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.

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

"(i) 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.

"(j) 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.

"(k) 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.

"(l) 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 (i), 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.

"(m) 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.

"(n) 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.

"(o) 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.

"(p) 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.

"(q) 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.

"(r) 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.

"(s) 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 signifi-

cantly 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).

"(t) AUTHORIZATION OF APPROPRIATIONS.—

"(1) COST OF LOAN GUARANTEES.—There are authorized to be appropriated $100,000,000 for each of fiscal years 2011 through 2013 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 (f).".

SEC. 603. REGIONAL INNOVATION PROGRAM.

The Stevenson-Wydler Technology Innovation Act of 1980 (15 U.S.C. 3701 et seq.), as amended by section 602, is further amended by adding at the end thereof the following:

"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, in-

cluding 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 grants 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)(3)(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 assist-

ance 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 geographi-

cally 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.".

SEC. 604. STUDY ON ECONOMIC COMPETITIVENESS AND INNOVATIVE CAPACITY OF UNITED STATES AND DEVELOPMENT OF NATIONAL ECONOMIC COMPETITIVENESS STRATEGY.

(a) STUDY.—

(1) IN GENERAL.—Not later than 1 year after the date of the enactment of this Act, the Secretary of Commerce shall complete a comprehensive study of the economic competitiveness and innovative capacity of the United States.

(2) MATTERS COVERED.—The study required by paragraph (1) shall include the following:

(A) An analysis of the United States economy and innovation infrastructure.

(B) An assessment of the following:

(i) The current competitive and innovation performance of the United States economy relative to other countries that compete economically with the United States.

(ii) Economic competitiveness and domestic innovation in the current business climate, including tax and Federal regulatory policy.

(iii) The business climate of the United States and those of other countries that

compete economically with the United States.

(iv) Regional issues that influence the economic competitiveness and innovation capacity of the United States, including—

(I) the roles of State and local governments and institutions of higher education; and

(II) regional factors that contribute positively to innovation.

(v) The effectiveness of the Federal Government in supporting and promoting economic competitiveness and innovation, including any duplicative efforts of, or gaps in coverage between, Federal agencies and departments.

(vi) Barriers to competitiveness in newly emerging business or technology sectors, factors influencing underperforming economic sectors, unique issues facing small and medium enterprises, and barriers to the development and evolution of start-ups, firms, and industries.

(vii) The effects of domestic and international trade policy on the competitiveness

of the United States and the United States economy.

(viii) United States export promotion and export finance programs relative to export promotion and export finance programs of other countries that compete economically with the United States, including Canada, France, Germany, Italy, Japan, Korea, and the United Kingdom, with noting of export promotion and export finance programs carried out by such countries that are not analogous to any programs carried out by the United States.

(ix) The effectiveness of current policies and programs affecting exports, including an assessment of Federal trade restrictions and State and Federal export promotion activities.

(x) The effectiveness of the Federal Government and Federally funded research and development centers in supporting and promoting technology commercialization and technology transfer.

(xi) Domestic and international intellectual property policies and practices.

(xii) Manufacturing capacity, logistics, and supply chain dynamics of major export sectors, including access to a skilled workforce, physical infrastructure, and broadband network infrastructure.

(xiii) Federal and State policies relating to science, technology, and education and other relevant Federal and State policies designed to promote commercial innovation, including immigration policies.

(C) Development of recommendations on the following:

(i) How the United States should invest in human capital.

(ii) How the United States should facilitate entrepreneurship and innovation.

(iii) How best to develop opportunities for locally and regionally driven innovation by providing Federal support.

(iv) How best to strengthen the economic infrastructure and industrial base of the United States.

(v) How to improve the international competitiveness of the United States.

(3) CONSULTATION.—

(A) IN GENERAL.—The study required by paragraph (1) shall be conducted in consultation with the National Economic Council of the Office of Policy Development, such Federal agencies as the Secretary considers appropriate, and the Innovation Advisory Board established under subparagraph (B). The Secretary shall also establish a process for obtaining comments from the public.

(B) INNOVATION ADVISORY BOARD.—

(i) IN GENERAL.—The Secretary shall establish an Innovation Advisory Board for purposes of obtaining advice with respect to the conduct of the study required by paragraph (1).

(ii) COMPOSITION.—The Advisory Board established under clause (i) shall be comprised of 15 members, appointed by the Secretary—

(I) who shall represent all major industry sectors;

(II) a majority of whom should be from private industry, including large and small firms, representing advanced

technology sectors and more traditional sectors that use technology; and

(III) who may include economic or innovation policy experts, State and local government officials active in technology-based economic development, and representatives from higher education.

(iii) EXEMPTION FROM FACA.—The Federal Advisory Committee Act (5 U.S.C. App.) shall not apply to the advisory board established under clause (i).

(b) STRATEGY.—

(1) IN GENERAL.—Not later than 1 year after the completion of the study required by subsection (a), the Secretary shall develop, based on the study required by subsection (a)(1), a national 10-year strategy to strengthen the innovative and competitive capacity of the Federal Government, State and local governments, United States institutions of higher education, and the private sector of the United States.

(2) ELEMENTS.—The strategy required by paragraph (1) shall include the following:

(A) Actions to be taken by individual Federal agencies and departments to improve competitiveness.

(B) Proposed legislative actions for consideration by Congress.

(C) Annual goals and milestones for the 10-year period of the strategy.

(D) A plan for monitoring the progress of the Federal Government with respect to improving conditions for innovation and the competitiveness of the United States.

(c) REPORT.—

(1) IN GENERAL.—Upon the completion of the strategy required by subsection (b), the Secretary of Commerce shall submit to Congress and the President a report on the study conducted under subsection (a) and the strategy developed under subsection (b).

(2) ELEMENTS.—The report required by paragraph (1) shall include the following:

(A) The findings of the Secretary with respect to the study conducted under subsection (a).

(B) The strategy required by subsection (b).

SEC. 605. PROMOTING USE OF HIGH-END COMPUTING SIMULATION AND MODELING BY SMALL- AND MEDIUM-SIZED MANUFACTURERS.

(a) FINDINGS.—Congress finds that—

(1) the utilization of high-end computing simulation and modeling by large-scale government contractors and Federal research entities has resulted in substantial improvements in the development of advanced manufacturing technologies; and

(2) such simulation and modeling would also benefit small- and medium-sized manufacturers in the United States if such manufacturers were to deploy such simulation and modeling throughout their manufacturing chains.

(b) POLICY.—It is the policy of the United States to take all effective measures practicable to ensure that Federal programs and policies encourage and contribute to the use of high-end computing simulation and modeling in the United States manufacturing sector.

(c) STUDY.—

(1) IN GENERAL.—Not later than 30 days after the date of the enactment of this Act, the Secretary of Commerce, in consultation with the Secretary of Energy and the Director of the Office of Science and Technology Policy, shall carry out, through an interagency consulting process, a study of the barriers to

the use of high-end computing simulation and modeling by small- and medium-sized manufacturers in the United States.

(2) FACTORS.—In carrying out the study required by paragraph (1), the Secretary of Commerce, in consultation with the Secretary of Energy and the Director of the Office of Science and Technology Policy, shall consider the following:

(A) The access of small- and medium-sized manufacturers in the United States to high-performance computing facilities and resources.

(B) The availability of software and other applications tailored to meet the needs of such manufacturers.

(C) Whether such manufacturers employ or have access to individuals with appropriate expertise for the use of such facilities and resources.

(D) Whether such manufacturers have access to training to develop such expertise.

(E) The availability of tools and other methods to such manufacturers to understand and manage the costs and risks associated with transitioning to the use of such facilities and resources.

(3) REPORT.—Not later than 270 days after the commencement of the study required by paragraph (1), the Secretary of Commerce shall, in consultation with the Secretary of Energy and the Director of the Office of Science and Technology Policy, submit to Congress a report on such study. Such report shall include such recommendations for such legislative or administrative action as the Secretary of Commerce considers appropriate in light of the study to increase the utilization of high-end computing simulation and modeling by small- and medium-sized manufacturers in the United States.

(d) AUTHORIZATION OF DEMONSTRATION AND PILOT PROGRAMS.—As part of the study required by subsection (c)(1), the Secretary of Commerce, the Secretary of Energy, and the Director of the Office of Science and Technology Policy may carry out such demonstration or pilot programs as either Secretary or the Director considers appropriate to gather experiential data to evaluate the feasibility and advisability of a specific program or policy initiative to reduce barriers to the utilization of high-end computer modeling and simulation by small- and medium-sized manufacturers in the United States.

(e) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated such sums as may be necessary to carry out this section.

TITLE VII——NIST GREEN JOBS

SEC. 701. SHORT TITLE.

This title may 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".

SEC. 702. FINDINGS.

Congress finds the following:

(1) Over its 20-year existence, the Hollings Manufacturing Extension Partnership has proven its value to manufacturers as demonstrated by the resulting impact on jobs and the economies of all 50 States and the Nation as a whole.

(2) The Hollings Manufacturing Extension Partnership has helped thousands of companies reinvest in themselves through process improvement and business growth initiatives leading to more sales, new markets, and the adoption of technology to deliver new products and services.

(3) Manufacturing is an increasingly important part of the construction sector as the industry moves

to the use of more components and factory built subassemblies.

(4) Construction practices must become more efficient and precise if the United States is to construct and renovate its building stock to reduce related carbon emissions to levels that are consistent with combating global warming.

(5) Many companies involved in construction are small, without access to innovative manufacturing techniques, and could benefit from the type of training and business analysis activities that the Hollings Manufacturing Extension Partnership routinely provides to the Nation's manufacturers and their supply chains.

(6) Broadening the competitiveness grant program under section 25(f) of the National Institute of Standards and Technology Act (15 U.S.C. 278k(f)) could help develop and diffuse knowledge necessary to capture a large portion of the estimated $100 billion or more in energy savings if buildings in the United States met the level and quality of energy efficiency now found in buildings in certain other countries.

(7) It is therefore in the national interest to expand the capabilities of the Hollings Manufacturing

Extension Partnership to be supportive of the construction and green energy industries.

SEC. 703. NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY COMPETITIVE GRANT PROGRAM.

(a) IN GENERAL.—Section 25(f)(3) of the National Institute of Standards and Technology Act (15 U.S.C. 278k(f)(3)) is amended—

(1) by striking "to develop" in the first sentence and inserting "to add capabilities to the MEP program, including the development of"; and

(2) by striking the last sentence and inserting "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 edu-

cation, laboratories, and other technology producing entities; and

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

(b) SELECTION.—Section 25(f)(5) of the National Institute of Standards and Technology Act (15 U.S.C. 278k(f)(5)) is amended to read as follows:

"(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.".

(c) OTHER MODIFICATIONS.—Section 25(f) of the National Institute of Standards and Technology Act (15 U.S.C. 278k(f)) is amended—

(1) by adding at the end the following:

"(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.".

TITLE VIII—GENERAL PROVISIONS

SEC. 801. GOVERNMENT ACCOUNTABILITY OFFICE REVIEW.

Not later than May 31, 2013, the Comptroller General of the United States shall submit a report to the Senate Committee on Commerce, Science, and Transportation and the House of Representatives Committee on Science and Technology that evaluates the status of the programs authorized in this Act, including the extent to which such programs have been funded, implemented, and are contributing to achieving the goals of the Act.

SEC. 802. SALARY RESTRICTIONS.

(a) OBSCENE MATTER ON FEDERAL PROPERTY.—None of the funds authorized under this Act may be used to pay the salary of any individual who is convicted of violating section 1460 of title 18, United States Code.

(b) USE OF FEDERAL COMPUTERS FOR CHILD PORNOGRAPHY OR EXPLOITATION OF MINORS.—None of the funds authorized under this Act may be used to pay the salary of any individual who is convicted of a violation of section 2252 of title 18, United States Code.

SEC. 803. ADDITIONAL RESEARCH AUTHORITIES OF THE FCC.

Title I of the Communications Act of 1934 (47 U.S.C. 151 et seq.) is amended by adding at the end the following:

"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.".

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111TH CONGRESS
2D SESSION

S. 3605

[Report No. 111–363]

A BILL

To invest in innovation through research and development, to improve the competitiveness of the United States, and for other purposes.

DECEMBER 10, 2010

Reported with an amendment