

111TH CONGRESS  
2D SESSION

# S. 3605

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

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IN THE SENATE OF THE UNITED STATES

JULY 15, 2010

Mr. ROCKEFELLER introduced the following bill; which was read twice and referred to the Committee on Commerce, Science, and Transportation

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## A BILL

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

1 *Be it enacted by the Senate and House of Representa-*  
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE; TABLE OF CONTENTS.**

4 (a) SHORT TITLE.—This Act may be cited as the  
5 “America COMPETES Reauthorization Act of 2010” or  
6 the “America Creating Opportunities to Meaningfully Pro-  
7 mote Excellence in Technology, Education, and Science  
8 Reauthorization Act of 2010”.

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

- Sec. 1. Short title; table of contents.
- Sec. 2. Definitions.

#### TITLE I—OFFICE OF SCIENCE AND TECHNOLOGY POLICY

- Sec. 101. National innovation and competitiveness strategy.
- Sec. 102. Coordination of Federal STEM education.
- Sec. 103. Cyberinfrastructure improvement study.
- Sec. 104. Interagency public access committee.
- Sec. 105. Federal scientific collections.
- Sec. 106. Prize competitions.

#### TITLE II—NATIONAL AERONAUTICS AND SPACE ADMINISTRATION.

- Sec. 201. NASA's contribution to innovation and competitiveness.
- Sec. 202. NASA's contribution to education.
- Sec. 203. International Space Station's contribution to national competitiveness enhancement.
- Sec. 204. Definitions.

#### TITLE III—OCEAN AND ATMOSPHERIC PROGRAMS

- Sec. 301. Oceanic and atmospheric research and development program.
- Sec. 302. Ocean and atmospheric science education programs.
- Sec. 303. Workforce study.

#### TITLE IV—NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY

- Sec. 401. Short title.
- Sec. 402. Authorization of appropriations.
- Sec. 403. Under Secretary of Commerce for Standards and Technology.
- Sec. 404. Manufacturing extension partnership.
- Sec. 405. Emergency communication and tracking technologies research initiative.
- Sec. 406. Broadening participation.
- Sec. 407. NIST Fellowships.
- Sec. 408. Green manufacturing and construction.
- Sec. 409. Cybersecurity competition and challenge.
- Sec. 410. Definitions.

#### TITLE V—NATIONAL SCIENCE FOUNDATION

- Sec. 501. Short title.
- Sec. 502. Definitions.
- Sec. 503. Authorization of appropriations.
- Sec. 504. National Science Board administrative amendments.
- Sec. 505. National Center for Science and Engineering statistics.
- Sec. 506. National Science Foundation manufacturing research and education.
- Sec. 507. National Science Board report on mid-scale instrumentation.
- Sec. 508. Partnerships for innovation.
- Sec. 509. Green chemistry basic research.
- Sec. 510. Graduate student support.
- Sec. 511. Robert Noyce teacher scholarship program.
- Sec. 512. Undergraduate broadening participation program.
- Sec. 513. Research experiences for high school students.

- Sec. 514. Research experiences for undergraduates.  
 Sec. 515. STEM industry internship programs.  
 Sec. 516. Cyber-enabled learning for national challenges.  
 Sec. 517. Federal cybersecurity research and development.  
 Sec. 518. Federal cyber scholarship-for-service program.

#### TITLE VI—INNOVATION

- Sec. 601. Office of innovation and entrepreneurship.  
 Sec. 602. Federal loan guarantees for innovative technologies in manufacturing.  
 Sec. 603. Regional innovation program.  
 Sec. 604. Science and research parks.

#### TITLE VII—GENERAL PROVISIONS

- Sec. 701. Government Accountability Office review.  
 Sec. 702. Salary restrictions.

### 1 **SEC. 2. DEFINITIONS.**

2 In this Act:

3 (1) DIRECTOR.—

4 (A) In title I, the term “Director” means  
 5 the Director of the Office of Science and Tech-  
 6 nology Policy.

7 (B) In title V, the term “Director” means  
 8 the Director of the National Institute of Science  
 9 and Technology.

10 (2) STEM.—The term “STEM” means the  
 11 academic and professional disciplines of science,  
 12 technology, engineering, and mathematics.

## 13 **TITLE I—OFFICE OF SCIENCE** 14 **AND TECHNOLOGY POLICY**

### 15 **SEC. 101. NATIONAL INNOVATION AND COMPETITIVENESS** 16 **STRATEGY.**

17 Not later than one year after the date of the enact-  
 18 ment of this Act, the Director of the Office of Science and

1 Technology Policy shall submit to Congress and the Presi-  
2 dent a national innovation and competitiveness strategy  
3 for strengthening the innovative and competitive capacity  
4 of the Federal Government, State and local governments,  
5 institutions of higher education, and the private sector  
6 that includes—

- 7 (1) proposed legislative changes and action;
- 8 (2) proposed actions to be taken collectively by  
9 executive agencies, including White House offices;
- 10 (3) proposed actions to be taken by individual  
11 executive agencies, including White House offices;
- 12 and
- 13 (4) a proposal for metrics-based monitoring and  
14 oversight of the progress of the Federal Government  
15 with respect to improving conditions for the innova-  
16 tion occurring in and the competitiveness of the  
17 United States.

18 **SEC. 102. COORDINATION OF FEDERAL STEM EDUCATION.**

19 (a) ESTABLISHMENT.—The Director shall establish a  
20 committee under the National Science and Technology  
21 Council, including the Office of Management and Budget,  
22 with the responsibility to coordinate Federal programs and  
23 activities in support of STEM education, including at the  
24 National Science Foundation, the Department of Energy,  
25 the National Aeronautics and Space Administration, the

1 National Oceanic and Atmospheric Administration, the  
2 Department of Education, and all other Federal agencies  
3 that have programs and activities in support of STEM  
4 education.

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

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

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

12 (3) review STEM education activities and pro-  
13 grams to ensure they are not duplicative of similar  
14 efforts within the Federal government;

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

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

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

23 (C) describe the approaches that will be  
24 taken by each participating agency to assess the

1 effectiveness of its STEM education programs  
2 and activities; and

3 (D) with respect to subparagraph (A), de-  
4 scribe the role of each agency in supporting  
5 programs and activities designed to achieve the  
6 objectives; and

7 (5) establish, periodically update, and maintain  
8 an inventory of federally sponsored STEM education  
9 programs and activities, including documentation of  
10 assessments of the effectiveness of such programs  
11 and activities and rates of participation by women,  
12 underrepresented minorities, and persons in rural  
13 areas in such programs and activities.

14 (b) RESPONSIBILITIES OF OSTP.—The Director  
15 shall encourage and monitor the efforts of the partici-  
16 pating agencies to ensure that the strategic plan under  
17 subsection (b)(2) is developed and executed effectively and  
18 that the objectives of the strategic plan are met.

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

23 (1) a description of the STEM education pro-  
24 grams and activities for the previous and current fis-  
25 cal years, and the proposed programs and activities

1 under the President’s budget request, of each par-  
2 ticipating Federal agency;

3 (2) the levels of funding for each participating  
4 Federal agency for the programs and activities de-  
5 scribed under paragraph (1) for the previous fiscal  
6 year and under the President’s budget request;

7 (3) an evaluation of the levels of duplication  
8 and fragmentation of the programs and activities de-  
9 scribed under paragraph (1);

10 (4) except for the initial annual report, a de-  
11 scription of the progress made in carrying out the  
12 implementation plan, including a description of the  
13 outcome of any program assessments completed in  
14 the previous year, and any changes made to that  
15 plan since the previous annual report; and

16 (5) a description of how the participating Fed-  
17 eral agencies will disseminate information about fed-  
18 erally supported resources for STEM education  
19 practitioners, including teacher professional develop-  
20 ment programs, to States and to STEM education  
21 practitioners, including to teachers and administra-  
22 tors in schools that meet the criteria described in  
23 subsection (c)(1)(A) and (B) of section 3175 of the  
24 Department of Energy Science Education Enhance-  
25 ment Act (42 U.S.C. 7381j(c)(1)(A) and (B)).

1 **SEC. 103. CYBERINFRASTRUCTURE IMPROVEMENT STUDY.**

2 (a) IN GENERAL.—The President’s Innovation and  
3 Technology Advisory Committee, in coordination with the  
4 Office of Science and Technology Policy and the national  
5 coordination office of the Networking and Information  
6 Technology Research and Development Program, shall  
7 conduct a comprehensive study of the status of programs  
8 supporting innovation-enabling cyberinfrastructure of re-  
9 gional, thematic, or technological importance in States  
10 that historically have received relatively little Federal re-  
11 search and development funding.

12 (b) CONTENTS.—The study shall include—

13 (1) include a review of the previous 5 years of  
14 EPSCoR Research Infrastructure Improvement Pro-  
15 gram applications and awards and shall evaluate—

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

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

23 (2) an analysis of the effectiveness of the Na-  
24 tional Institutes of Health IDeANet initiative in  
25 broadening access to high-performance computa-  
26 tional resources; and



1           (3) recommendations for ensuring accessibility  
2           and vitality of cyberinfrastructure for scientific re-  
3           search and education.

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

10 **SEC. 104. INTERAGENCY PUBLIC ACCESS COMMITTEE.**

11           (a) ESTABLISHMENT.—The Director shall establish a  
12           working group under the National Science and Technology  
13           Council with the responsibility to coordinate Federal  
14           science agency research and policies related to the dissemi-  
15           nation and long-term stewardship of the results of unclas-  
16           sified research, including digital data and peer-reviewed  
17           scholarly publications, supported wholly, or in part, by  
18           funding from the Federal science agencies.

19           (b) RESPONSIBILITIES.—The working group shall—

20                   (1) identify the specific objectives and public in-  
21                   terest being addressed by any policies coordinated  
22                   under (a) that are not or cannot be made to meet  
23                   the needs of the private sector;

24                   (2) take into account inherent variability among  
25                   Federal science agencies and scientific disciplines in

1 the nature of research, types of data, and dissemina-  
2 tion models;

3 (3) coordinate the development or designation  
4 of standards for research data, the structure of full  
5 text and metadata, navigation tools, and other appli-  
6 cations to maximize interoperability across Federal  
7 science agencies, across science and engineering dis-  
8 ciplines, and between research data and scholarly  
9 publications, taking into account existing consensus  
10 standards, including international standards;

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

16 (5) work with international science and tech-  
17 nology counterparts to maximize interoperability be-  
18 tween United States based unclassified research  
19 databases and international databases and reposi-  
20 tories;

21 (6) solicit input and recommendations from,  
22 and collaborate with, non-Federal stakeholders, in-  
23 cluding the public, universities, nonprofit and for-  
24 profit publishers, libraries, federally funded and non-  
25 federally funded research scientists, and other orga-

1 nizations and institutions with a stake in long term  
2 preservation and access to the results of federally  
3 funded research;

4 (7) establish priorities for coordinating the de-  
5 velopment of any Federal science agency policies re-  
6 lated to public access to the results of federally  
7 funded research to maximize the benefits of such  
8 policies with respect to their potential economic or  
9 other impact on, the science and engineering enter-  
10 prise and the stakeholders thereof;

11 (8) take into consideration the distinction be-  
12 tween scholarly publications and digital data;

13 (9) the role that scientific publishers play in the  
14 peer review process in ensuring the integrity of the  
15 record of scientific research, including the invest-  
16 ments and added value that they make; and

17 (10) examine Federal agency practices and pro-  
18 cedures for providing research reports to the agen-  
19 cies charged with locating and preserving unclassi-  
20 fied research.

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

24 (d) APPLICATION WITH EXISTING LAW.—Nothing  
25 defined in section (b) shall be construed to affect existing

1 law with respect to federal science agencies’ policies re-  
2 lated to public access.

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

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

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

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

14 (4) the status of any Federal science agency  
15 policies related to public access to the results of fed-  
16 erally funded research; and

17 (5) how any policies developed or being devel-  
18 oped by Federal science agencies, as described in  
19 subsection (a), incorporate input from the non-Fed-  
20 eral stakeholders described in subsection (b)(6).

21 (f) FEDERAL SCIENCE AGENCY DEFINED.—For the  
22 purposes of this section, the term “Federal science agen-  
23 cy” means any Federal agency with an annual extramural  
24 research expenditure of over \$100,000,000.

1 **SEC. 105. FEDERAL SCIENTIFIC COLLECTIONS.**

2 (a) **MANAGEMENT OF SCIENTIFIC COLLECTIONS.**—

3 The Office of Science and Technology Policy shall develop  
4 policies for the management and use of Federal scientific  
5 collections to improve the quality, organization, access, in-  
6 cluding online access, and long-term preservation of such  
7 collections for the benefit of the scientific enterprise. . In  
8 developing those policies the Office of Science and Tech-  
9 nology Policy shall consult, as appropriate, with—

10 (1) Federal agencies with such collections; and

11 (2) representatives of other organizations, insti-  
12 tutions, and other entities not a part of the Federal  
13 Government that have a stake in the preservation,  
14 maintenance, and accessibility of such collections, in-  
15 cluding State and local government agencies, institu-  
16 tions of higher education, museums, and other enti-  
17 ties engaged in the acquisition, holding, manage-  
18 ment, or use of scientific collections.

19 (b) **CLEARINGHOUSE.**—The Office of Science and  
20 Technology Policy, in consultation with relevant Federal  
21 agencies, shall ensure the development of an online clear-  
22 inghouse for information on the contents of and access  
23 to Federal scientific collections.

24 (c) **DISPOSAL OF COLLECTIONS.**—The policies devel-  
25 oped under subsection (a) shall—

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

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

5           (B) consult with researchers who have  
6 used the collection, and other potentially inter-  
7 ested parties, concerning—

8           (i) the collection’s value for research  
9 purposes; and

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

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

16           (d) COST PROJECTIONS.—The Office of Science and  
17 Technology Policy, in consultation with relevant Federal  
18 agencies, shall develop a common set of methodologies to  
19 be used by Federal agencies for the assessment and pro-  
20 jection of costs associated with the management and pres-  
21 ervation of their scientific collections.

22           (e) SCIENTIFIC COLLECTION DEFINED.—In this sec-  
23 tion, the term “scientific collection” means a set of phys-  
24 ical specimens, living or inanimate, created for the purpose  
25 of supporting science and serving as a long-term research

1 asset, rather than for their market value as collectibles  
2 or their historical, artistic, or cultural significance, and,  
3 as appropriate and feasible, the associated specimen data  
4 and materials.

5 **SEC. 106. PRIZE COMPETITIONS.**

6 The Stevenson-Wydler Technology Innovation Act of  
7 1980 (15 U.S.C. 3701 et seq.) is amended by adding at  
8 the end the following:

9 **“SEC. 24. PRIZE COMPETITIONS.**

10 “(a) **DEFINITIONS.**—In this section:

11 “(1) **AGENCY.**—The term ‘agency’ means a  
12 Federal agency.

13 “(2) **DIRECTOR.**—The term ‘Director’ means  
14 the Director of the Office of Science and Technology  
15 Policy.

16 “(3) **FEDERAL AGENCY.**—The term ‘Federal  
17 agency’ has the meaning given under section 4, ex-  
18 cept that term shall not include any agency of the  
19 legislative branch of the Federal Government.

20 “(4) **HEAD OF AN AGENCY.**—The term ‘head of  
21 an agency’ means the head of a Federal agency.

22 “(b) **IN GENERAL.**—Each head of an agency, or the  
23 heads of multiple agencies in cooperation, may carry out  
24 a program to award prizes competitively to stimulate inno-

1 vation that has the potential to advance the mission of  
2 the respective agency.

3 “(c) PRIZES.—For purposes of this section, a prize  
4 may be one or more of the following:

5 “(1) A point solution prize that rewards and  
6 spurs the development of solutions for a particular,  
7 well-defined problem.

8 “(2) An exposition prize that helps identify and  
9 promote a broad range of ideas and practices that  
10 may not otherwise attract attention, facilitating fur-  
11 ther development of the idea or practice by third  
12 parties.

13 “(3) Participation prizes that create value dur-  
14 ing and after the competition by encouraging con-  
15 testants to change their behavior or develop new  
16 skills that may have beneficial effects during and  
17 after the competition.

18 “(4) Such other types of prizes as each head of  
19 an agency considers appropriate to stimulate innova-  
20 tion that has the potential to advance the mission of  
21 the respective agency.

22 “(d) TOPICS.—In selecting topics for prize competi-  
23 tions, the head of an agency shall consult widely both with-  
24 in and outside the Federal Government, and may empanel  
25 advisory committees.



1       “(e) ADVERTISING.—The head of an agency shall  
2 widely advertise each prize competition to encourage broad  
3 participation.

4       “(f) REQUIREMENTS AND REGISTRATION.—For each  
5 prize competition, the head of an agency shall publish a  
6 notice in the Federal Register announcing—

7           “(1) the subject of the competition;

8           “(2) the rules for being eligible to participate in  
9 the competition;

10          “(3) the process for participants to register for  
11 the competition;

12          “(4) the amount of the prize; and

13          “(5) the basis on which a winner will be se-  
14 lected.

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

17           “(1) shall have registered to participate in the  
18 competition under any rules promulgated by the  
19 head of an agency under subsection (f);

20           “(2) shall have complied with all the require-  
21 ments under this section;

22           “(3) in the case of a private entity, shall be in-  
23 corporated in and maintain a primary place of busi-  
24 ness in the United States, and in the case of an in-  
25 dividual, whether participating singly or in a group,

1 shall be a citizen or permanent resident of the  
2 United States; and

3 “(4) may not be a Federal entity or Federal  
4 employee acting within the scope of their employ-  
5 ment.

6 “(h) CONSULTATION WITH FEDERAL EMPLOYEES.—  
7 An individual or entity shall not be deemed ineligible  
8 under subsection (g) because the individual or entity used  
9 Federal facilities or consulted with Federal employees dur-  
10 ing a competition if the facilities and employees are made  
11 available to all individuals and entities participating in the  
12 competition on an equitable basis.

13 “(i) LIABILITY.—

14 “(1) IN GENERAL.—

15 “(A) DEFINITION.—In this paragraph, the  
16 term ‘related entity’ means a contractor or sub-  
17 contractor at any tier, and a supplier, user, cus-  
18 tomer, cooperating party, grantee, investigator,  
19 or detailee.

20 “(B) LIABILITY.—Registered participants  
21 shall be required to agree to assume any and all  
22 risks and waive claims against the Federal Gov-  
23 ernment and its related entities, except in the  
24 case of willful misconduct, for any injury,  
25 death, damage, or loss of property, revenue, or

1 profits, whether direct, indirect, or consequen-  
2 tial, arising from their participation in a com-  
3 petition, whether the injury, death, damage, or  
4 loss arises through negligence or otherwise.

5 “(2) INSURANCE.—Participants shall be re-  
6 quired to obtain liability insurance or demonstrate  
7 financial responsibility, in amounts determined by  
8 the head of an agency, for claims by—

9 “(A) a third party for death, bodily injury,  
10 or property damage, or loss resulting from an  
11 activity carried out in connection with participa-  
12 tion in a competition, with the Federal Govern-  
13 ment named as an additional insured under the  
14 registered participant’s insurance policy and  
15 registered participants agreeing to indemnify  
16 the Federal Government against third party  
17 claims for damages arising from or related to  
18 competition activities; and

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

22 “(3) EXCEPTION.—The head of an agency may  
23 not require a participant to waive claims against the  
24 administering entity arising out of the unauthorized  
25 use or disclosure by the agency of the intellectual

1 property, trade secrets, or confidential business in-  
2 formation of the participant.

3 “(j) INTELLECTUAL PROPERTY.—

4 “(1) PROHIBITION ON THE GOVERNMENT AC-  
5 QUIRING INTELLECTUAL PROPERTY RIGHTS.—The  
6 Federal Government may not gain an interest in in-  
7 tellectual property developed by a participant in a  
8 competition without the written consent of the par-  
9 ticipant.

10 “(2) LICENSES.—The Federal Government may  
11 negotiate a license for the use of intellectual prop-  
12 erty developed by a participant for a competition.

13 “(k) JUDGES.—

14 “(1) IN GENERAL.—For each competition, the  
15 head of an agency, either directly or through an  
16 agreement under subsection (l), shall appoint one or  
17 more qualified judges to select the winner or winners  
18 of the prize competition on the basis described under  
19 subsection (f). Judges for each competition may in-  
20 clude individuals from outside the agency, including  
21 from the private sector.

22 “(2) RESTRICTIONS.—A judge may not—

23 “(A) have personal or financial interests  
24 in, or be an employee, officer, director, or agent

1 of any entity that is a registered participant in  
2 a competition; or

3 “(B) have a familial or financial relation-  
4 ship with an individual who is a registered par-  
5 ticipant.

6 “(3) GUIDELINES.—The heads of agencies who  
7 carry out competitions under this section shall de-  
8 velop guidelines to ensure that the judges appointed  
9 for such competitions are fairly balanced and oper-  
10 ate in a transparent manner.

11 “(4) EXEMPTION FROM FACa.—The Federal  
12 Advisory Committee Act (5 U.S.C. App.) shall not  
13 apply to any committee, board, commission, panel,  
14 task force, or similar entity, created solely for the  
15 purpose of judging prize competitions under this sec-  
16 tion.

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

21 “(m) FUNDING.—

22 “(1) IN GENERAL.—Support for a prize com-  
23 petition under this section, including financial sup-  
24 port for the design and administration of a prize or  
25 funds for a monetary prize purse, may consist of

1 Federal appropriated funds and funds provided by  
2 the private sector for such cash prizes. The head of  
3 an agency may accept funds from other Federal  
4 agencies to support such competitions. The head of  
5 an agency may not give any special consideration to  
6 any private sector entity in return for a donation.

7 “(2) AVAILABILITY OF FUNDS.—Notwith-  
8 standing any other provision of law, funds appro-  
9 priated for prize awards under this section shall re-  
10 main available until expended, and may be trans-  
11 ferred, reprogrammed, or expended for other pur-  
12 poses only after the expiration of 10 fiscal years  
13 after the fiscal year for which the funds were origi-  
14 nally appropriated. No provision in this section per-  
15 mits obligation or payment of funds in violation of  
16 section 1341 of title 31, United States Code.

17 “(3) AMOUNT OF PRIZE.—

18 “(A) ANNOUNCEMENT.—No prize may be  
19 announced under subsection (f) until all the  
20 funds needed to pay out the announced amount  
21 of the prize have been appropriated or com-  
22 mitted in writing by a private source.

23 “(B) INCREASE IN AMOUNT.—The head of  
24 an agency may increase the amount of a prize

1 after an initial announcement is made under  
2 subsection (f) only if—

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

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

10 “(4) LIMITATION ON AMOUNT.—

11 “(A) NOTICE TO CONGRESS.—No prize  
12 competition under this section may offer a prize  
13 in an amount greater than \$50,000,000 unless  
14 30 days have elapsed after written notice has  
15 been transmitted to the Committee on Com-  
16 merce, Science, and Transportation of the Sen-  
17 ate and the Committee on Science and Tech-  
18 nology of the House of Representatives.

19 “(B) APPROVAL OF HEAD OF AGENCY.—  
20 No prize competition under this section may re-  
21 sult in the award of more than \$1,000,000 in  
22 cash prizes without the approval of the head of  
23 an agency.

24 “(n) GENERAL SERVICE ADMINISTRATION ASSIST-  
25 ANCE.—Not later than 180 days after the date of the en-

1 actment of the America COMPETES Reauthorization Act  
2 of 2010, the General Services Administration shall provide  
3 government wide services to share best practices and assist  
4 agencies in developing guidelines for issuing prize competi-  
5 tions. The General Services Administration shall develop  
6 a contract vehicle to provide agencies access to relevant  
7 products and services, including technical assistance in  
8 structuring and conducting prize competitions to take  
9 maximum benefit of the marketplace as they identify and  
10 pursue prize competitions to further the policy objectives  
11 of the Federal Government.

12 “(o) COMPLIANCE WITH EXISTING LAW.—

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

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

22 “(3) REPEAL OF SPACE ACT LIMITATION.—Sec-  
23 tion 314(a) of the National Aeronautics and Space  
24 Act of 1958 (42 U.S.C. 2459f–1 is amended by  
25 striking “The Administration may carry out a pro-



1 gram to award prizes only in conformity with this  
2 section.”.

3 “(p) ANNUAL REPORT.—

4 “(1) IN GENERAL.—Not later than March 1 of  
5 each year, the Director shall submit to the Com-  
6 mittee on Commerce, Science, and Transportation of  
7 the Senate and the Committee on Science and Tech-  
8 nology of the House of Representatives a report on  
9 the activities carried out during the preceding fiscal  
10 year under the authority in subsection (b).

11 “(2) INFORMATION INCLUDED.—The report for  
12 a fiscal year under this subsection shall include, for  
13 each prize competition under subsection (b), the fol-  
14 lowing:

15 “(A) PROPOSED GOALS.—A description of  
16 the proposed goals of each prize competition.

17 “(B) PREFERABLE METHOD.—An analysis  
18 of why the utilization of the authority in sub-  
19 section (b) was the preferable method of achiev-  
20 ing the goals described in subparagraph (A) as  
21 opposed to other authorities available to the  
22 agency, such as contracts, grants, and coopera-  
23 tive agreements.

24 “(C) AMOUNT OF CASH PRIZES.—The total  
25 amount of cash prizes awarded for each prize

1 competition, including a description of amount  
2 of private funds contributed to the program, the  
3 sources of such funds, and the manner in which  
4 the amounts of cash prizes awarded and  
5 claimed were allocated among the accounts of  
6 the agency for recording as obligations and ex-  
7 penditures.

8 “(D) SOLICITATIONS AND EVALUATION OF  
9 SUBMISSIONS.—The methods used for the solici-  
10 tation and evaluation of submissions under  
11 each prize competition, together with an assess-  
12 ment of the effectiveness of such methods and  
13 lessons learned for future prize competitions.

14 “(E) RESOURCES.—A description of the  
15 resources, including personnel and funding,  
16 used in the execution of each prize competition  
17 together with a detailed description of the ac-  
18 tivities for which such resources were used and  
19 an accounting of how funding for execution was  
20 allocated among the accounts of the agency for  
21 recording as obligations and expenditures.

22 “(F) RESULTS.—A description of how each  
23 prize competition advanced the mission of the  
24 agency concerned.”

1 **TITLE II—NATIONAL AERO-**  
2 **NAUTICS AND SPACE ADMIN-**  
3 **ISTRATION.**

4 **SEC. 201. NASA'S CONTRIBUTION TO INNOVATION AND**  
5 **COMPETITIVENESS.**

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

13 **SEC. 202. NASA'S CONTRIBUTION TO EDUCATION.**

14 (a) SENSE OF CONGRESS.—It is the sense of Con-  
15 gress that NASA is uniquely positioned to interest stu-  
16 dents in science, technology, engineering, and mathe-  
17 matics, not only by the example it sets, but through its  
18 education programs.

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

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

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

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

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

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

8                   (B) are aligned with national science edu-  
9                   cation standards; and

10                   (C) promote the adoption and implementa-  
11                   tion of high-quality education practices that  
12                   build toward college and career-readiness; and

13           (5) to create and support opportunities for en-  
14           hanced and ongoing professional development for  
15           teachers using best practices that improve the  
16           STEM field content and knowledge of the teachers.

17 **SEC. 203. INTERNATIONAL SPACE STATION'S CONTRIBU-**  
18 **TION TO NATIONAL COMPETITIVENESS EN-**  
19 **HANCEMENT.**

20           (a) SENSE OF CONGRESS.—It is the sense of the Con-  
21           gress that the International Space Station represents a  
22           valuable and unique national asset which can be utilized  
23           to increase educational opportunities and scientific and  
24           technological innovation which will enhance the Nation's  
25           economic security and competitiveness in the global tech-

1 nology fields of endeavor. If the period for active utiliza-  
2 tion of the International Space Station is extended to at  
3 least the year 2020, the potential for such opportunities  
4 and innovation would be increased. Efforts should be  
5 made to fully realize that potential.

6 (b) EVALUATION AND ASSESSMENT OF NASA'S  
7 INTERAGENCY CONTRIBUTION.—Pursuant to the author-  
8 ity provided in title II of the America COMPETES Act  
9 (Public Law 110–69), the Administrator shall evaluate  
10 and, where possible, expand efforts to maximize NASA's  
11 contribution to interagency efforts to enhance science,  
12 technology, engineering, and mathematics education capa-  
13 bilities, and to enhance the Nation's technological excel-  
14 lence and global competitiveness. The Administrator shall  
15 identify these enhancements in the annual reports re-  
16 quired by section 2001(e) of that Act (42 U.S.C.  
17 16611a(e)).

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

1           (1) a description of current and potential activi-  
2 ties associated with utilization of the International  
3 Space Station which are supportive of the goals of  
4 educational excellence and innovation and competi-  
5 tive enhancement established or reaffirmed by this  
6 Act, including a summary of the goals supported,  
7 the number of individuals or organizations partici-  
8 pating in or benefiting from such activities, and a  
9 summary of how such activities might be expanded  
10 or improved upon;

11           (2) a description of government and private  
12 partnerships which are, or may be, established to ef-  
13 fectively utilize the capabilities represented by the  
14 International Space Station to enhance United  
15 States competitiveness, innovation and science, tech-  
16 nology, engineering, and mathematics education; and

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

24 **SEC. 204. DEFINITIONS.**

25           In this title:

1           (1) ADMINISTRATOR.—The term “Adminis-  
2           trator” means the Administrator of NASA.

3           (2) NASA.—The term “NASA” means the Na-  
4           tional Aeronautics and Space Administration.

5                           **TITLE III—OCEAN AND**  
6                           **ATMOSPHERIC PROGRAMS**

7   **SEC. 301. OCEANIC AND ATMOSPHERIC RESEARCH AND DE-**  
8                           **VELOPMENT PROGRAM.**

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

11           (1) by inserting “(a) IN GENERAL.—” before  
12           “The Administrator”; and

13           (2) by adding at the end the following:

14           “(b) OCEAN AND ATMOSPHERIC RESEARCH AND DE-  
15   VELOPMENT PROGRAM.—The Administrator shall imple-  
16   ment programs and activities—

17           “(1) to identify emerging and innovative re-  
18           search and development priorities to enhance U.S.  
19           competitiveness, support development of new eco-  
20           nomic opportunities based on NOAA research, obser-  
21           vations, monitoring modeling, and predictions that  
22           sustain ecosystem services;

23           “(2) to promote United States leadership in  
24           ocean and atmospheric science and competitiveness  
25           in the applied uses of such knowledge, including for

1 the development and expansion of economic opportu-  
2 nities; and

3 “(3) to advance ocean, coastal, Great Lakes,  
4 and atmospheric research and development, includ-  
5 ing potentially transformational research, in collabo-  
6 ration with other relevant Federal agencies, aca-  
7 demic institutions, the private sector, and non-  
8 governmental programs, consistent with the Admin-  
9 istration’s mission to understand, observe, and  
10 model the Earth’s atmosphere and biosphere, includ-  
11 ing the oceans, in an integrated manner.

12 “(c) REPORT.—No later than 12 months after the  
13 date of enactment of the America COMPETES Reauthor-  
14 ization Act of 2010, the Administrator, in consultation  
15 with the National Science Foundation or other such agen-  
16 cies with mature transformational research portfolios,  
17 shall develop and submit a report to describe NOAA’s  
18 strategy for enhancing transformational research in its re-  
19 search and development portfolio to increase United  
20 States competitiveness in oceanic and atmospheric science  
21 and technology. The report shall—

22 “(1) define ‘transformational research’;

23 “(2) identify emerging and innovative areas of  
24 research and development where transformational  
25 research has the potential to make significant and



1 revolutionary advancements in both understanding  
2 and U.S. science leadership;

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

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

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

13 “(d) PARTNERSHIPS AND AGREEMENTS.—

14 “(1) IN GENERAL.—The Administrator may  
15 execute such contracts, leases, grants, cooperative  
16 agreements, or other agreements and transactions  
17 with any agency or instrumentality of the United  
18 States, any State, local, tribal, territorial or foreign  
19 government, or with any person, corporation, firm,  
20 partnership, educational institution, nonprofit orga-  
21 nization, or international organization as may be  
22 necessary to carry out this title.

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

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

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

10           “(C) acquire (by purchase, lease, or other-  
11 wise), lease, sell, and dispose of or convey serv-  
12 ices, money, securities, or property (whether  
13 real, personal, intellectual, or of any other kind)  
14 or an interest therein;

15           “(D) construct, improve, repair, operate,  
16 maintain, outgrant, and dispose of real or per-  
17 sonal property, including buildings, facilities,  
18 and land; and

19           “(E) waive capital lease scoring require-  
20 ments for any lease of space on commercial an-  
21 tennas to support weather radio equipment, air  
22 sampling, or measuring equipment.

23           “(3) CERTAIN LEASED EQUIPMENT.—Notwith-  
24 standing any other provision of law, rule, or regula-  
25 tion, leases of antenna or equipment on towers or

1 other structures shall be considered operating leases  
2 for the purpose of capital lease scoring.

3 “(4) **AUTHORITY TO RECEIVE FUNDS.**—The  
4 Administrator may accept, retain, and use funds re-  
5 ceived from any party pursuant to an agreement en-  
6 tered into under this subsection for activities fur-  
7 thering the purposes of this title.”.

8 **SEC. 302. OCEAN AND ATMOSPHERIC SCIENCE EDUCATION**  
9 **PROGRAMS.**

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

12 (1) by striking “the agency.” in subsection (a)  
13 and inserting “agency, with consideration given to  
14 the goal of promoting the participation of individuals  
15 from underrepresented groups in STEM fields and  
16 in promoting the acquisition and retention of highly  
17 qualified and motivated young scientists to com-  
18 plement and supplement workforce needs.”;

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

21 (3) by inserting after subsection (a) the fol-  
22 lowing:

23 “(b) **EDUCATIONAL PROGRAM GOALS.**—The edu-  
24 cation programs developed by NOAA shall, to the extent  
25 applicable—

1           “(1) carry out and support research based pro-  
2           grams and activities designed to increase student in-  
3           terest and participation in STEM;

4           “(2) improve public literacy in STEM;

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

7           “(4) provide curriculum support materials and  
8           other resources that—

9                   “(A) are designed to be integrated with  
10                  comprehensive STEM education;

11                   “(B) are aligned with national science edu-  
12                  cation standards; and

13                   “(C) produce the adoption and implemen-  
14                  tation of high-quality education practices that  
15                  build toward college and career-readiness; and

16           “(5) create and support opportunities for en-  
17           hanced and ongoing professional development for  
18           teachers using best practices that improves the  
19           STEM content and knowledge of the teachers.”;

20           (4) by striking “develop” in subsection (c), as  
21           redesignated, and inserting “maintain”; and

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

23           “(e) STEM FIELDS DEFINED.—In this section, the  
24           term ‘STEM fields’ means the academic and professional

1 disciplines of science, technology, engineering, and mathe-  
2 matics.”.

3 **SEC. 303. WORKFORCE STUDY.**

4 (a) IN GENERAL.—The Secretary of Commerce, in  
5 cooperation with the Secretary of Education, shall request  
6 the National Academy of Sciences to conduct a study on  
7 the scientific workforce in the areas of oceanic and atmos-  
8 pheric research and development. The study shall inves-  
9 tigate—

10 (1) whether there is a shortage in the number  
11 of individuals with advanced degrees in oceanic and  
12 atmospheric sciences who have the ability to conduct  
13 high quality scientific research in physical and chem-  
14 ical oceanography, meteorology, and atmospheric  
15 modeling, and related fields, for government, non-  
16 profit, and private sector entities;

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

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

23 (4) what institutions of higher education, the  
24 private sector, and the Congress could do to increase

1 the number of individuals with such post bacca-  
2 laureate degrees;

3 (5) the impact of an aging Federal scientist  
4 workforce on the ability of Federal agencies to con-  
5 duct high quality scientific research; and

6 (6) what actions the Federal government can  
7 take to assist the transition of highly qualified sci-  
8 entists into Federal career scientist positions and en-  
9 sure that the experiences of retiring Federal sci-  
10 entists are adequately documented and transferred  
11 prior to retirement from Federal service.

12 (b) COORDINATION.—The Secretary and the Sec-  
13 retary of Education shall consult with the heads of other  
14 Federal agencies and departments with oceanic and at-  
15 mospheric expertise or authority in preparing the speci-  
16 fications for the study.

17 (c) REPORT.—No later than 18 months after the date  
18 of enactment of this Act, the Secretary and the Secretary  
19 of Education shall transmit a joint report to each com-  
20 mittee of Congress with jurisdiction over the programs de-  
21 scribed in 4002(b) of the America COMPETES Act (33  
22 U.S.C. 893a(b)), as amended by section 302 of this Act,  
23 detailing the findings and recommendations of the study  
24 and setting forth a prioritized plan to implement the rec-  
25 ommendations.

1 (d) PROGRAM AND PLAN.—The Administrator shall  
2 evaluate the National Academy of Sciences study and de-  
3 velop a workforce program and plan to institutionalize the  
4 Administration’s Federal science career pathways and ad-  
5 dress aging workforce issues. The program and plan shall  
6 be developed in consultation with the Administration’s co-  
7 operative institutes and other academic partners to iden-  
8 tify and implement programs and mechanisms to ensure  
9 that—

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

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

17 **TITLE IV—NATIONAL INSTITUTE**  
18 **OF STANDARDS AND TECH-**  
19 **NOLOGY**

20 **SEC. 401. SHORT TITLE.**

21 This title may be cited as the “National Institute of  
22 Standards and Technology Authorization Act of 2010”.

23 **SEC. 402. AUTHORIZATION OF APPROPRIATIONS.**

24 (a) FISCAL YEAR 2011.—

1           (1) IN GENERAL.—There are authorized to be  
2 appropriated to the Secretary of Commerce  
3 \$1,000,500,000 for the National Institute of Stand-  
4 ards and Technology for fiscal year 2011.

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

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

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

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

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

21           (ii) \$145,000,000 shall be authorized  
22 for the Manufacturing Extension Partner-  
23 ship program under sections 25 and 26 of  
24 such Act (15 U.S.C. 278k and 278l), of  
25 which not more than \$5,000,000 shall be



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

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

8 (b) FISCAL YEAR 2012.—

9 (1) IN GENERAL.—There are authorized to be  
10 appropriated to the Secretary of Commerce  
11 \$1,024,100,000 for the National Institute of Stand-  
12 ards and Technology for fiscal year 2012.

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

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

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

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

24 (i) \$105,000,000 shall be authorized  
25 for the Technology Innovation Program

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

4 (ii) \$155,000,000 shall be authorized  
5 for the Manufacturing Extension Partner-  
6 ship program under sections 25 and 26 of  
7 such Act (15 U.S.C. 278k and 278l), of  
8 which not more than \$5,000,000 shall be  
9 for the competitive grant program under  
10 section 25(f) of such Act; and

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

16 (c) FISCAL YEAR 2013.—

17 (1) IN GENERAL.—There are authorized to be  
18 appropriated to the Secretary of Commerce  
19 \$1,128,409,000 for the National Institute of Stand-  
20 ards and Technology for fiscal year 2013.

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

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

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

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

7           (i) \$115,000,000 shall be authorized  
8 for the Technology Innovation Program  
9 under section 28 of the National Institute  
10 of Standards and Technology Act (15  
11 U.S.C. 278n);

12           (ii) \$165,000,000 shall be authorized  
13 for the Manufacturing Extension Partner-  
14 ship program under sections 25 and 26 of  
15 such Act (15 U.S.C. 278k and 278l), of  
16 which not more than \$5,000,000 shall be  
17 for the competitive grant program under  
18 section 25(f) of such Act; and

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

1 **SEC. 403. UNDER SECRETARY OF COMMERCE FOR STAND-**  
2 **ARDS AND TECHNOLOGY.**

3 (a) ESTABLISHMENT.—Section 4 of the National In-  
4 stitute of Standards and Technology Act is amended to  
5 read as follows:

6 **“SEC. 4. UNDER SECRETARY OF COMMERCE FOR STAND-**  
7 **ARDS AND TECHNOLOGY.**

8 “(a) ESTABLISHMENT.—There shall be in the De-  
9 partment of Commerce an Under Secretary of Commerce  
10 for Standards and Technology (in this section referred to  
11 as the ‘Under Secretary’).

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

15 “(c) COMPENSATION.—The Under Secretary shall be  
16 compensated at the rate in effect for level III of the Exec-  
17 utive Schedule under section 5314 of title 5, United States  
18 Code.

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

23 “(e) APPLICABILITY.—The individual serving as the  
24 Director of the Institute on the date of enactment of the  
25 National Institute of Standards and Technology Author-  
26 ization Act of 2010 shall also serve as the Under Secretary

1 until such time as a successor is appointed under sub-  
2 section (b).”.

3 (b) CONFORMING AMENDMENTS.—

4 (1) TITLE 5, UNITED STATES CODE.—

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

9 “Under Secretary of Commerce for Standards  
10 and Technology, who also serves as Director of the  
11 National Institute of Standards and Technology.”.

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

16 (2) NATIONAL INSTITUTE OF STANDARDS AND  
17 TECHNOLOGY ACT.—Section 5 of the National Insti-  
18 tute of Standards and Technology Act (15 U.S.C.  
19 274) is amended by striking the first, fifth, and  
20 sixth sentences.

21 **SEC. 404. MANUFACTURING EXTENSION PARTNERSHIP.**

22 (a) COMMUNITY COLLEGE SUPPORT.—Section 25(a)  
23 of the National Institute of Standards and Technology Act  
24 (15 U.S.C. 278k(a)) is amended—

1           (1) by striking “and” after the semicolon in  
2 paragraph (4);

3           (2) by striking “Institute.” in paragraph (5)  
4 and inserting “Institute; and”; and

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

6           “(6) providing to community colleges informa-  
7 tion about the job skills needed in small- and me-  
8 dium-sized manufacturing businesses in the regions  
9 they serve.”.

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

13          “(g) INNOVATIVE SERVICES INITIATIVE.—

14           “(1) ESTABLISHMENT.—The Director may es-  
15 tablish, within the Centers program under this sec-  
16 tion, an innovative services initiative to assist small-  
17 and medium-sized manufacturers in—

18           “(A) reducing their energy usage and envi-  
19 ronmental waste to improve profitability; and

20           “(B) accelerating the domestic commer-  
21 cialization of new product technologies, includ-  
22 ing components for renewable energy systems.

23          “(2) MARKET DEMAND.—The Director may not  
24 undertake any activity to accelerate the domestic  
25 commercialization of a new product technology

1 under this subsection unless an analysis of market  
2 demand for the new product technology has been  
3 conducted.”.

4 (c) REPORTS.—Section 25 of such Act (15 U.S.C.  
5 278k), as amended by subsection (b), is further amended  
6 by adding at the end the following:

7 “(h) REPORTS.—

8 “(1) IN GENERAL.—In submitting the 3-year  
9 programmatic planning document and annual up-  
10 dates under section 23, the Director shall include an  
11 assessment of the Director’s governance of the pro-  
12 gram established under this section.

13 “(2) CRITERIA.—In conducting the assessment,  
14 the Director shall use the criteria established pursu-  
15 ant to the Malcolm Baldrige National Quality Award  
16 under section 17(d)(1)(C) of the Stevenson-Wydler  
17 Technology Innovation Act of 1980 (15 U.S.C.  
18 3711a(d)(1)(C)).”.

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

23 “(7) Notwithstanding paragraphs (1), (3), and  
24 (5), for fiscal year 2011 through fiscal year 2013,  
25 the Secretary may not provide to a Center more

1 than 50 percent of the costs incurred by that Center  
 2 and may not require that a Center’s cost share ex-  
 3 ceed 50 percent.

4 “(8) Not later than 2 years after the date of  
 5 enactment of the National Institute of Standards  
 6 and Technology Authorization Act of 2010, the Sec-  
 7 retary shall submit to Congress a report on the cost  
 8 share requirements under the program. The report  
 9 shall—

10 “(A) discuss various cost share structures,  
 11 including the cost share structure in place prior  
 12 to such date of enactment and the cost share  
 13 structure in place under paragraph (7), and the  
 14 effect of such cost share structures on indi-  
 15 vidual Centers and the overall program; and

16 “(B) include a recommendation for how  
 17 best to structure the cost share requirement  
 18 after fiscal year 2013 to provide for the long-  
 19 term sustainability of the program.”.

20 (e) ADVISORY BOARD.—Section 25(e)(4) of such Act  
 21 (15 U.S.C. 278k(e)(4)) is amended to read as follows:

22 “(4) FEDERAL ADVISORY COMMITTEE ACT AP-  
 23 PPLICABILITY.—

24 “(A) IN GENERAL.—In discharging its du-  
 25 ties under this subsection, the MEP Advisory



1 Board shall function solely in an advisory ca-  
2 pacity, in accordance with the Federal Advisory  
3 Committee Act.

4 “(B) EXCEPTION.—Section 14 of the Fed-  
5 eral Advisory Committee Act shall not apply to  
6 the MEP Advisory Board.”.

7 (f) DESIGNATION OF PROGRAM.—

8 (1) IN GENERAL.—Section 25 of the National  
9 Institute of Standards and Technology Act (15  
10 U.S.C. 278k), as amended by subsection (c), is fur-  
11 ther amended by adding at the end the following:

12 “(i) DESIGNATION.—

13 “(1) HOLLINGS MANUFACTURING EXTENSION  
14 PARTNERSHIP.—The program under this section  
15 shall be known as the ‘Hollings Manufacturing Ex-  
16 tension Partnership’.

17 “(2) HOLLINGS MANUFACTURING EXTENSION  
18 CENTERS.—The Regional Centers for the Transfer  
19 of Manufacturing Technology created and supported  
20 under subsection (a) shall be known as the ‘Hollings  
21 Manufacturing Extension Centers’ (in this Act re-  
22 ferred to as the ‘Centers’).”.

23 (2) CONFORMING AMENDMENT TO CONSOLI-  
24 DATED APPROPRIATIONS ACT, 2005.—Division B of  
25 title II of the Consolidated Appropriations Act, 2005

1 (Public Law 108–447; 118 Stat. 2879; 15 U.S.C.  
2 278k note) is amended under the heading “INDUS-  
3 TRIAL TECHNOLOGY SERVICES” by striking “2007:  
4 *Provided further, That*” and all that follows through  
5 “Extension Centers.” and inserting “2007.”.

6 (3) TECHNICAL AMENDMENTS.—

7 (A) Section 25(a) of the National Institute  
8 of Standards and Technology Act (15 U.S.C.  
9 278k(a)) is amended in the matter preceding  
10 paragraph (1) by striking “Regional Centers for  
11 the Transfer of Manufacturing Technology”  
12 and inserting “regional centers for the transfer  
13 of manufacturing technology”.

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

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

23 (h) EVALUATION OF OBSTACLES UNIQUE TO SMALL  
24 MANUFACTURERS.—Section 25 of such Act (15 U.S.C.

1 278k), as amended by subsection (g), is further amended  
2 by adding at the end the following:

3 “(k) EVALUATION OF OBSTACLES UNIQUE TO SMALL  
4 MANUFACTURERS.—The Director shall—

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

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

10 “(3) facilitate improved communication between  
11 the Centers to assist such manufacturers in imple-  
12 menting appropriate, targeted solutions to such ob-  
13 stacles.”.

14 (i) NIST ACT AMENDMENT.—Section 25(f)(3) of the  
15 National Institute of Standards and Technology Act (15  
16 U.S.C. 278k(f)(3)) is amended by striking “Director of  
17 the Centers program,” and inserting “Director of the Hol-  
18 lings MEP program,”.

19 **SEC. 405. EMERGENCY COMMUNICATION AND TRACKING**  
20 **TECHNOLOGIES RESEARCH INITIATIVE.**

21 (a) ESTABLISHMENT.—The Director shall establish a  
22 research initiative to support the development of emer-  
23 gency communication and tracking technologies for use in  
24 locating trapped individuals in confined spaces, such as  
25 underground mines, and other shielded environments,

1 such as high-rise buildings or collapsed structures, where  
2 conventional radio communication is limited.

3 (b) ACTIVITIES.—In order to carry out this section,  
4 the Director shall work with the private sector and appro-  
5 priate Federal agencies to—

6 (1) perform a needs assessment to identify and  
7 evaluate the measurement, technical standards, and  
8 conformity assessment needs required to improve the  
9 operation and reliability of such emergency commu-  
10 nication and tracking technologies;

11 (2) support the development of technical stand-  
12 ards and conformance architecture to improve the  
13 operation and reliability of such emergency commu-  
14 nication and tracking technologies; and

15 (3) incorporate and build upon existing reports  
16 and studies on improving emergency communica-  
17 tions.

18 (c) REPORT.—Not later than 18 months after the  
19 date of enactment of this Act, the Director shall submit  
20 to Congress and make publicly available a report describ-  
21 ing the assessment performed under subsection (b)(1) and  
22 making recommendations about research priorities to ad-  
23 dress gaps in the measurement, technical standards, and  
24 conformity assessment needs identified by the assessment.

1 **SEC. 406. BROADENING PARTICIPATION.**

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

6 “(c) UNDERREPRESENTED MINORITIES.—In evalu-  
7 ating applications for fellowships under this section, the  
8 Director shall give consideration to the goal of promoting  
9 the participation of underrepresented minorities in re-  
10 search areas supported by the Institute.”.

11 (b) POSTDOCTORAL FELLOWSHIP PROGRAM.—Sec-  
12 tion 19 of such Act (15 U.S.C. 278g–2) is amended by  
13 adding at the end the following: “In evaluating applica-  
14 tions for fellowships under this section, the Director shall  
15 give consideration to the goal of promoting the participa-  
16 tion of underrepresented minorities in research areas sup-  
17 ported by the Institute.”.

18 (c) TEACHER DEVELOPMENT.—Section 19A(c) of  
19 such Act (15 U.S.C. 278g–2a(c)) is amended by adding  
20 at the end the following: “The Director shall give special  
21 consideration to an application from a teacher from a  
22 high-need school, as defined in section 200 of the Higher  
23 Education Act of 1965 (20 U.S.C. 1021).”.

24 **SEC. 407. NIST FELLOWSHIPS.**

25 (a) POST-DOCTORAL FELLOWSHIP PROGRAM.—Sec-  
26 tion 19 of the National Institute of Standards and Tech-

1 nology Act (15 U.S.C. 278g) is amended by striking “in  
2 conjunction with the National Academy of Sciences,”.

3 (b) RESEARCH FELLOWSHIPS.—Section 18(a) of that  
4 Act (15 U.S.C. 278g(a)) is amended by striking “up to  
5 1.5 percent of the”.

6 (c) COMMERCE, SCIENCE, AND TECHNOLOGY FEL-  
7 LOWSHIP PROGRAM.—Section 5163(d) of the Omnibus  
8 Trade and Competition Act of 1988 (15 U.S.C. 1533) is  
9 repealed.

10 **SEC. 408. GREEN MANUFACTURING AND CONSTRUCTION.**

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

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

15 (2) to advance the development of standards  
16 and the creation of an information infrastructure to  
17 communicate sustainability information about sup-  
18 pliers; and

19 (3) to improve energy performance, service life,  
20 and indoor air quality of new and retrofitted build-  
21 ings through validated measurement data.

22 **SEC. 409. CYBERSECURITY COMPETITION AND CHALLENGE.**

23 (a) IN GENERAL.—The Director of the National In-  
24 stitute of Standards and Technology, directly or through

1 appropriate Federal entities, shall establish cybersecurity  
2 competitions and challenges with cash prizes in order to—

3           (1) attract, identify, evaluate, and recruit tal-  
4           ented individuals for the Federal information tech-  
5           nology workforce; and

6           (2) stimulate innovation in basic and applied  
7           cybersecurity research, technology development, and  
8           prototype demonstration that have the potential for  
9           application to the Federal information technology  
10          activities of the Federal Government.

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

14               (1) High school students.

15               (2) Undergraduate students.

16               (3) Graduate students.

17               (4) Academic and research institutions.

18          (c) TOPICS.—In selecting topics for prize competi-  
19          tions, the Director shall consult widely both within and  
20          outside the Federal Government, and may empanel advi-  
21          sory committees.

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

1 (e) AUTHORIZATION OF APPROPRIATIONS.—There  
2 are authorized to be appropriated to the National Institute  
3 of Standards and Technology to carry out this section  
4 \$15,000,000 for each of fiscal years 2011 through 2013.

5 **SEC. 410. DEFINITIONS.**

6 In this title:

7 (1) DIRECTOR.—The term “Director” means  
8 the Director of the National Institute of Standards  
9 and Technology.

10 (2) FEDERAL AGENCY.—The term “Federal  
11 agency” has the meaning given such term in section  
12 4 of the Stevenson-Wydler Technology Innovation  
13 Act of 1980 (15 U.S.C. 3703).

14 **TITLE V—NATIONAL SCIENCE**  
15 **FOUNDATION**

16 **SEC. 501. SHORT TITLE.**

17 This title may be cited as the “National Science  
18 Foundation Authorization Act of 2010”.

19 **SEC. 502. DEFINITIONS.**

20 In this title:

21 (1) FOUNDATION.—The term “Foundation”  
22 means the National Science Foundation established  
23 under section 2 of the National Science Foundation  
24 Act of 1950 (42 U.S.C. 1861).



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

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

11           (4) UNITED STATES.—The term “United  
12 States” means the several States, the District of Co-  
13 lumbia, the Commonwealth of Puerto Rico, the Vir-  
14 gin Islands, Guam, American Samoa, the Common-  
15 wealth of the Northern Mariana Islands, and any  
16 other territory or possession of the United States.

17 **SEC. 503. AUTHORIZATION OF APPROPRIATIONS.**

18           (a) FISCAL YEAR 2011.—

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

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

24           (A) \$6,614,000,000 shall be made avail-  
25 able to carry research and related activities;

1 (B) \$1,038,000,000 shall be made avail-  
2 able for education and human resources;

3 (C) \$219,100,000 shall be made available  
4 for major research equipment and facilities con-  
5 struction;

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

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

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

12 (b) FISCAL YEAR 2012.—

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

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

18 (A) \$7,270,000,000 shall be made avail-  
19 able to carry research and related activities;

20 (B) \$1,141,000,000 shall be made avail-  
21 able for education and human resources;

22 (C) \$240,800,000 shall be made available  
23 for major research equipment and facilities con-  
24 struction;

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

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

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

7 (c) FISCAL YEAR 2013.—

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

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

13 (A) \$7,967,000,000 shall be made avail-  
14 able to carry research and related activities;

15 (B) \$1,251,000,000 shall be made avail-  
16 able for education and human resources;

17 (C) \$263,900,000 shall be made available  
18 for major research equipment and facilities con-  
19 struction;

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

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

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

1 **SEC. 504. NATIONAL SCIENCE BOARD ADMINISTRATIVE**  
2 **AMENDMENTS.**

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

7 (b) NATIONAL SCIENCE BOARD REPORTS.—Section  
8 4(j)(2) of the National Science Foundation Act of 1950  
9 (42 U.S.C. 1863(j)(2)) is amended by inserting “within  
10 the authority of the Foundation (or otherwise as requested  
11 by the Congress or the President)” after “individual policy  
12 matters”.

13 (c) BOARD ADHERENCE TO SUNSHINE ACT.—Sec-  
14 tion 15(a)(2) of the National Science Foundation Author-  
15 ization Act of 2002 (42 U.S.C. 1862n-5(a)(2)) is amend-  
16 ed—

17 (1) by striking “The Board” and inserting “To  
18 ensure transparency of the Board’s entire decision-  
19 making process, including deliberations on Board  
20 business occurring within its various subdivisions,  
21 the Board”; and

22 (2) by adding at the end the following: “The  
23 preceding requirement will apply to meetings of the  
24 full Board, whenever a quorum is present; and to  
25 meetings of its subdivisions, whenever a quorum of  
26 the subdivision is present.”.

1 **SEC. 505. NATIONAL CENTER FOR SCIENCE AND ENGINEER-**  
2 **ING STATISTICS.**

3 (a) ESTABLISHMENT.—There is established within  
4 the Foundation a National Center for Science and Engi-  
5 neering Statistics that shall serve as a central Federal  
6 clearinghouse for the collection, interpretation, analysis,  
7 and dissemination of objective data on science, engineer-  
8 ing, technology, and research and development.

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

11 (1) collect, acquire, analyze, report, and dis-  
12 seminate statistical data related to the science and  
13 engineering enterprise in the United States and  
14 other nations that is relevant and useful to practi-  
15 tioners, researchers, policymakers, and the public,  
16 including statistical data on—

17 (A) research and development trends;

18 (B) the science and engineering workforce;

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

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

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

1           (3) support the education and training of re-  
2           searchers in the use of large-scale, nationally rep-  
3           resentative data sets.

4           (c) **STATISTICAL REPORTS.**—The Director or the Na-  
5           tional Science Board, acting through the Center, shall  
6           issue regular, and as necessary, special statistical reports  
7           on topics related to the national and international science  
8           and engineering enterprise such as the biennial report re-  
9           quired by section 4(j)(1) of the National Science Founda-  
10          tion Act of 1950 (42 U.S.C. 1863(j)(1)) on indicators of  
11          the state of science and engineering in the United States.

12 **SEC. 506. NATIONAL SCIENCE FOUNDATION MANUFAC-**  
13 **TURING RESEARCH AND EDUCATION.**

14          (a) **MANUFACTURING RESEARCH.**—The Director  
15          shall carry out a program to award merit-reviewed, com-  
16          petitive grants to institutions of higher education to sup-  
17          port fundamental research leading to transformative ad-  
18          vances in manufacturing technologies, processes, and en-  
19          terprises that will support United States manufacturing  
20          through improved performance, productivity, sustain-  
21          ability, and competitiveness. Research areas may in-  
22          clude—

23                 (1) nanomanufacturing;

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

4           (3) manufacturing enterprise systems;

5           (4) advanced sensing and control techniques;

6           (5) materials processing; and

7           (6) information technologies for manufacturing,  
8           including predictive and real-time models and sim-  
9           ulations, and virtual manufacturing.

10          (b) **MANUFACTURING EDUCATION.**—In order to help  
11 ensure a well-trained manufacturing workforce, the Direc-  
12 tor shall award grants to strengthen and expand scientific  
13 and technical education and training in advanced manu-  
14 facturing, including through the Foundation’s Advanced  
15 Technological Education program.

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

18          (a) **MID-SCALE RESEARCH INSTRUMENTATION**  
19 **NEEDS.**—The National Science Board shall evaluate the  
20 needs, across all disciplines supported by the Foundation,  
21 for mid-scale research instrumentation that falls between  
22 the instruments funded by the Major Research Instrumen-  
23 tation program and the very large projects funded by the  
24 Major Research Equipment and Facilities Construction  
25 program.

1 (b) REPORT ON MID-SCALE RESEARCH INSTRUMENTEN-  
2 TATION PROGRAM.—Not later than 1 year after the date  
3 of enactment of this Act, the National Science Board shall  
4 submit to Congress a report on mid-scale research instru-  
5 mentation at the Foundation. At a minimum, this report  
6 shall include—

7 (1) the findings from the Board’s evaluation of  
8 instrumentation needs required under subsection (a),  
9 including a description of differences across dis-  
10 ciplines and Foundation research directorates;

11 (2) a recommendation or recommendations re-  
12 garding how the Foundation should set priorities for  
13 mid-scale instrumentation across disciplines and  
14 Foundation research directorates;

15 (3) a recommendation or recommendations re-  
16 garding the appropriateness of expanding existing  
17 programs, including the Major Research Instrumen-  
18 tation program or the Major Research Equipment  
19 and Facilities Construction program, to support  
20 more instrumentation at the mid-scale;

21 (4) a recommendation or recommendations re-  
22 garding the need for and appropriateness of a new,  
23 Foundation-wide program or initiative in support of  
24 mid-scale instrumentation, including any rec-  
25 ommendations regarding the administration of and



1 budget for such a program or initiative and the ap-  
2 propriate scope of instruments to be funded under  
3 such a program or initiative; and

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

7 **SEC. 508. PARTNERSHIPS FOR INNOVATION.**

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

15 (b) PARTNERSHIPS.—

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

19 (A) includes at least one private sector en-  
20 tity; and

21 (B) may include other institutions of high-  
22 er education, public sector institutions, private  
23 sector entities, and social enterprise nonprofit  
24 organizations.

1           (2) PRIORITY.—In selecting grant recipients  
2 under this section, the Director shall give priority to  
3 partnerships that include one or more institutions of  
4 higher education that are among the 100 institu-  
5 tions receiving, over the 3-year period immediately  
6 preceding the awarding of grants, the highest  
7 amount of research funding from the Foundation  
8 and at least one of the following:

9                   (A) A minority serving institution.

10                   (B) A primarily undergraduate institution.

11                   (C) A 2-year institution of higher edu-  
12 cation.

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

15           (1) to increase the economic or social impact of  
16 the most promising research at the institution or in-  
17 stitutions of higher education that are members of  
18 the partnership through knowledge transfer or com-  
19 mercialization;

20           (2) to increase the engagement of faculty and  
21 students across multiple disciplines and depart-  
22 ments, including faculty and students in schools of  
23 business and other appropriate non-STEM fields  
24 and disciplines in knowledge transfer activities;

1           (3) to enhance education and mentoring of stu-  
2           dents and faculty in innovation and entrepreneur-  
3           ship through networks, courses, and development of  
4           best practices and curricula;

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

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

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

16          (d) ADDITIONAL CRITERIA.—In selecting grant re-  
17          cipients under this section, the Director shall also consider  
18          the extent to which the applicants are able to demonstrate  
19          evidence of institutional support for, and commitment  
20          to—

21                (1) achieving the goals of the program as de-  
22                scribed in subsection (c);

23                (2) expansion to an institution-wide program if  
24                the initial proposal is not for an institution-wide pro-  
25                gram; and

1           (3) sustaining any new innovation tools and re-  
2           sources generated from funding under this program.

3           (e) LIMITATION.—No funds provided under this sec-  
4           tion may be used to construct or renovate a building or  
5           structure.

6           **SEC. 509. GREEN CHEMISTRY BASIC RESEARCH.**

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

15               (1) merit-reviewed competitive grants to indi-  
16               vidual investigators and teams of investigators, in-  
17               cluding, to the extent practicable, young investiga-  
18               tors, for research;

19               (2) grants to fund collaborative research part-  
20               nerships among universities, industry, and nonprofit  
21               organizations;

22               (3) symposia, forums, and conferences to in-  
23               crease outreach, collaboration, and dissemination of  
24               green chemistry advances and practices; and

1           (4) education, training, and retraining of under-  
2           graduate and graduate students and professional  
3           chemists and chemical engineers, including through  
4           partnerships with industry, in green chemistry  
5           science and engineering.

6 **SEC. 510. GRADUATE STUDENT SUPPORT.**

7           (a) FINDING.—The Congress finds that—

8           (1) the Integrative Graduate Education and Re-  
9           search Traineeship program is an important pro-  
10          gram for training the next generation of scientists  
11          and engineers in team-based interdisciplinary re-  
12          search and problem solving, and for providing them  
13          with the many additional skills, such as communica-  
14          tion skills, needed to thrive in diverse STEM ca-  
15          reers; and

16          (2) the Integrative Graduate Education and Re-  
17          search Traineeship program is no less valuable to  
18          the preparation and support of graduate students  
19          than the Foundation’s Graduate Research Fellow-  
20          ship program.

21          (b) EQUAL TREATMENT OF IGERT AND GRF.—Be-  
22          ginning in fiscal year 2011, the Director shall increase or,  
23          if necessary, decrease funding for the Foundation’s Inte-  
24          grative Graduate Education and Research Traineeship  
25          program (or any program by which it is replaced) at least

1 at the same rate as it increases or decreases funding for  
2 the Graduate Research Fellowship program.

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

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

13 (1) by inserting “(a) IN GENERAL.—” before  
14 “The Foundation is authorized”; and

15 (2) by adding at the end the following:

16 “(b) AMOUNT.—The Director shall establish for each  
17 year the amount to be awarded for scholarships and fel-  
18 lowships under this section for that year. Each such schol-  
19 arship and fellowship shall include a cost of education al-  
20 lowance of \$12,000, subject to any restrictions on the use  
21 of cost of education allowance as determined by the Direc-  
22 tor.”.

1 **SEC. 511. ROBERT NOYCE TEACHER SCHOLARSHIP PRO-**  
2 **GRAM.**

3 (a) **MATCHING REQUIREMENT.**—Section 10A(h)(1)  
4 of the National Science Foundation Authorization Act of  
5 2002 (42 U.S.C. 1862n–1a(h)(1)) is amended to read as  
6 follows:

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

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

15 “(B) in the case of grants in an amount of  
16 \$1,500,000 or more, an amount equal to at  
17 least 50 percent of the amount of the grant, at  
18 least one half of which shall be in cash.”.

19 (b) **RETIRING STEM PROFESSIONALS.**—Section 10A  
20 of the National Science Foundation Authorization Act of  
21 2002 (42 U.S.C. 1862n–1a) is amended in subsection  
22 (a)(2)(A) by inserting “including retiring professionals in  
23 those fields,” after “mathematics professionals,”.

1 **SEC. 512 UNDERGRADUATE BROADENING PARTICIPATION**  
2 **PROGRAM.**

3 The Foundation shall continue to support the His-  
4 torically Black Colleges and Universities Undergraduate  
5 Program, the Louis Stokes Alliances for Minority Partici-  
6 pation program, and the Tribal Colleges and Universities  
7 Program as separate programs.

8 **SEC. 513. RESEARCH EXPERIENCES FOR HIGH SCHOOL**  
9 **STUDENTS.**

10 The Director shall permit specialized STEM high  
11 schools conducting research to participate in major data  
12 collection initiatives from universities, corporations, or  
13 government labs under a research grant from the Founda-  
14 tion, as part of the research proposal.

15 **SEC. 514. RESEARCH EXPERIENCES FOR UNDERGRADU-**  
16 **ATES.**

17 (a) **RESEARCH SITES.**—The Director shall award  
18 grants, on a merit-reviewed, competitive basis, to institu-  
19 tions of higher education, nonprofit organizations, or con-  
20 sortia of such institutions and organizations, for sites des-  
21 ignated by the Director to provide research experiences for  
22 6 or more undergraduate STEM students for sites des-  
23 ignated at primarily undergraduate institutions of higher  
24 education and 10 or more undergraduate STEM students  
25 for all other sites, with consideration given to the goal of  
26 promoting the participation of individuals identified in sec-



1 tion 33 or 34 of the Science and Engineering Equal Op-  
2 portunities Act (42 U.S.C. 1885a or 1885b). The Director  
3 shall ensure that—

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

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

11 (3) the awards support a variety of projects, in-  
12 cluding independent investigator-led projects, inter-  
13 disciplinary projects, and multi-institutional projects  
14 (including virtual projects);

15 (4) students participating in each program  
16 funded have mentors, including during the academic  
17 year to the extent practicable, to help connect the  
18 students' research experiences to the overall aca-  
19 demic course of study and to help students achieve  
20 success in courses of study leading to a bacca-  
21 laurate degree in a STEM field;

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

24 (6) student participants are tracked, for em-  
25 ployment and continued matriculation in STEM

1 fields, through receipt of the undergraduate degree  
2 and for at least 3 years thereafter.

3 (b) INCLUSION OF UNDERGRADUATES IN STANDARD  
4 RESEARCH GRANTS.—The Director shall require that  
5 every recipient of a research grant from the Foundation  
6 proposing to include 1 or more students enrolled in certifi-  
7 cate, associate, or baccalaureate degree programs in car-  
8 rying out the research under the grant shall request sup-  
9 port, including stipend support, for such undergraduate  
10 students as part of the research proposal itself rather than  
11 as a supplement to the research proposal, unless such un-  
12 dergraduate participation was not foreseeable at the time  
13 of the original proposal.

14 **SEC. 515. STEM INDUSTRY INTERNSHIP PROGRAMS.**

15 (a) IN GENERAL.—The Director may award grants,  
16 on a competitive, merit-reviewed basis, to institutions of  
17 higher education, or consortia thereof, to establish or ex-  
18 pand partnerships with local or regional private sector en-  
19 tities, for the purpose of providing undergraduate students  
20 with integrated internship experiences that connect private  
21 sector internship experiences with the students' STEM  
22 coursework. The partnerships may also include industry  
23 or professional associations.

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

4 (c) USE OF GRANT FUNDS.—Grants under this sec-  
5 tion may be used—

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

8 (2) to develop curricula and instructional mate-  
9 rials related to industry, including the manufac-  
10 turing sector;

11 (3) to perform outreach to secondary schools;

12 (4) to develop mentorship programs for stu-  
13 dents with partner organizations; and

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

16 (d) PRIORITY.—In awarding grants under this sec-  
17 tion, the Director shall give priority to institutions of high-  
18 er education or consortia thereof that demonstrate signifi-  
19 cant outreach to and coordination with local or regional  
20 private sector entities and Regional Centers for the Trans-  
21 fer of Manufacturing Technology established by section  
22 25(a) of the National Institute of Standards and Tech-  
23 nology Act (15 U.S.C. 278k(a)) in developing academic  
24 courses designed to provide students with the skills or cer-

1 tifications necessary for employment in local or regional  
2 companies.

3 (c) OUTREACH TO RURAL COMMUNITIES.—The  
4 Foundation shall conduct outreach to institutions of high-  
5 er education and private sector entities in rural areas to  
6 encourage those entities to participate in partnerships  
7 under this section.

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

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

13 (1) for the purpose of providing stipends or  
14 compensation to students for private sector intern-  
15 ships; or

16 (2) as payment or reimbursement to private  
17 sector entities, except for institutions of higher edu-  
18 cation.

19 (f) REPORT.—Not less than 3 years after the date  
20 of enactment of this Act, the Director shall submit a re-  
21 port to Congress on the number and total value of awards  
22 made under this section, the number of students affected  
23 by those awards, any evidence of the effect of those awards  
24 on workforce preparation and jobs placement for partici-

1 pating students, and an economic and ethnic breakdown  
2 of the participating students.

3 **SEC. 516. CYBER-ENABLED LEARNING FOR NATIONAL**  
4 **CHALLENGES.**

5 The Director shall, in consultation with appropriate  
6 Federal agencies, identify ways to use cyber-enabled learn-  
7 ing to create an innovative STEM workforce and to help  
8 retrain and retain our existing STEM workforce to ad-  
9 dress national challenges, including national security and  
10 competitiveness.

11 **SEC. 517. FEDERAL CYBERSECURITY RESEARCH AND DE-**  
12 **VELOPMENT.**

13 (a) **FUNDAMENTAL CYBERSECURITY RESEARCH.—**  
14 The Director of the National Science Foundation shall  
15 give priority to computer and information science and en-  
16 gineering research to ensure substantial support is pro-  
17 vided to meet the following challenges in cybersecurity:

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

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

1           (3) How to test and verify that software ob-  
2           tained from a third party correctly implements stat-  
3           ed functionality, and only that functionality.

4           (4) How to guarantee the privacy of an individ-  
5           ual's identity, information, or lawful transactions  
6           when stored in distributed systems or transmitted  
7           over networks.

8           (5) How to build new protocols to enable the  
9           Internet to have robust security as one of its key ca-  
10          pabilities.

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

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

15          (8) How to address the growing problem of in-  
16          sider threat.

17          (b) SECURE CODING RESEARCH.—The Director shall  
18          support research that evaluates selected secure coding  
19          education and improvement programs. The Director shall  
20          also support research on new methods of integrating se-  
21          cure coding improvement into the core curriculum of com-  
22          puter science programs and of other programs where grad-  
23          uates have a substantial probability of developing software  
24          after graduation.

1           (c) ASSESSMENT OF SECURE CODING EDUCATION IN  
2 COLLEGES AND UNIVERSITIES.—Within one year after  
3 the date of enactment of this Act, the Director shall sub-  
4 mit to the Senate Committee on Commerce, Science, and  
5 Transportation and the House of Representatives Com-  
6 mittee on Science and Technology a report on the state  
7 of secure coding education in America’s colleges and uni-  
8 versities for each school that received National Science  
9 Foundation funding in excess of \$1,000,000 during fiscal  
10 year 2008. The report shall include—

11           (1) the number of students who earned under-  
12 graduate degrees in computer science or in each  
13 other program where graduates have a substantial  
14 probability of being engaged in software design or  
15 development after graduation;

16           (2) the percentage of those students who com-  
17 pleted substantive secure coding education or im-  
18 provement programs during their undergraduate ex-  
19 perience; and

20           (3) descriptions of the length and content of the  
21 education and improvement programs, and a meas-  
22 ure of the effectiveness of those programs in ena-  
23 bling the students to master secure coding and de-  
24 sign.

1 (d) CYBERSECURITY MODELING AND TESTBEDS.—  
2 The Director shall establish a program to award grants  
3 to institutions of higher education to establish cybersecu-  
4 rity testbeds capable of realistic modeling of real-time  
5 cyber attacks and defenses. The purpose of this program  
6 is to support the rapid development of new cybersecurity  
7 defenses, techniques, and processes by improving under-  
8 standing and assessing the latest technologies in a real-  
9 world environment. The testbeds shall be sufficiently large  
10 in order to model the scale and complexity of real world  
11 networks and environments.

12 (e) NSF COMPUTER AND NETWORK SECURITY RE-  
13 SEARCH GRANT AREAS.—Section 4(a)(1) of the Cyberse-  
14 curity Research and Development Act (15 U.S.C.  
15 7403(a)(1)) is amended—

16 (1) by striking “and” after the semicolon in  
17 subparagraph (H);

18 (2) by striking “property.” in subparagraph (I)  
19 and inserting “property;”; and

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

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

24 “(K) secure software engineering and software  
25 assurance, including—



1           “(i) programming languages and systems  
2 that include fundamental security features;

3           “(ii) portable or reusable code that re-  
4 mains secure when deployed in various environ-  
5 ments;

6           “(iii) verification and validation tech-  
7 nologies to ensure that requirements and speci-  
8 fications have been implemented; and

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

11          “(L) holistic system security that—

12           “(i) addresses the building of secure sys-  
13 tems from trusted and untrusted components;

14           “(ii) proactively reduces vulnerabilities;

15           “(iii) addresses insider threats; and

16           “(iv) supports privacy in conjunction with  
17 improved security;

18          “(M) monitoring and detection; and

19          “(N) mitigation and rapid recovery methods.”.

20          (f) NSF COMPUTER AND NETWORK SECURITY  
21 GRANTS.—Section 4(a)(3) of the Cybersecurity Research  
22 and Development Act (15 U.S.C. 7403(a)(3)) is amend-  
23 ed—

24           (1) by striking “and” in subparagraph (D);

1           (2) by striking “2007” in subparagraph (E)  
2           and inserting “2007;”; and

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

4                   “(F) \$150,000,000 for fiscal year 2010;

5                   “(G) \$155,000,000 for fiscal year 2011;

6                   “(H) \$160,000,000 for fiscal year 2012;

7                   “(I) \$165,000,000 for fiscal year 2013;

8           and

9                   “(J) \$170,000,000 for fiscal year 2014.”.

10          (g) COMPUTER AND NETWORK SECURITY CEN-  
11 TERS.—Section 4(b)(7) of such Act (15 U.S.C.  
12 7403(b)(7)) is amended—

13           (1) by striking “and” in subparagraph (D);

14           (2) by striking “2007” in subparagraph (E)  
15           and inserting “2007;”; and

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

17                   “(F) \$50,000,000 for fiscal year 2010;

18                   “(G) \$52,000,000 for fiscal year 2011;

19                   “(H) \$54,000,000 for fiscal year 2012;

20                   “(I) \$56,000,000 for fiscal year 2013; and

21                   “(J) \$58,000,000 for fiscal year 2014.”.

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

25           (1) by striking “and” in subparagraph (D);

1           (2) by striking “2007” in subparagraph (E)  
2           and inserting “2007;”; and

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

4                   “(F) \$40,000,000 for fiscal year 2010;

5                   “(G) \$42,000,000 for fiscal year 2011;

6                   “(H) \$44,000,000 for fiscal year 2012;

7                   “(I) \$46,000,000 for fiscal year 2013; and

8                   “(J) \$48,000,000 for fiscal year 2014.”.

9           (i) SCIENTIFIC AND ADVANCED TECHNOLOGY ACT  
10 GRANTS.—Section 5(b)(2) of such Act (15 U.S.C.  
11 7404(b)(2)) is amended—

12           (1) by striking “and” in subparagraph (D);

13           (2) by striking “2007” in subparagraph (E)  
14           and inserting “2007;”; and

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

16                   “(F) \$5,000,000 for fiscal year 2010;

17                   “(G) \$6,000,000 for fiscal year 2011;

18                   “(H) \$7,000,000 for fiscal year 2012;

19                   “(I) \$8,000,000 for fiscal year 2013; and

20                   “(J) \$9,000,000 for fiscal year 2014.”.

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

24           (1) by striking “and” in subparagraph (D);

1           (2) by striking “2007” in subparagraph (E)  
2           and inserting “2007;”; and

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

4                   “(F) \$20,000,000 for fiscal year 2010;

5                   “(G) \$22,000,000 for fiscal year 2011;

6                   “(H) \$24,000,000 for fiscal year 2012;

7                   “(I) \$26,000,000 for fiscal year 2013; and

8                   “(J) \$28,000,000 for fiscal year 2014.”.

9           (k) CYBERSECURITY FACULTY DEVELOPMENT  
10 TRAINEESHIP PROGRAM.—Section 5(e)(9) of such Act (15  
11 U.S.C. 7404(e)(9)) is amended by striking “2007.” and  
12 inserting “2007 and for each of fiscal years 2010 through  
13 2014.”.

14           (l) NETWORKING AND INFORMATION TECHNOLOGY  
15 RESEARCH AND DEVELOPMENT PROGRAM.—Section  
16 204(a)(1) of the High-Performance Computing Act of  
17 1991 (15 U.S.C. 5524(a)(1)) is amended—

18                   (1) by striking “and” after the semicolon in  
19                   subparagraph (B); and

20                   (2) by inserting after subparagraph (C) the fol-  
21                   lowing:

22                           “(D) develop and propose standards and  
23                           guidelines, and develop measurement techniques  
24                           and test methods, for enhanced cybersecurity

1           for computer networks and common user inter-  
2           faces to systems; and”.

3 **SEC. 518. FEDERAL CYBER SCHOLARSHIP-FOR-SERVICE**  
4           **PROGRAM.**

5           (a) IN GENERAL.—The Director of the National  
6 Science Foundation shall establish a Federal Cyber Schol-  
7 arship-for-Service program to recruit and train the next  
8 generation of Federal information technology workers and  
9 security managers.

10          (b) PROGRAM DESCRIPTION AND COMPONENTS.—  
11 The program—

12           (1) shall provide scholarships, that provide full  
13 tuition, fees, and a stipend, for up to 1,000 students  
14 per year in their pursuit of undergraduate or grad-  
15 uate degrees in the cybersecurity field;

16           (2) shall require scholarship recipients, as a  
17 condition of receiving a scholarship under the pro-  
18 gram, to agree to serve in the Federal information  
19 technology workforce for a period equal to the length  
20 of the scholarship following graduation if offered em-  
21 ployment in that field by a Federal agency;

22           (3) shall provide opportunities for students to  
23 receive temporary appointments for meaningful em-  
24 ployment in the Federal information technology

1 workforce during school vacation periods and for in-  
2 ternships;

3 (4) shall provide a procedure for identifying  
4 promising K–12 students for participation in sum-  
5 mer work and internship programs that would lead  
6 to certification of Federal information technology  
7 workforce standards and possible future employ-  
8 ment; and

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

12 (c) HIRING AUTHORITY.—For purposes of any law  
13 or regulation governing the appointment of individuals in  
14 the Federal civil service, upon the successful completion  
15 of their studies, students receiving a scholarship under the  
16 program shall be hired under the authority provided for  
17 in section 213.3102(r) of title 5, Code of Federal Regula-  
18 tions, and be exempt from competitive service. Upon ful-  
19 fillment of the service term, such individuals shall be con-  
20 verted to a competitive service position without competi-  
21 tion if the individual meets the requirements for that posi-  
22 tion.

23 (d) ELIGIBILITY.—To be eligible to receive a scholar-  
24 ship under this section, an individual shall—

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

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

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

6           (1) consider, to the extent possible, a diverse  
7           pool of applicants whose interests are of an inter-  
8           disciplinary nature, encompassing the social sci-  
9           entific as well as the technical dimensions of cyber  
10          security; and

11          (2) give preference to applicants that have par-  
12          ticipated in the competition and challenge described  
13          in section 13.

14          (f) EVALUATION AND REPORT.—The Director shall  
15          evaluate and report to the Senate Committee on Com-  
16          merce, Science, and Transportation and the House of Rep-  
17          resentatives Committee on Science and Technology on the  
18          success of recruiting individuals for the scholarships.

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

22               (1) \$50,000,000 for fiscal year 2010;

23               (2) \$55,000,000 for fiscal year 2011;

24               (3) \$60,000,000 for fiscal year 2012;

25               (4) \$65,000,000 for fiscal year 2013; and

1 (5) \$70,000,000 for fiscal year 2014.

2 **TITLE VI—INNOVATION**

3 **SEC. 601. OFFICE OF INNOVATION AND ENTREPRENEUR-**  
4 **SHIP.**

5 The Stevenson-Wydler Technology Innovation Act of  
6 1980 (15 U.S.C. 3701 et seq.), as amended by section 107  
7 of this Act, is amended by adding at the end the following:

8 **“SEC. 25. OFFICE OF INNOVATION AND ENTREPRENEUR-**  
9 **SHIP.**

10 “(a) IN GENERAL.—The Secretary shall establish an  
11 Office of Innovation and Entrepreneurship to foster inno-  
12 vation and the commercialization of new technologies,  
13 products, processes, and services with the goal of pro-  
14 moting productivity and economic growth in the United  
15 States.

16 “(b) DUTIES.—The Office of Innovation and Entre-  
17 preneurship shall be responsible for—

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

22 “(2) identifying existing barriers to innovation  
23 and commercialization, including access to capital  
24 and other resources, and ways to overcome those  
25 barriers;



1 “(3) providing access to relevant data, research,  
2 and technical assistance on innovation and commer-  
3 cialization;

4 “(4) strengthening collaboration on and coordi-  
5 nation of policies relating to innovation and commer-  
6 cialization, including those focused on the needs of  
7 small businesses and rural communities, within the  
8 Department of Commerce and between the Depart-  
9 ment of Commerce and other Federal agencies, as  
10 appropriate; and

11 “(5) any other duties as determined by the Sec-  
12 retary.

13 “(c) ADVISORY COMMITTEE.—The Secretary shall es-  
14 tablish an Advisory Council on Innovation and Entrepre-  
15 neurship to provide advice to the Secretary on carrying  
16 out subsection (b).”.

17 **SEC. 602. FEDERAL LOAN GUARANTEES FOR INNOVATIVE**  
18 **TECHNOLOGIES IN MANUFACTURING.**

19 The Stevenson-Wydler Technology Innovation Act of  
20 1980 (15 U.S.C. 3701 et seq.), as amended by section  
21 601, is further amended by adding at the end the fol-  
22 lowing:

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

3 “(a) **ESTABLISHMENT.**—The Secretary shall estab-  
4 lish a program to provide loan guarantees for obligations  
5 to small- or medium-sized manufacturers for the use or  
6 production of innovative technologies.

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

11 “(1) to use an innovative technology or an inno-  
12 vative process in manufacturing; or

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

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

20 “(d) **LIMITATION ON AMOUNT.**—A loan guarantee  
21 shall not exceed an amount equal to 80 percent of the obli-  
22 gation, as estimated at the time at which the loan guar-  
23 antee is issued.

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

1           “(1) there is a reasonable prospect of repay-  
2           ment of the principal and interest on the obligation  
3           by the borrower;

4           “(2) the amount of the obligation (when com-  
5           bined with amounts available to the borrower from  
6           other sources) is sufficient to carry out the project;

7           “(3) the obligation is not subordinate to other  
8           financing;

9           “(4) the obligation bears interest at a rate that  
10          does not exceed a level that the Secretary determines  
11          appropriate, taking into account the prevailing rate  
12          of interest in the private sector for similar loans and  
13          risks; and

14          “(5) the term of an obligation requires full re-  
15          payment over a period not to exceed the lesser of—

16                  “(A) 30 years; or

17                  “(B) 90 percent of the projected useful  
18          life, as determined by the Secretary, of the  
19          physical asset to be financed by the obligation.

20          “(f) DEFAULTS.—

21                  “(1) PAYMENT BY SECRETARY.—

22                          “(A) IN GENERAL.—If a borrower defaults  
23                          (as defined in regulations promulgated by the  
24                          Secretary and specified in the loan guarantee)  
25                          on the obligation, the holder of the loan guar-

1           antee shall have the right to demand payment  
2           of the unpaid amount from the Secretary.

3           “(B) PAYMENT REQUIRED.—Within such  
4           period as may be specified in the loan guar-  
5           antee or related agreements, the Secretary shall  
6           pay to the holder of the loan guarantee the un-  
7           paid interest on and unpaid principal of the ob-  
8           ligation as to which the borrower has defaulted,  
9           unless the Secretary finds that there was no de-  
10          fault by the borrower in the payment of interest  
11          or principal or that the default has been rem-  
12          edied.

13          “(C) FORBEARANCE.—Nothing in this sub-  
14          section precludes any forbearance by the holder  
15          of the obligation for the benefit of the borrower  
16          which may be agreed upon by the parties to the  
17          obligation and approved by the Secretary.

18          “(2) SUBROGATION.—

19          “(A) IN GENERAL.—If the Secretary  
20          makes a payment under paragraph (1), the Sec-  
21          retary shall be subrogated to the rights, as  
22          specified in the loan guarantee, of the recipient  
23          of the payment or related agreements including,  
24          if appropriate, the authority (notwithstanding  
25          any other provision of law)—

1           “(i) to complete, maintain, operate,  
2           lease, or otherwise dispose of any property  
3           acquired pursuant to such loan guarantee  
4           or related agreement; or

5           “(ii) to permit the borrower, pursuant  
6           to an agreement with the Secretary, to  
7           continue to pursue the purposes of the  
8           project if the Secretary determines that  
9           such an agreement is in the public interest.

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

16          “(3) NOTIFICATION.—If the borrower defaults  
17          on an obligation, the Secretary shall notify the At-  
18          torney General of the default.

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

22                 “(1) to protect the interests of the United  
23                 States in the case of default; and

1           “(2) to have available all the patents and tech-  
2           nology necessary for any person selected, including  
3           the Secretary, to complete and operate the project.

4           “(i) CONSULTATION.—In establishing the terms and  
5           conditions of a loan guarantee under this section, the Sec-  
6           retary shall consult with the Secretary of the Treasury.

7           “(j) FEES.—

8           “(1) IN GENERAL.—The Secretary shall charge  
9           and collect fees for loan guarantees in amounts the  
10          Secretary determines are sufficient to cover applica-  
11          ble administrative expenses.

12          “(2) AVAILABILITY.—Fees collected under this  
13          subsection shall—

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

16                  “(B) remain available until expended, sub-  
17                  ject to such other conditions as are contained in  
18                  annual appropriations Acts.

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

22          “(k) RECORDS.—

23                  “(1) IN GENERAL.—With respect to a loan  
24                  guarantee under this section, the borrower, the lend-  
25                  er, and any other appropriate party shall keep such

1 records and other pertinent documents as the Sec-  
2 retary shall prescribe by regulation, including such  
3 records as the Secretary may require to facilitate an  
4 effective audit.

5 “(2) ACCESS.—The Secretary and the Comp-  
6 troller General of the United States, or their duly  
7 authorized representatives, shall have access to  
8 records and other pertinent documents for the pur-  
9 pose of conducting an audit.

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

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

17 “(1) criteria that the Secretary shall use to de-  
18 termine eligibility for loan guarantees under this sec-  
19 tion, including—

20 “(A) whether a borrower is a small- or me-  
21 dium-sized manufacturer; and

22 “(B) whether a borrower demonstrates  
23 that a market exists for the innovative tech-  
24 nology product, or the integral component of  
25 such a product, to be manufactured, as evi-

1           denced by written statements of interest from  
2           potential purchasers;

3           “(2) criteria that the Secretary shall use to de-  
4           termine the amount of any fees charged under sub-  
5           section (j), including criteria related to the amount  
6           of the obligation;

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

9           “(4) any other policies, procedures, or informa-  
10          tion necessary to implement this section.

11         “(n) AUDIT.—

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

16           “(2) COMPTROLLER GENERAL REVIEW.—The  
17           Comptroller General of the United States shall con-  
18           duct a biennial review of the Secretary’s execution of  
19           the program under this section.

20           “(3) REPORT.—The results of the independent  
21           audit under paragraph (1) and the Comptroller Gen-  
22           eral’s review under paragraph (2) shall be provided  
23           directly to the Committee on Science and Tech-  
24           nology of the House of Representatives and the



1 Committee on Commerce, Science, and Transpor-  
2 tation of the Senate.

3 “(o) REPORT TO CONGRESS.—Concurrent with the  
4 submission to Congress of the President’s annual budget  
5 request in each year after the date of enactment of the  
6 America COMPETES Reauthorization Act of 2010, the  
7 Secretary shall transmit to the Committee on Science and  
8 Technology of the House of Representatives and the Com-  
9 mittee on Commerce, Science, and Transportation of the  
10 Senate a report containing a summary of all activities car-  
11 ried out under this section.

12 “(p) COORDINATION AND NONDUPLICATION.—To  
13 the maximum extent practicable, the Secretary shall en-  
14 sure that the activities carried out under this section are  
15 coordinated with, and do not duplicate the efforts of, other  
16 loan guarantee programs within the Federal Government.

17 “(q) MEP CENTERS.—The Secretary may use cen-  
18 ters established under section 25 of the National Institute  
19 of Standards and Technology Act (15 U.S.C. 278k) to  
20 provide information about the program established under  
21 this section and to conduct outreach to potential bor-  
22 rowers, as appropriate.

23 “(r) MINIMIZING RISK.—The Secretary shall promul-  
24 gate regulations and policies to carry out this section in  
25 accordance with Office of Management and Budget Cir-

1 cular No. A-129, entitled ‘Policies for Federal Credit Pro-  
2 grams and Non-Tax Receivables’, as in effect on the date  
3 of enactment of the America COMPETES Reauthoriza-  
4 tion Act of 2010.

5 “(s) SENSE OF CONGRESS.—It is the sense of Con-  
6 gress that no loan guarantee shall be made under this sec-  
7 tion unless the borrower agrees to use a federally approved  
8 electronic employment eligibility verification system to  
9 verify the employment eligibility of—

10 “(1) all persons hired during the contract term  
11 by the borrower to perform employment duties with-  
12 in the United States; and

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

16 “(t) DEFINITIONS.—In this section:

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

20 “(2) INNOVATIVE PROCESS.—The term ‘innova-  
21 tive process’ means a process that is significantly  
22 improved as compared to the process in general use  
23 in the commercial marketplace in the United States  
24 at the time the loan guarantee is issued.

1           “(3) INNOVATIVE TECHNOLOGY.—The term ‘in-  
2           novative technology’ means a technology that is sig-  
3           nificantly improved as compared to the technology in  
4           general use in the commercial marketplace in the  
5           United States at the time the loan guarantee is  
6           issued.

7           “(4) LOAN GUARANTEE.—The term ‘loan guar-  
8           antee’ has the meaning given such term in section  
9           502 of the Federal Credit Reform Act of 1990 (2  
10          U.S.C. 661a). The term includes a loan guarantee  
11          commitment (as defined in section 502 of such Act  
12          (2 U.S.C. 661a)).

13          “(5) OBLIGATION.—The term ‘obligation’  
14          means the loan or other debt obligation that is guar-  
15          anteed under this section.

16          “(6) PROGRAM.—The term ‘program’ means  
17          the loan guarantee program established in sub-  
18          section (a).

19          “(u) AUTHORIZATION OF APPROPRIATIONS.—

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

1           “(2) PRINCIPAL AND INTEREST.—There are au-  
2           thorized to be appropriated such sums as are nec-  
3           essary to carry out subsection (g).”.

4 **SEC. 603. REGIONAL INNOVATION PROGRAM.**

5           The Stevenson-Wydler Technology Innovation Act of  
6 1980 (15 U.S.C. 3701 et seq.), as amended by section  
7 602, is further amended by adding at the end thereof the  
8 following:

9 **“SEC. 27. REGIONAL INNOVATION PROGRAM.**

10          “(a) ESTABLISHMENT.—The Secretary shall estab-  
11 lish a regional innovation program to encourage and sup-  
12 port the development of regional innovation strategies, in-  
13 cluding regional innovation clusters and science and re-  
14 search parks.

15          “(b) REGIONAL INNOVATION CLUSTER GRANTS.—

16               “(1) IN GENERAL.—As part of the program es-  
17 tablished under subsection (a), the Secretary may  
18 award grants on a competitive basis to eligible re-  
19 cipients for activities relating to the formation and  
20 development of regional innovation clusters.

21               “(2) PERMISSIBLE ACTIVITIES.—Grants award-  
22 ed under this subsection may be used for activities  
23 determined appropriate by the Secretary, including  
24 the following:

25                       “(A) Feasibility studies.

1           “(B) Planning activities.

2           “(C) Technical assistance.

3           “(D) Developing or strengthening commu-  
4           nication and collaboration between and among  
5           participants of a regional innovation cluster.

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

8           “(F) Facilitating market development of  
9           products and services developed by a regional  
10          innovation cluster, including through dem-  
11          onstration, deployment, technology transfer,  
12          and commercialization activities.

13          “(G) Developing relationships between a  
14          regional innovation cluster and entities or clus-  
15          ters in other regions.

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

19          “(3) ELIGIBLE RECIPIENT DEFINED.—In this  
20          subsection, the term ‘eligible recipient’ means—

21               “(A) a State;

22               “(B) an Indian tribe;

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

25               “(D) an entity that—

1           “(i) is a nonprofit organization, an in-  
2           stitution of higher education, a public-pri-  
3           vate partnership, a science park, a Federal  
4           laboratory, or an economic development or-  
5           ganization or similar entity; and

6           “(ii) has an application that is sup-  
7           ported by a State or a political subdivision  
8           of a State; or

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

11         “(4) APPLICATION.—

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

17           “(B) COMPONENTS.—The application shall  
18           include, at a minimum, a description of the re-  
19           gional innovation cluster supported by the pro-  
20           posed activity, including a description of—

21           “(i) whether the regional innovation  
22           cluster is supported by the private sector,  
23           State and local governments, and other rel-  
24           evant stakeholders;

1           “(ii) how the existing participants in  
2           the regional innovation cluster will encour-  
3           age and solicit participation by all types of  
4           entities that might benefit from participa-  
5           tion, including newly formed entities and  
6           those rival to existing participants;

7           “(iii) the extent to which the regional  
8           innovation cluster is likely to stimulate in-  
9           novation and have a positive impact on re-  
10          gional economic growth and development;

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

14          “(v) whether the participants in the  
15          regional innovation cluster are capable of  
16          attracting additional funds from non-Fed-  
17          eral sources; and

18          “(vi) the likelihood that the partici-  
19          pants in the regional innovation cluster will  
20          be able to sustain activities once grant  
21          funds under this subsection have been ex-  
22          pended.

23          “(C) SPECIAL CONSIDERATION.—The Sec-  
24          retary shall give special consideration to appli-

1 cations from regions that contain communities  
2 negatively impacted by trade.

3 “(5) SPECIAL CONSIDERATION.—The Secretary  
4 shall give special consideration to an eligible recipi-  
5 ent who agrees to collaborate with local workforce  
6 investment area boards.

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

10 “(7) USE AND APPLICATION OF RESEARCH AND  
11 INFORMATION PROGRAM.—To the maximum extent  
12 practicable, the Secretary shall ensure that activities  
13 funded under this subsection use and apply any rel-  
14 evant research, best practices, and metrics developed  
15 under the program established in subsection (c).

16 “(c) REGIONAL INNOVATION RESEARCH AND INFOR-  
17 MATION PROGRAM.—

18 “(1) IN GENERAL.—As part of the program es-  
19 tablished under subsection (a), the Secretary shall  
20 establish a regional innovation research and infor-  
21 mation program—

22 “(A) to gather, analyze, and disseminate  
23 information on best practices for regional inno-  
24 vation strategies (including regional innovation  
25 clusters), including information relating to how



1 innovation, productivity, and economic develop-  
2 ment can be maximized through such strategies;

3 “(B) to provide technical assistance, in-  
4 cluding through the development of technical  
5 assistance guides, for the development and im-  
6 plementation of regional innovation strategies  
7 (including regional innovation clusters);

8 “(C) to support the development of rel-  
9 evant metrics and measurement standards to  
10 evaluate regional innovation strategies (includ-  
11 ing regional innovation clusters), including the  
12 extent to which such strategies stimulate inno-  
13 vation, productivity, and economic development;  
14 and

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

18 “(i) the size, specialization, and com-  
19 petitiveness of regional innovation clusters;

20 “(ii) the regional domestic product  
21 contribution, total jobs and earnings by  
22 key occupations, establishment size, nature  
23 of specialization, patents, Federal research  
24 and development spending, and other rel-

1           evant information for regional innovation  
2           clusters; and

3                   “(iii) supply chain product and service  
4           flows within and between regional innova-  
5           tion clusters.

6           “(2) RESEARCH GRANTS.—The Secretary may  
7           award research grants on a competitive basis to sup-  
8           port and further the goals of the program estab-  
9           lished under this subsection.

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

15           “(4) CLUSTER GRANT PROGRAM.—The Sec-  
16           retary shall incorporate data and analysis relating to  
17           any regional innovation cluster supported by a grant  
18           under subsection (b) into the program established  
19           under this subsection.

20           “(d) INTERAGENCY COORDINATION.—

21                   “(1) IN GENERAL.—To the maximum extent  
22           practicable, the Secretary shall ensure that the ac-  
23           tivities carried out under this section are coordinated  
24           with, and do not duplicate the efforts of, other pro-

1 grams at the Department of Commerce or other  
2 Federal agencies.

3 “(2) COLLABORATION.—

4 “(A) IN GENERAL.—The Secretary shall  
5 explore and pursue collaboration with other  
6 Federal agencies, including through multi-  
7 agency funding opportunities, on regional inno-  
8 vation strategies.

9 “(B) SMALL BUSINESSES.—The Secretary  
10 shall ensure that such collaboration with Fed-  
11 eral agencies prioritizes the needs and chal-  
12 lenges of small businesses.

13 “(e) EVALUATION.—

14 “(1) IN GENERAL.—Not later than 4 years  
15 after the date of enactment of the America COM-  
16 PETES Reauthorization Act of 2010, the Secretary  
17 shall enter into a contract with an independent enti-  
18 ty, such as the National Academy of Sciences, to  
19 conduct an evaluation of the program established  
20 under subsection (a).

21 “(2) REQUIREMENTS.—The evaluation shall in-  
22 clude—

23 “(A) whether the program is achieving its  
24 goals;

1           “(B) any recommendations for how the  
2           program may be improved; and

3           “(C) a recommendation as to whether the  
4           program should be continued or terminated.

5           “(f) DEFINITIONS.—In this section:

6           “(1) REGIONAL INNOVATION CLUSTER.—The  
7           term ‘regional innovation cluster’ means a geo-  
8           graphically bounded network of similar, synergistic,  
9           or complementary entities that—

10           “(A) are engaged in or with a particular  
11           industry sector;

12           “(B) have active channels for business  
13           transactions and communication;

14           “(C) share specialized infrastructure, labor  
15           markets, and services; and

16           “(D) leverage the region’s unique competi-  
17           tive strengths to stimulate innovation and cre-  
18           ate jobs.

19           “(2) STATE.—The term ‘State’ means one of  
20           the several States, the District of Columbia, the  
21           Commonwealth of Puerto Rico, the Virgin Islands,  
22           Guam, American Samoa, the Commonwealth of the  
23           Northern Mariana Islands, or any other territory or  
24           possession of the United States.

1       “(g) AUTHORIZATION OF APPROPRIATIONS.—There  
2 are authorized to be appropriated such sums as are nec-  
3 essary for each of fiscal years 2011 through 2015 to carry  
4 out this section, including such sums as are necessary to  
5 carry out the evaluation required under subsection (e).”.

6 **SEC. 604. SCIENCE AND RESEARCH PARKS.**

7       The Stevenson-Wydler Technology Innovation Act of  
8 1980 (15 U.S.C. 3701 et seq.), as amended by section  
9 603, is further amended by adding at the end thereof the  
10 following:

11 **“SEC. 28. SCIENCE AND RESEARCH PARKS.**

12       “(a) ESTABLISHMENT.—Upon the application of an  
13 eligible recipient, the Secretary is authorized to provide  
14 financial assistance under this section for the development  
15 and construction of science and research parks to promote  
16 the clustering of innovation through high technology ac-  
17 tivities.

18       “(b) DEVELOPMENT OF PLANS FOR CONSTRUCTION  
19 OF SCIENCE PARKS.—

20               “(1) IN GENERAL.—The Secretary may award  
21 grants for the development of feasibility studies and  
22 plans for the construction of new science parks or  
23 renovation or expansion of existing science parks.

1           “(2) LIMITATION ON AMOUNT OF GRANTS.—

2           The amount of a grant awarded under this sub-  
3           section may not exceed \$750,000.

4           “(3) AWARD.—

5                   “(A) COMPETITION REQUIRED.—The Sec-  
6           retary shall award grants under this subsection  
7           pursuant to a full and open competition.

8                   “(B) GEOGRAPHIC DISPERSION.— In con-  
9           ducting a competitive process, the Secretary  
10          shall consider the need to avoid undue geo-  
11          graphic concentration among any one category  
12          of States based on their predominate rural or  
13          urban character as indicated by population den-  
14          sity.

15                  “(C) SELECTION CRITERIA.—The Sec-  
16          retary shall publish the criteria to be utilized in  
17          any competition under this paragraph for the  
18          selection of recipients of grants under this sub-  
19          section, which shall include requirements relat-  
20          ing to the—

21                          “(i) effect the science park will have  
22                          on regional economic growth and develop-  
23                          ment;

24                          “(ii) number of jobs to be created at  
25                          the science park and the surrounding re-

1 regional community each year during its first  
2 5 years;

3 “(iii) funding to be required to con-  
4 struct, renovate or expand, the science  
5 park during its first 5 years;

6 “(iv) amount and type of financing  
7 and access to capital available to the appli-  
8 cant;

9 “(v) types of businesses and research  
10 entities expected in the science park and  
11 surrounding regional community;

12 “(vi) letters of intent by businesses  
13 and research entities to locate in the  
14 science park;

15 “(vii) capability to attract a well  
16 trained workforce to the science park;

17 “(viii) the management of the science  
18 park during its first 5 years;

19 “(ix) expected financial risks in the  
20 construction and operation of the science  
21 park and the risk mitigation strategy;

22 “(x) physical infrastructure available  
23 to the science park, including roads, utili-  
24 ties, and telecommunications;

1           “(xi) utilization of energy-efficient  
2 building technology including nationally  
3 recognized green building design practices,  
4 renewable energy, cogeneration, and other  
5 methods that increase energy efficiency  
6 and conservation;

7           “(xii) consideration to the trans-  
8 formation of military bases affected by the  
9 base realignment and closure process  
10 (BRAC) or the redevelopment of existing  
11 buildings, structures, or brownfield sites  
12 that are abandoned, idled, or underused  
13 into single or multiple building facilities for  
14 science and technology companies and in-  
15 stitutions;

16           “(xiii) ability to collaborate with other  
17 science parks throughout the world;

18           “(xiv) consideration of sustainable de-  
19 velopment practices and the quality of life  
20 at the science park; and

21           “(xv) other such criteria as the Sec-  
22 retary shall prescribe.

23           “(4) AUTHORIZATION OF APPROPRIATIONS.—

24           There are authorized to be appropriated \$7,500,000



1 for each of the fiscal years 2011 through 2015 to  
2 carry out this subsection.

3 “(c) LOAN GUARANTEES FOR SCIENCE PARK INFRA-  
4 STRUCTURE.—

5 “(1) IN GENERAL.—Subject to paragraph (2),  
6 the Secretary may guarantee up to 80 percent of the  
7 loan amount for projects for the construction or ex-  
8 pansion, including renovation and modernization, of  
9 science park infrastructure.

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

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

15 “(B) \$500,000,000 with respect to all  
16 projects.

17 “(3) SELECTION OF GUARANTEE RECIPI-  
18 ENTS.—The Secretary shall select recipients of loan  
19 guarantees under this subsection based upon the  
20 ability of the recipient to collateralize the loan  
21 amount through bonds, equity, property, and such  
22 other things of values as the Secretary shall deem  
23 necessary. Recipients of grants under subsection (a)  
24 are not eligible for a loan guarantee during the pe-  
25 riod of the grant. To the extent that the Secretary

1 determines it to be feasible, the Secretary may select  
2 recipients of guarantee assistance in accord with a  
3 competitive process that takes into account the fac-  
4 tors set out in subsection (c) of this section.

5 “(4) TERMS AND CONDITIONS FOR LOAN GUAR-  
6 ANTEES.—The loans guaranteed under this sub-  
7 section shall be subject to such terms and conditions  
8 as the Secretary may prescribe, except that—

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

11 “(i) 30 years; or

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

15 “(B) a loan guaranteed under this sub-  
16 section may not be subordinated to another  
17 debt contracted by the borrower or to any other  
18 claims against the borrowers in the case of de-  
19 fault;

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

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

3           “(i) the income from the loan is ex-  
4 cluded from gross income for purposes of  
5 chapter 1 of the Internal Revenue Code of  
6 1986; or

7           “(ii) the guarantee provides signifi-  
8 cant collateral or security, as determined  
9 by the Secretary in coordination with the  
10 Secretary of the Treasury, for other obliga-  
11 tions the income from which is so excluded;

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

14           “(i) the guarantee has been properly  
15 obtained;

16           “(ii) the underlying loan qualified for  
17 the guarantee; and

18           “(iii) absent fraud or material mis-  
19 representation by the holder, the guarantee  
20 is presumed to be valid, legal, and enforce-  
21 able;

22           “(F) the Secretary may not extend credit  
23 assistance unless the Secretary has determined  
24 that there is a reasonable assurance of repay-  
25 ment; and

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

7           “(5) PAYMENT OF LOSSES.—

8           “(A) IN GENERAL.—If, as a result of a de-  
9           fault by a borrower under a loan guaranteed  
10          under this subsection, after the holder has  
11          made such further collection efforts and insti-  
12          tuted such enforcement proceedings as the Sec-  
13          retary may require, the Secretary determines  
14          that the holder has suffered a loss, the Sec-  
15          retary shall pay to the holder the percentage of  
16          the loss specified in the guarantee contract.  
17          Upon making any such payment, the Secretary  
18          shall be subrogated to all the rights of the re-  
19          cipient of the payment. The Secretary shall be  
20          entitled to recover from the borrower the  
21          amount of any payments made pursuant to any  
22          guarantee entered into under this section.

23          “(B) ENFORCEMENT OF RIGHTS.—The At-  
24          torney General shall take such action as may be  
25          appropriate to enforce any right accruing to the

1 United States as a result of the issuance of any  
2 guarantee under this section.

3 “(C) FORBEARANCE.—Nothing in this sec-  
4 tion may be construed to preclude any forbear-  
5 ance for the benefit of the borrower which may  
6 be agreed upon by the parties to the guaranteed  
7 loan and approved by the Secretary, if budget  
8 authority for any resulting subsidy costs (as de-  
9 fined in section 502(5) of the Federal Credit  
10 Reform Act of 1990) is available.

11 “(6) REVIEW.—

12 “(A) The Secretary shall periodically as-  
13 sess the credit risk of new and existing direct  
14 loans or guaranteed loans.

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

19 “(i) conduct a review of the subsidy  
20 estimates for the loan guarantees under  
21 this subsection; and

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

1           “(7) TERMINATION.—A loan may not be guar-  
2           anteed under this subsection after September 30,  
3           2015.

4           “(8) AUTHORIZATION OF APPROPRIATIONS.—  
5           There are authorized to be appropriated—

6                   “(A) such sums as are necessary annually  
7                   for the cost (as defined in section 502(5) of the  
8                   Federal Credit Reform Act of 1990) of guaran-  
9                   teeing \$500,000,000 in loans under this sub-  
10                  section, and

11                   “(B) such sums as may be necessary for  
12                   administrative expenses in fiscal year 2011 and  
13                   thereafter,

14           such sums to remain available until expended.

15           “(d) SCIENCE PARK DEFINED.—In this section, the  
16           term ‘science park’ means a property-based venture that—

17                   “(1) has—

18                           “(A) master-planned property and build-  
19                           ings designed primarily for private-public re-  
20                           search and development activities, high tech-  
21                           nology and science-based companies, and re-  
22                           search and development support services;

23                           “(B) a contractual or operational relation-  
24                           ship with one or more science- or research-re-

1           lated institution of higher education or govern-  
2           mental or non-profit research laboratories;

3           “(C) as its primary mission the promotion  
4           of research and development through industry  
5           partnerships, assisting in the growth of new  
6           ventures, and promoting innovation-driven eco-  
7           nomic development;

8           “(D) a role in facilitating the transfer of  
9           technology and business skills between research-  
10          ers and industry teams; and

11          “(E) a role in promoting technology-led  
12          economic development for the community or re-  
13          gion in which the science park is located;

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

16          “(3) may enter into partnerships or joint ven-  
17          tures with for-profit entities for development or  
18          management of specific components of the park.”.

## 19                           **TITLE VII—GENERAL** 20                           **PROVISIONS**

### 21   **SEC. 701. GOVERNMENT ACCOUNTABILITY OFFICE REVIEW.**

22           Not later than May 31, 2013, the Comptroller Gen-  
23          eral of the United States shall submit a report to the Sen-  
24          ate Committee on Commerce, Science, and Transportation  
25          and the House of Representatives Committee on Science

1 and Technology that evaluates the status of the programs  
2 authorized in this Act, including the extent to which such  
3 programs have been funded, implemented, and are con-  
4 tributing to achieving the goals of the Act.

5 **SEC. 702. SALARY RESTRICTIONS.**

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

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

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