

[DISCUSSION DRAFT]

NOVEMBER 1, 2013

113TH CONGRESS
1ST SESSION

H. R. _____

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

IN THE HOUSE OF REPRESENTATIVES

M. _____ introduced the following bill; which was referred to the
Committee on _____

A BILL

To provide for investment in innovation through scientific 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 “Frontiers in Innovation, Research, Science, and Tech-

6 nology Act of 2013” or the “FIRST Act of 2013”.

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

Sec. 1. Short title; table of contents.

TITLE I—NATIONAL SCIENCE FOUNDATION

- Sec. 101. Findings.
- Sec. 102. Policy objectives.
- Sec. 103. Definitions.
- Sec. 104. Greater accountability in Federal funding for research.
- Sec. 105. Social and behavioral sciences.
- Sec. 106. Obligation of major research equipment and facilities construction funds.
- Sec. 107. Graduate student support.
- Sec. 108. Prohibition.
- Sec. 109. Review of education programs.
- Sec. 110. Recompetition of awards.
- Sec. 111. Sense of the Congress regarding industry investment in STEM education.
- Sec. 112. Misrepresentation of research results.
- Sec. 113. Citations supporting research grant applications.
- Sec. 114. Research grant conditions.
- Sec. 115. Computing resources study.
- Sec. 116. Alternative research funding models.
- Sec. 117. Repeal of sustainable chemistry basic research program.
- Sec. 118. Rotating personnel.
- Sec. 119. Report of the NSB Task Force on Administrative Burden.
- Sec. 120. Study to evaluate Federal scientific funding of non-United States citizens.

TITLE II—SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS

- Sec. 201. Findings; sense of Congress.
- Sec. 202. STEM Education Advisory Panel.
- Sec. 203. Committee on STEM education.
- Sec. 204. STEM Education Coordinating Office.

TITLE III—OFFICE OF SCIENCE AND TECHNOLOGY POLICY

- Sec. 301. Regulatory efficiency.
- Sec. 302. Public access to research articles and data.

TITLE IV—INNOVATION AND TECHNOLOGY TRANSFER

Subtitle A—NIST Reauthorization

- Sec. 401. Standards and conformity assessment and other transaction authority.
- Sec. 402. Visiting Committee on Advanced Technology.
- Sec. 403. Police and security authority.
- Sec. 404. International activities.
- Sec. 405. Education and outreach.
- Sec. 406. Programmatic planning report.
- Sec. 407. Assessments by the National Research Council.

- Sec. 408. Hollings Manufacturing Extension Partnership.
- Sec. 409. Elimination of obsolete reports.
- Sec. 410. Modifications to grants and cooperative agreements.

Subtitle B—Innovative Approaches to Technology Transfer

- Sec. 421. Innovative approaches to technology transfer.

TITLE V—NETWORKING AND INFORMATION TECHNOLOGY RESEARCH AND DEVELOPMENT

- Sec. 501. Short title.
- Sec. 502. Program planning and coordination.
- Sec. 503. Large-scale research in areas of national importance.
- Sec. 504. Cyber-physical systems.
- Sec. 505. Cloud computing services for research.
- Sec. 506. National Coordination Office.
- Sec. 507. Improving networking and information technology education.
- Sec. 508. Conforming and technical amendments.

1 **TITLE I—NATIONAL SCIENCE**
 2 **FOUNDATION**

3 **SEC. 101. FINDINGS.**

4 Congress finds the following:

5 (1) The Foundation has made major contribu-
 6 tions for more than 50 years to strengthen and sus-
 7 tain the Nation’s academic research enterprise.

8 (2) The economic strength and national security
 9 of the United States, and the quality of life of all
 10 Americans, are grounded in the Nation’s scientific
 11 and technological capabilities.

12 (3) The Foundation carries out important func-
 13 tions in supporting basic research in all science and
 14 engineering disciplines and in supporting science,
 15 mathematics, engineering, and technology education
 16 at all levels.

1 (4) The research and education activities of the
2 Foundation promote the discovery, integration, dis-
3 semination, and application of new knowledge in
4 service to society and prepare future generations of
5 scientists, mathematicians, and engineers who will
6 be necessary to ensure America's leadership in the
7 global marketplace.

8 (5) The Foundation is charged with the respon-
9 sibilities—

10 (A) to develop and encourage the pursuit
11 of a national policy for the promotion of basic
12 research and education in the sciences;

13 (B) to initiate, support, and conduct basic
14 scientific research and to appraise the impact of
15 research upon industrial development and the
16 general welfare;

17 (C) to initiate, support, and conduct sci-
18 entific research activities in connection with
19 matters relating to the national defense, at the
20 request of the Secretary of Defense;

21 (D) to award scholarships and graduate
22 fellowships in the sciences;

23 (E) to foster the interchange of scientific
24 information among scientists;

1 (F) to evaluate scientific research pro-
2 grams undertaken by agencies of the Federal
3 Government, and to correlate the Foundation's
4 scientific research with those undertaken by in-
5 dividuals and by public and private research
6 groups;

7 (G) to establish such special commissions
8 as the Board may deem necessary; and

9 (H) to maintain a register of scientific and
10 technical personnel in the United States.

11 (6) The emerging global economic, scientific,
12 and technical environment challenges long-standing
13 assumptions about domestic and international policy,
14 requiring the Foundation to play a more proactive
15 role in sustaining the competitive advantage of the
16 United States through superior research capabilities.

17 (7) Commercial application of the results of
18 Federal investment in basic and computing science
19 is consistent with longstanding United States tech-
20 nology transfer policy for cybersecurity and other
21 homeland security applications, because of the ur-
22 gent needs of commercial, academic, and individual
23 users as well as the Federal and State Governments.

1 **SEC. 102. POLICY OBJECTIVES.**

2 In allocating resources made available under this sub-
3 title, the Foundation shall have the following policy objec-
4 tives:

5 (1) To strengthen the Nation's lead in science
6 and technology by—

7 (A) increasing the national investment in
8 general scientific research and increasing in-
9 vestment in strategic areas vital to the national
10 interest;

11 (B) balancing the Nation's research port-
12 folio among the life sciences, mathematics, the
13 physical sciences, computer and information
14 science, geosciences, engineering, and social, be-
15 havioral, and economic sciences, all of which are
16 important for the continued development of en-
17 abling technologies necessary for sustained
18 international competitiveness;

19 (C) expanding the pool of scientists and
20 engineers in the United States;

21 (D) modernizing the Nation's research in-
22 frastructure; and

23 (E) establishing and maintaining coopera-
24 tive international relationships with premier re-
25 search institutions.

26 (2) To increase overall workforce skills by—

1 (A) improving the quality of and access to
2 mathematics and science education, particularly
3 in kindergarten through grade 12; and

4 (B) expanding STEM training opportuni-
5 ties at institutions of higher education.

6 (3) To strengthen innovation by expanding the
7 focus of competitiveness and innovation policy at the
8 regional and local level.

9 **SEC. 103. DEFINITIONS.**

10 In this title:

11 (1) BOARD.—The term “Board” means the Na-
12 tional Science Board.

13 (2) DIRECTOR.—The term “Director” means
14 the Director of the Foundation.

15 (3) FOUNDATION.—The term “Foundation”
16 means the National Science Foundation established
17 under section 2 of the National Science Foundation
18 Act of 1950 (42 U.S.C. 1861).

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

23 (5) STATE.—The term “State” means one of
24 the several States, the District of Columbia, the
25 Commonwealth of Puerto Rico, the Virgin Islands,

1 Guam, American Samoa, the Commonwealth of the
2 Northern Mariana Islands, or any other territory or
3 possession of the United States.

4 (6) STEM.—The term “STEM” means science,
5 technology, engineering, and mathematics.

6 (7) UNITED STATES.—The term “United
7 States” means the several States, the District of Co-
8 lumbia, the Commonwealth of Puerto Rico, the Vir-
9 gin Islands, Guam, American Samoa, the Common-
10 wealth of the Northern Mariana Islands, and any
11 other territory or possession of the United States.

12 **SEC. 104. GREATER ACCOUNTABILITY IN FEDERAL FUND-**
13 **ING FOR RESEARCH.**

14 (a) STANDARD FOR AWARD OF GRANTS.—The Foun-
15 dation may award Federal funding for basic research and
16 education in the sciences through a new research grant
17 or cooperative agreement only if an affirmative determina-
18 tion is made under subsection (b) and a written justifica-
19 tion relating thereto is published under subsection (c).

20 (b) DETERMINATION.—A determination referred to
21 in subsection (a) is a determination by the Director as
22 to why the research grant or cooperative agreement—

23 (1) is in the national interest;

24 (2) is worthy of Federal funding; and

25 (3) achieves one or more of the following goals:

1 (A) Increased economic competitiveness of
2 the United States.

3 (B) Advancement of the health and welfare
4 of the American public.

5 (C) Development of a STEM workforce
6 and increased public scientific literacy in the
7 United States.

8 (D) Increased partnerships between aca-
9 demia and industry in the United States.

10 (E) Promotion of the progress of science in
11 the United States.

12 (F) Support for the national defense.

13 (c) WRITTEN JUSTIFICATION.—Prior to any award
14 of Federal funding described in subsection (a), the Foun-
15 dation shall publish on its public website a written jus-
16 tification relating to the determination under subsection
17 (b), along with the name of the employee or employees
18 who made the determination and any other information
19 about the research proposal the Director considers appro-
20 priate.

21 (d) IMPLEMENTATION.—A determination under sub-
22 section (b) shall be made after a research grant or cooper-
23 ative agreement proposal has satisfied the Foundation's
24 reviews for Merit and Broader Impacts.

1 (e) EMPLOYEE TRAINING.—The Director shall en-
2 sure that employees of the Foundation are aware of the
3 restriction in subsection (a), and that the employees are
4 trained in how to make a determination and provide writ-
5 ten justification as required under this section.

6 (f) ANNUAL AUDITS.—The Director shall ensure that
7 the standard in subsection (a) is properly applied by an
8 annual audit of the research grants and cooperative agree-
9 ments awarded by the Foundation for the previous fiscal
10 year. The Director shall annually report the results of this
11 audit to the Committee on Science, Space, and Technology
12 of the House of Representatives and the Committee on
13 Commerce, Science, and Transportation of the Senate by
14 February of the following fiscal year.

15 **SEC. 105. SOCIAL AND BEHAVIORAL SCIENCES.**

16 A directorate of the Foundation other than the Direc-
17 torate for Social, Behavioral, and Economic Sciences may
18 fund social and behavioral science research focused on its
19 mission areas if such research is determined to be a higher
20 priority than other research in that directorate's mission
21 portfolio.

22 **SEC. 106. OBLIGATION OF MAJOR RESEARCH EQUIPMENT**
23 **AND FACILITIES CONSTRUCTION FUNDS.**

24 No funds may be obligated for Major Research
25 Equipment and Facilities Construction for the Foundation

1 until 30 days after the report required with respect to each
2 such fiscal year under section 14(a)(2) of the National
3 Science Foundation Authorization Act of 2002 (42 U.S.C.
4 1862n-4(a)(2)) is transmitted to the Congress.

5 **SEC. 107. GRADUATE STUDENT SUPPORT.**

6 Section 510(b) of the America COMPETES Reau-
7 thorization Act of 2010 (42 U.S.C. 1869 note) is amended
8 to read as follows:

9 “(b) EQUAL TREATMENT OF IGERT AND GRF.—

10 “(1) RATE OF FUNDING INCREASES.—For any
11 fiscal year, the Director may only increase funding
12 for the Foundation’s Graduate Research Fellowship
13 program (or any successor thereto) over the previous
14 fiscal year’s funding level at the same rate as a cor-
15 responding funding increase for the Foundation’s
16 Integrative Graduate Education and Research
17 Traineeship program (or any successor thereto).

18 “(2) ESSENTIAL ELEMENTS OF IGERT.—The
19 essential elements of the Foundation’s Integrative
20 Graduate Education and Research Traineeship pro-
21 gram (or any successor thereto) shall be maintained,
22 including—

23 “(A) collaborative research that transcends
24 traditional disciplinary boundaries to solve large

1 and complex research problems of significant
2 scientific and societal importance; and

3 “(B) providing students the opportunity to
4 become leaders in the science and engineering
5 of the future.”.

6 **SEC. 108. PROHIBITION.**

7 The Foundation may not implement any STEM edu-
8 cation program and activity changes proposed for the
9 Foundation in the budget for fiscal year 2014 transmitted
10 to Congress under section 1105(a) of title 31, United
11 States Code.

12 **SEC. 109. REVIEW OF EDUCATION PROGRAMS.**

13 (a) IN GENERAL.—The Director shall review the edu-
14 cation programs of the Foundation that are in operation
15 as of the date of enactment of this Act to determine—

16 (1) whether any of such programs duplicate tar-
17 get groups, services provided, fields of focus, or ob-
18 jectives; and

19 (2) how those programs are being evaluated
20 and assessed for outcome-oriented effectiveness.

21 (b) REPORT.—Not later than 1 year after the date
22 of enactment of this Act, and annually thereafter as part
23 of the annual budget submission to Congress, the Director
24 shall complete a report on the review carried out under
25 this section and shall submit the report to the Committee

1 on Science, Space, and Technology and the Committee on
2 Appropriations of the House of Representatives, and to
3 the Committee on Commerce, Science, and Transpor-
4 tation, the Committee on Health, Education, Labor, and
5 Pensions, and the Committee on Appropriations of the
6 Senate.

7 **SEC. 110. RECOMPETITION OF AWARDS.**

8 (a) FINDINGS.—The Congress finds that—

9 (1) the merit-reviewed competition of grant and
10 award proposals is a hallmark of the Foundation
11 grant and award making process;

12 (2) the majority of Foundation-funded
13 multiuser facilities have transitioned to five-year co-
14 operative agreements, and every five years the pro-
15 gram officer responsible for the facility makes a rec-
16 ommendation to the National Science Board as to
17 the renewal, recompetition, or termination of sup-
18 port for the facility; and

19 (3) requiring expiring awards to be recompeted
20 follows from the conviction that competition is the
21 process most likely to ensure the effective steward-
22 ship of Foundation funds for supporting research
23 and education.

24 (b) RECOMPETITION.—The Director shall ensure that
25 the system for recompetition of Maintenance and Oper-

1 ations of facilities, equipment and instrumentation is fair,
2 consistent, and transparent and is applied in a manner
3 that renews grants and awards in a timely manner. The
4 Director shall periodically evaluate whether the criteria of
5 the system are being applied in a manner that is trans-
6 parent, reliable, and valid.

7 **SEC. 111. SENSE OF THE CONGRESS REGARDING INDUSTRY**
8 **INVESTMENT IN STEM EDUCATION.**

9 It is the sense of Congress that—

10 (1) in order to bolster the STEM workforce
11 pipeline, many industry sectors are becoming in-
12 volved in K-12 initiatives and supporting under-
13 graduate and graduate work in STEM subject areas
14 and fields;

15 (2) partnerships with education providers,
16 STEM focused competitions, and other opportunities
17 have become important pieces of private sector ef-
18 forts to strengthen the STEM workforce;

19 (3) understanding the work private sector orga-
20 nizations are undertaking in the STEM fields will
21 inform the Federal Government's role in STEM edu-
22 cation; and

23 (4) industry initiatives that support STEM edu-
24 cation should be encouraged and supported by the
25 Foundation.

1 **SEC. 112. MISREPRESENTATION OF RESEARCH RESULTS.**

2 (a) CERTIFICATION.—As a condition of receiving a
3 research grant from the Foundation, a principal investi-
4 gator shall sign a statement certifying that the findings
5 and conclusions of any article authored by such principal
6 investigator, using the results of the research conducted
7 under the grant, that is published in a peer-reviewed publi-
8 cation will be based on an accurate and truthful represen-
9 tation of the research results.

10 (b) INVESTIGATION.—The Inspector General of the
11 Foundation shall investigate suspected violations of a cer-
12 tification signed under subsection (a), and shall submit to
13 the Director the results of such investigation, along with
14 a recommendation with respect to whether a violation has
15 occurred.

16 (c) DETERMINATION.—

17 (1) IN GENERAL.—Based on the results of the
18 investigation conducted under subsection (b), the Di-
19 rector shall make a determination of whether the
20 principal investigator knowingly misrepresented the
21 results of research conducted with funding from the
22 Foundation.

23 (2) PUBLICATION.—The Director shall make
24 publicly available any determination made under
25 paragraph (1), which shall include the name of the
26 principal investigator.

1 (d) 10-YEAR BAN.—The Foundation may not, for a
2 period of 10 years, provide a research grant or grant ex-
3 tension to a principal investigator who has knowingly mis-
4 represented the results of research through—

5 (1) publication in a peer-reviewed publication;

6 (2) submission of data to the repository estab-
7 lished under section 306(a)(1); or

8 (3) an application for a research grant or grant
9 extension from the Foundation.

10 (e) APPEAL.—The Director shall establish a process
11 by which a principal investigator may appeal a determina-
12 tion made under subsection (c) and a ban under sub-
13 section (e). If the Director determines that the determina-
14 tion made under subsection (c) was not correct, the Direc-
15 tor shall make that correction publicly available. The Di-
16 rector may shorten the period of a ban under subsection
17 (d) based on information provided in the appeal process
18 under this subsection.

19 **SEC. 113. CITATIONS SUPPORTING RESEARCH GRANT AP-**
20 **PLICATIONS.**

21 A peer-reviewed research grant proposal application
22 to the Foundation may not include, with respect to a prin-
23 cipal investigator, more than 5 citations to articles pub-
24 lished by the principal investigator in a peer-reviewed pub-
25 lication. The Foundation may not consider more than 5

1 citations to such articles in determining whether to award
2 such a research grant.

3 **SEC. 114. RESEARCH GRANT CONDITIONS.**

4 The Foundation shall establish procedures to ensure
5 that—

6 (1) a research grant awarded by the Founda-
7 tion to a principal investigator does not duplicate the
8 scientific aims and scope of any grant awarded to
9 the same investigator by another Federal agency;

10 (2) a principal investigator includes in any ap-
11 plication for a research grant awarded by the Foun-
12 dation a list of all Federal research funding received
13 by the principal investigator, as well as any funding
14 that is being requested as of that time;

15 (3) unpublished research results used to sup-
16 port a grant proposal made to the Foundation do
17 not include any knowing misrepresentations of data;

18 (4) principal investigators who have received
19 more than 5 years of Foundation funding at any
20 point in their careers, other than graduate and post-
21 doctoral traineeship awards, are only awarded addi-
22 tional research grants by the Foundation if they will
23 be contributing substantial original research under
24 the grant; and

1 (5) principal investigators who receive Founda-
2 tion research grant funding under more than one
3 grant at the same time have sufficient resources to
4 conduct the proposed research under each of those
5 grants appropriately under the terms of the grant.

6 **SEC. 115. COMPUTING RESOURCES STUDY.**

7 Not later than 1 year after the date of enactment
8 of this Act, the Comptroller General shall transmit to the
9 Congress a report detailing the results of a study on the
10 use of computing resources funded by the Foundation at
11 institutions of higher education. Such study shall assess—

12 (1) efficiencies that can be achieved by using
13 shared computing resources for projects that have
14 similar scientific computing requirements or projects
15 where specialized software solutions could be shared
16 with other practitioners in the scientific community;

17 (2) efficiencies that can be achieved by using
18 shared hardware that can be cost effectively pro-
19 cured from cloud computing services;

20 (3) efficiencies that can be achieved by using
21 shared software from an open source repository or
22 platform; and

23 (4) cost savings that could be achieved by po-
24 tential sharing of computing resources across all
25 Foundation grants.

1 **SEC. 116. ALTERNATIVE RESEARCH FUNDING MODELS.**

2 (a) IN GENERAL.—The Director of the Office of
3 Science and Technology Policy, in consultation with the
4 Director of the Foundation, shall identify and conduct ap-
5 propriate pilot programs to validate alternative research
6 funding models, including scientific breakthrough prize
7 programs.

8 (b) REPORT.—Not later than 1 year after the date
9 of enactment of this Act, and annually thereafter as part
10 of the annual budget submission to Congress, the Director
11 of the Office of Science and Technology Policy shall trans-
12 mit to the Congress a report on programs identified and
13 conducted under subsection (a).

14 **SEC. 117. REPEAL OF SUSTAINABLE CHEMISTRY BASIC RE-**
15 **SEARCH PROGRAM.**

16 Section 509 of the America COMPETES Reauthor-
17 ization Act of 2010 (42 U.S.C. 1862p–3) is repealed.

18 **SEC. 118. ROTATING PERSONNEL.**

19 The Director shall ensure that the cost to the Foun-
20 dation of employing individuals who are not permanent
21 employees of the Foundation, including individuals em-
22 ployed pursuant to the Intergovernmental Personnel Act
23 of 1970 (42 U.S.C. 4701 note), does not exceed the cost
24 of employing permanent employees of the Foundation to
25 perform the same functions.

1 **SEC. 119. REPORT OF THE NSB TASK FORCE ON ADMINIS-**
2 **TRATIVE BURDEN.**

3 The National Science Board Task Force on Adminis-
4 trative Burden shall provide a report to Congress on its
5 activities, findings, and recommendations within 90 days
6 after the date of enactment of this Act.

7 **SEC. 120. STUDY TO EVALUATE FEDERAL SCIENTIFIC**
8 **FUNDING OF NON-UNITED STATES CITIZENS.**

9 Not later than 18 months after the date of enactment
10 of this Act, the Comptroller General shall transmit to the
11 Congress a report detailing the results of a study, based
12 on quantifiable metrics, on non-United States citizens, in-
13 cluding students, postdoctoral researchers, research asso-
14 ciates, and tenure-track faculty, funded by Federal science
15 agencies that—

16 (1) evaluates their importance to the United
17 States scientific enterprise;

18 (2) quantifies their economic value and impact
19 to the United States; and

20 (3) assesses the Nation's economic opportunity
21 cost of those who return to their home countries, in
22 particular, quantifying contributions to the scientific,
23 technological, industrial, and educational base of
24 their final country of residence.

1 **TITLE II—SCIENCE, TECH-**
2 **NOLOGY, ENGINEERING, AND**
3 **MATHEMATICS**

4 **SEC. 201. FINDINGS; SENSE OF CONGRESS.**

5 (a) FINDINGS.—Congress finds the following:

6 (1) According to the National Science Board's
7 Science and Engineering Indicators, the science and
8 engineering workforce has shown sustained growth
9 for more than half a century and workers with
10 science and engineering degrees tend to earn more
11 than other comparable workers.

12 (2) According to the Program for International
13 Student Assessment 2009 results, America lags be-
14 hind many other nations when it comes to STEM
15 education. American students rank 23d in science
16 and 31st in math.

17 (3) Junior Achievement USA and ING recently
18 found a decrease of 25 percent in the number of
19 teens interested in STEM careers.

20 (4) According to a 2007 report from the De-
21 partment of Labor, industries and firms dependent
22 upon a strong science and math workforce pipeline
23 have launched a variety of programs that target K-
24 12 students and undergraduate and graduate stu-
25 dents in STEM fields.

1 (5) While the Federal Government spends near-
2 ly \$3 billion annually on STEM education related
3 programs and activities, finding ways to improve
4 STEM education activities beyond the scope of the
5 Federal Government is key to the future technical
6 and economic competitiveness of our Nation.

7 (b) SENSE OF CONGRESS.—It is the sense of Con-
8 gress that—

9 (1) more must be done to ensure that Federal
10 investment in STEM education is going to provide
11 a substantial return;

12 (2) leveraging private and nonprofit invest-
13 ments in STEM education will be essential to
14 strengthening the Federal STEM portfolio;

15 (3) strengthening the Federal STEM portfolio
16 may result in program consolidations and termi-
17 nations, but those changes should be made based on
18 evidence with stakeholder input;

19 (4) the President’s fiscal year 2014 budget pro-
20 posal did not adequately explain proposed consolida-
21 tions and cuts in the Federal STEM portfolio and
22 did not utilize outside expertise in making those crit-
23 ical decisions, resulting in the need for Congress to
24 limit the Administration’s forward movement on that
25 proposal; and

1 (5) coordinating STEM programs and activities
2 across the Federal Government in order to limit du-
3 plication and engage stakeholders will strengthen the
4 results of our Federal STEM education programs
5 and activities and in turn strengthen the United
6 States economy.

7 **SEC. 202. STEM EDUCATION ADVISORY PANEL.**

8 (a) **ESTABLISHMENT.**—The President shall establish
9 or designate a STEM Education Advisory Panel that in-
10 corporates key stakeholders from the education and indus-
11 try sectors within the President’s Council of Advisors on
12 Science and Technology.

13 (b) **QUALIFICATIONS.**—The Advisory Panel estab-
14 lished or designated by the President under subsection (a)
15 shall consist primarily of members from academic institu-
16 tions and industry. Members of the Advisory Panel shall
17 be qualified to provide advice and information on STEM
18 education research, development, training, implementa-
19 tion, interventions, professional development, or workforce
20 needs or concerns. In selecting or designating an Advisory
21 Panel, the President may also seek and give consideration
22 to recommendations from the Congress, industry, the sci-
23 entific community (including the National Academy of
24 Sciences, scientific professional societies, and academia),

1 State and local governments, and other appropriate orga-
2 nizations.

3 (c) DUTIES.—The Advisory Panel shall advise the
4 President, the committee on STEM education established
5 under the National Science and Technology Council, and
6 the STEM Education Coordinating Office on matters re-
7 lating to STEM education, and shall each year provide
8 general guidance to every Federal agency with STEM edu-
9 cation programs or activities, including in the preparation
10 of requests for appropriations for activities related to
11 STEM education. The Advisory Panel shall also assess—

12 (1) trends and developments in STEM edu-
13 cation;

14 (2) progress made in STEM education;

15 (3) ways to encourage public private-partner-
16 ships to strengthen STEM education;

17 (4) ways to leverage private and nonprofit in-
18 vestments and utilize expertise resulting from
19 STEM-related competitions to help build the STEM
20 education and workforce pipeline;

21 (5) ways to incorporate workforce needs into
22 Federal STEM education programs;

23 (6) the management, coordination, implementa-
24 tion, and activities of the STEM Education Coordi-
25 nating Office and the committee on STEM edu-

1 cation established under the National Science and
2 Technology Council; and

3 (7) whether societal and workforce concerns are
4 adequately addressed by current Federal STEM
5 education programs and activities.

6 (d) REPORTS.—The Advisory Panel shall report, not
7 less frequently than once every 2 fiscal years, to the Presi-
8 dent and Congress on its assessments under subsection
9 (c) and its recommendations for ways to improve Federal
10 STEM education programs. The first report under this
11 subsection shall be submitted within 1 year after the date
12 of enactment of this Act.

13 (e) TRAVEL EXPENSES OF NON-FEDERAL MEM-
14 BERS.—Non-Federal members of the Advisory Panel,
15 while attending meetings of the Advisory Panel or while
16 otherwise serving at the request of the head of the Advi-
17 sory Panel away from their homes or regular places of
18 business, may be allowed travel expenses, including per
19 diem in lieu of subsistence, as authorized by section 5703
20 of title 5, United States Code, for individuals in the Gov-
21 ernment serving without pay. Nothing in this subsection
22 shall be construed to prohibit members of the Advisory
23 Panel who are officers or employees of the United States
24 from being allowed travel expenses, including per diem in
25 lieu of subsistence, in accordance with existing law.

1 **SEC. 203. COMMITTEE ON STEM EDUCATION.**

2 Section 101 of the America COMPETES Reauthor-
3 ization Act of 2010 (42 U.S.C. 6621) is amended to read
4 as follows:

5 **“SEC. 101. COORDINATION OF FEDERAL STEM EDUCATION.**

6 “(a) MAINTENANCE OF THE COMMITTEE ON STEM
7 EDUCATION.—The Director of the Office of Science and
8 Technology Policy shall maintain the committee on STEM
9 education established under the National Science and
10 Technology Council, including the Office of Management
11 and Budget, National Science Foundation, the Depart-
12 ment of Energy, the National Aeronautics and Space Ad-
13 ministration, the National Oceanic and Atmospheric Ad-
14 ministration, the National Institute of Standards and
15 Technology, and all other Federal agencies with STEM
16 education programs or activities.

17 “(b) RESPONSIBILITIES.—The committee described
18 in subsection (a) shall develop recommendations for the
19 STEM Education Coordinating office to consider. These
20 recommendations shall focus on—

21 “(1) priority areas for Federal funding in
22 STEM education, which may include student en-
23 gagement, student retention, informal education,
24 and teaching;

1 “(2) access to innovations and expertise derived
2 from agency activities across the Federal Govern-
3 ment;

4 “(3) significant links among K-12 education,
5 higher education, and industry; and

6 “(4) the teaching of innovation and entrepre-
7 neurship as part of STEM education activities.

8 “(c) REPORT.—The Director of Office of Science and
9 Technology Policy shall transmit a report annually to Con-
10 gress at the time of the President’s budget request de-
11 scribing the work, findings, and recommendations of the
12 committee described in subsection (a).”.

13 **SEC. 204. STEM EDUCATION COORDINATING OFFICE.**

14 (a) ESTABLISHMENT.—The Director of the Founda-
15 tion shall establish within the Directorate for Education
16 and Human Resources a STEM Education Coordinating
17 Office, which shall have a Director.

18 (b) RESPONSIBILITIES.—The STEM Education Co-
19 ordinating Office shall—

20 (1) coordinate the STEM education activities
21 and programs of the Federal Government, including
22 at the National Science Foundation, the Department
23 of Energy, the National Aeronautics and Space Ad-
24 ministration, the National Oceanic and Atmospheric
25 Administration, the National Institute of Standards

1 and Technology, the Environmental Protection
2 Agency, and any other Federal agency with STEM
3 education programs or activities;

4 (2) coordinate STEM education activities and
5 programs with the Office of Management and Budg-
6 et;

7 (3) review STEM education activities and pro-
8 grams to ensure they are not redundant, overlapping
9 or duplicative of similar efforts within the Federal
10 Government;

11 (4) periodically update and maintain the inven-
12 tory of federally sponsored STEM education pro-
13 grams and activities conducted by the committee on
14 STEM education established under the National
15 Science and Technology Council, including docu-
16 mentation of assessments of the outcome-oriented ef-
17 fectiveness of such programs and activities and
18 metrics used to evaluate those programs and activi-
19 ties;

20 (5) provide technical and administrative support
21 to the committee on STEM education established
22 under the National Science and Technology Council
23 and the Advisory Panel established under section
24 202; and

1 (6) serve as the point of contact on Federal
2 STEM education activities for government agencies,
3 academia, industry, professional societies, State
4 STEM education programs, interested citizen
5 groups, and other STEM stakeholders to exchange
6 technical and programmatic information.

7 (c) 3-YEAR STRATEGIC PLAN.—

8 (1) IN GENERAL.—The STEM Education Co-
9 ordinating Office shall—

10 (A) at the time of the President’s budget
11 request, and every 3 years thereafter, in con-
12 sultation with Federal agencies having STEM
13 education programs or activities, the committee
14 on STEM education established under the Na-
15 tional Science and Technology Council, and the
16 Advisory Panel established under section 202,
17 update the Federal Government STEM edu-
18 cation strategic plan established in May 2013
19 by the committee on STEM education estab-
20 lished under the National Science and Tech-
21 nology Council; and

22 (B) coordinate the implementation of such
23 plan through such agencies.

24 (2) CONTENTS.—The strategic plan shall—

1 (A) specify and prioritize annual and long-
2 term objectives, including a description of the
3 role of each agency in supporting programs and
4 activities designed to achieve the objectives;

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

8 (C) describe the approaches that will be
9 taken by each agency to assess the effectiveness
10 of its STEM education programs and activities.

11 (d) REPORT.—The Director of the STEM Education
12 Coordinating Office shall transmit a report annually to
13 Congress at the time of the President’s budget request.
14 The annual report shall include—

15 (1) a description of the STEM education pro-
16 grams and activities across the Federal Government
17 for the previous and current fiscal years, and the
18 proposed programs and activities under the Presi-
19 dent’s budget request, of every Federal agency with
20 STEM education programs or activities;

21 (2) an evaluation of the extent of duplication
22 and fragmentation of the programs and activities de-
23 scribed under paragraph (1), and any recommenda-
24 tions for consolidations or terminations to remedy
25 those problems;

1 (3) a description of ways the Federal Govern-
2 ment is leveraging private and nonprofit investments
3 and utilizing expertise resulting from STEM-related
4 competitions to build the STEM education workforce
5 pipeline; and

6 (4) a description of the progress made in car-
7 rying out the 3-year strategic plan, including a de-
8 scription of the outcome of any program assessments
9 completed in the previous year, and any changes
10 made to that plan since the previous annual report.

11 (e) RESPONSIBILITIES OF NSF.—The Director of the
12 National Science Foundation shall encourage and monitor
13 the efforts of the STEM Education Coordinating Office
14 to ensure that the strategic plan under subsection (c) is
15 implemented effectively and that the objectives of the stra-
16 tegic plan are met.

17 **TITLE III—OFFICE OF SCIENCE**
18 **AND TECHNOLOGY POLICY**

19 **SEC. 301. REGULATORY EFFICIENCY.**

20 (a) IN GENERAL.—The Director of the Office of
21 Science and Technology Policy shall establish a working
22 group under the authority of the National Science and
23 Technology Council, to include the Office of Management
24 and Budget The working group shall be responsible for
25 reviewing Federal regulations affecting research and re-

1 search universities and making recommendations on how
2 to—

3 (1) harmonize, streamline, and eliminate dupli-
4 cative Federal regulations and reporting require-
5 ments; and

6 (2) minimize the regulatory burden on United
7 States institutions of higher education performing
8 federally funded research while maintaining account-
9 ability for Federal tax dollars.

10 (b) REPORT.—Not later than 1 year after the date
11 of enactment of this Act, and annually thereafter for 3
12 years, the Director shall report to the Committee on
13 Science, Space, and Technology of the House of Rep-
14 resentatives and the Committee on Commerce, Science,
15 and Transportation of the Senate on what steps have been
16 taken to carry out the recommendations of the working
17 group established under subsection (a).

18 **SEC. 302. PUBLIC ACCESS TO RESEARCH ARTICLES AND**

19 **DATA.**

20 (a) PUBLIC ACCESS POLICIES AND PROCEDURES.—

21 (1) ESTABLISHMENT.—Not later than 18
22 months after the date of enactment of this Act, the
23 National Science and Technology Council, in con-
24 sultation with the Federal science agencies, shall es-
25 tablish policies, procedures, and standards for the

1 Federal science agencies to enable archiving and re-
2 trieval covered material in digital form for public
3 availability in perpetuity.

4 (2) REQUIREMENTS.—Such policies, proce-
5 dures, and standards shall—

6 (A) use existing information technology in-
7 frastructure to the extent practicable, including
8 infrastructure of the National Center for Bio-
9 technology Information, the National Center for
10 Atmospheric Research, and the private sector
11 that facilitate public access to covered material;

12 (B) minimize the cost of storing, archiving,
13 and retrieving articles and data;

14 (C) minimize the burden of providing arti-
15 cles and data archiving, and of retrieving arti-
16 cles and data; and

17 (D) facilitate maximum access to covered
18 material by clearly linking articles and data.

19 (3) STAKEHOLDER INPUT.—In developing poli-
20 cies, procedures, and standards under paragraph
21 (1), the National Science and Technology Council
22 shall use a transparent process for soliciting views
23 from stakeholders, including federally funded re-
24 searchers, institutions of higher education, libraries,

1 publishers, users of federally funded research re-
2 sults, and civil science society groups.

3 (b) GRANT RECIPIENT REQUIREMENTS.—A recipient
4 of a research grant made by a Federal science agency shall
5 make, or enable others on their behalf to make, covered
6 material associated with such grant available consistent
7 with the policies, procedures, and standards established
8 under subsection (a).

9 (c) FEDERAL SCIENCE AGENCY REQUIREMENTS.—
10 In implementing the policies, procedure, and standards es-
11 tablished pursuant to subsection (a), each Federal science
12 agency shall provide for—

13 (1) submission of, or linking to, an electronic
14 version of covered material by or on behalf of recipi-
15 ents of research grants made by the agency;

16 (2) free online public access to such covered
17 material—

18 (A) in the case of a research article, not
19 later than 24 months after publication of the
20 research article in a peer-reviewed publication;
21 and

22 (B) in the case of data used to support the
23 findings and conclusions of such article, not
24 later than 60 days after the article is published
25 in a peer-reviewed publication;

1 (3) a searchable archive for long-term preserva-
2 tion and productive use of covered material;

3 (4) production of an online bibliography of all
4 research papers that are publicly accessible in its re-
5 pository, with each entry linking to the cor-
6 responding free online full text; and

7 (5) inclusion in its repository of all data that is
8 used directly or indirectly by the agency to support
9 the promulgation of a Federal regulation.

10 (d) REVIEW.—At least once every 5 years, the Na-
11 tional Science and Technology Council shall review the
12 policies, procedures, and standards established under sub-
13 section (a) and revise such policies, procedures, and stand-
14 ards as appropriate.

15 (e) EXTENSION.—Each Federal science agency may
16 extend the time period specified in subsection (c)(2) by
17 6 to 12 months, in consultation with the stakeholders de-
18 scribed in subsection (a)(3), if the agency head, or des-
19 ignee, determines that the scientific field and stakeholders
20 described in subsection (a)(3) will be uniquely harmed
21 without such extension.

22 (f) PATENT OR COPYRIGHT LAW.—Except as pro-
23 vided in this section, nothing in this section shall be con-
24 strued to affect any right under the provisions of title 17
25 or title 35, United States Code.

1 (g) DEFINITIONS.—For purposes of this section:

2 (1) COVERED MATERIAL.—The term “covered
3 material” means—

4 (A) a manuscript of an article accepted for
5 publication in a peer-reviewed publication that
6 results from research funded in whole or in ma-
7 jority part by a grant from a Federal science
8 agency; and

9 (B) data that was used to support the
10 findings and conclusions of such article, except
11 for data that is protected from disclosure under
12 section 552 of title 5, United States Code.

13 (2) DATA.—The term “data” includes raw
14 data, computer code, and algorithms, but does not
15 include—

16 (A) commercially available software used
17 to analyze the data or code;

18 (B) preliminary work and analyses;

19 (C) drafts of scientific papers not accepted
20 or intended for publication; or

21 (D) plans for future research.

22 (3) FEDERAL SCIENCE AGENCY.—The term
23 “Federal science agency” means an Executive agen-
24 cy, as defined in section 105 of title 5, United States

1 Code, that is a member of the National Science and
2 Technology Council.

3 (4) PEER-REVIEWED PUBLICATION.—The term
4 “peer-reviewed publication” means a publication for
5 which articles are assigned to at least 1 external
6 viewer to assess the validity of the articles’ scientific
7 findings and conclusions.

8 **TITLE IV—INNOVATION AND**
9 **TECHNOLOGY TRANSFER**
10 **Subtitle A—NIST Reauthorization**

11 **SEC. 401. STANDARDS AND CONFORMITY ASSESSMENT AND**
12 **OTHER TRANSACTION AUTHORITY.**

13 Section 2 of the National Institute of Standards and
14 Technology Act (15 U.S.C. 272) is amended—

15 (1) in subsection (b)—

16 (A) in the matter preceding paragraph (1),
17 by striking “authorized to take” and inserting
18 “authorized to serve as the President’s principal
19 adviser on standards policy pertaining to the
20 Nation’s technological competitiveness and in-
21 novation ability and to take”;

22 (B) in paragraph (3), by striking “compare
23 standards” and all that follows through “Fed-
24 eral Government” and inserting “facilitate

1 standards-related information sharing and co-
2 operation between Federal agencies”;

3 (C) by striking paragraph (4) and insert-
4 ing the following:

5 “(4) to enter into and perform such contracts,
6 cooperative research and development arrangements,
7 grants, cooperative agreements, leases, or other
8 transactions as may be necessary in the conduct of
9 its work and on such terms as it may consider ap-
10 propriate in furtherance of the purposes of this
11 Act;” and

12 (D) in paragraph (13), by striking “Fed-
13 eral, State, and local” and all that follows
14 through “private sector” and inserting “tech-
15 nical standards activities and conformity assess-
16 ment activities of Federal, State, and local gov-
17 ernments with private sector”; and

18 (2) in subsection (c)—

19 (A) in paragraph (21), by striking “and”
20 after the semicolon;

21 (B) by redesignating paragraph (22) as
22 paragraph (25); and

23 (C) by inserting after paragraph (21) the
24 following:

1 “(22) participate in and support scientific and
2 technical conferences;

3 “(23) collect and retain fees for conferences
4 and use such fees to pay for expenses of such con-
5 ferences, notwithstanding section 1345 of title 31,
6 United States Code;

7 “(24) perform pre-competitive measurement
8 science and technology research in partnership with
9 institutions of higher education and industry to pro-
10 mote United States industrial competitiveness; and”.

11 **SEC. 402. VISITING COMMITTEE ON ADVANCED TECH-**
12 **NOLOGY.**

13 Section 10 of the National Institute of Standards and
14 Technology Act (15 U.S.C. 278) is amended—

15 (1) in subsection (a)—

16 (A) by striking “15 members” and insert-
17 ing “not fewer than 9 members”;

18 (B) by striking “at least 10” and inserting
19 “at least three-fifths”; and

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

21 “The Committee may consult with the National
22 Research Council in making recommendations
23 regarding general policy for the Institute.”; and

24 (2) in subsection (h)(1), by striking “, including
25 the Program established under section 28,”.

1 **SEC. 403. POLICE AND SECURITY AUTHORITY.**

2 Section 15 of the National Institute of Standards and
3 Technology Act (15 U.S.C. 278e) is amended—

4 (1) by striking “of the Government; and” and
5 inserting “of the Government;”; and

6 (2) by striking “United States Code.” and in-
7 serting “United States Code; and (i) for the protec-
8 tion of Institute buildings and other plant facilities,
9 equipment, and property, and of employees, associ-
10 ates, visitors, or other persons located therein or as-
11 sociated therewith, notwithstanding any other provi-
12 sion of law, the direction of such of the officers and
13 employees of the Institute as the Secretary considers
14 necessary in the public interest to carry firearms
15 while in the conduct of their official duties, and the
16 authorization of employees of contractors and sub-
17 contractors of the Institute who are engaged in the
18 protection of property owned by the United States,
19 and located at facilities owned by, leased by, used
20 by, or under the control of the United States, to
21 carry firearms while in the conduct of their official
22 duties, and, under regulations prescribed by the Sec-
23 retary and approved by the Attorney General, the
24 authorization of officers and employees of the Insti-
25 tute and of its contractors and subcontractors au-
26 thorized to carry firearms to arrest without warrant

1 for any offense against the United States committed
2 in their presence, or for any felony cognizable under
3 the laws of the United States if they have reasonable
4 grounds to believe that the person to be arrested has
5 committed or is committing such felony, provided
6 that such authority to make arrests may be exer-
7 cised only while guarding and protecting buildings
8 and other plant facilities, equipment, and property
9 owned or leased by, used by, or under the control of
10 the United States under the administration and con-
11 trol of the Secretary”.

12 **SEC. 404. INTERNATIONAL ACTIVITIES.**

13 Section 17(a) of the National Institute of Standards
14 and Technology Act (15 U.S.C. 278g(a)) is amended—

15 (1) by striking “financial assistance,” and in-
16 sserting “financial and logistical assistance,”; and

17 (2) by adding at the end the following: “Finan-
18 cial and logistical assistance may include transpor-
19 tation to and from the Institute of foreign dig-
20 nitaries and representatives of foreign national me-
21 trolgy institutes.”

22 **SEC. 405. EDUCATION AND OUTREACH.**

23 (a) IN GENERAL.—The National Institute of Stand-
24 ards and Technology Act is (15 U.S.C. 271 et seq.) is

1 amended by striking sections 18, 19, and 19A and insert-
2 ing the following:

3 **“SEC. 18. EDUCATION AND OUTREACH.**

4 “(a) IN GENERAL.—The Director may support, pro-
5 mote, and coordinate activities and efforts to enhance pub-
6 lic awareness and understanding of measurement sciences,
7 standards, and technology by the general public, industry,
8 and academia in support of the Institute’s mission.

9 “(b) RESEARCH FELLOWSHIPS.—

10 “(1) IN GENERAL.—The Director may award
11 research fellowships and other forms of financial and
12 logistical assistance, including direct stipend awards,
13 to—

14 “(A) students at institutions of higher edu-
15 cation within the United States who show
16 promise as present or future contributors to the
17 mission of the Institute; and

18 “(B) United States citizens for research
19 and technical activities of the Institute.

20 “(2) SELECTION.—The Director shall select
21 persons to receive such fellowships and assistance on
22 the basis of ability and of the relevance of the pro-
23 posed work to the mission and programs of the In-
24 stitute.

1 “(3) DEFINITION.—For the purposes of this
2 subsection, financial and logistical assistance in-
3 cludes, notwithstanding section 1345 of title 31,
4 United States Code, or any contrary provision of
5 law, temporary housing and transportation to and
6 from the Institute facilities.

7 “(c) POST-DOCTORAL FELLOWSHIP PROGRAM.—The
8 Director shall establish and conduct a post-doctoral fellow-
9 ship program, subject to the availability of appropriations,
10 that shall include not less than 20 nor more than 120 new
11 fellows per fiscal year. In evaluating applications for fel-
12 lowships under this subsection, the Director shall give con-
13 sideration to the goal of promoting the participation of
14 underrepresented minorities in research areas supported
15 by the Institute.”.

16 (b) PROHIBITION.—

17 (1) IN GENERAL.—The National Institute of
18 Standards and Technology may not implement any
19 STEM education program and activity changes pro-
20 posed for the Institute in the budget for fiscal year
21 2014 transmitted to Congress under section 1105(a)
22 of title 31, United States Code.

23 (2) DEFINITION.—The term “STEM” means
24 science, technology, engineering, and mathematics.

1 **SEC. 406. PROGRAMMATIC PLANNING REPORT.**

2 Section 23(d) of the National Institute of Standards
3 and Technology Act (15 U.S.C. 278i(d)) is amended by
4 adding at the end the following: “The 3-year pro-
5 grammatic planning document shall also describe how the
6 Director is addressing recommendations from the Visiting
7 Committee on Advanced Technology established under
8 section 10.”.

9 **SEC. 407. ASSESSMENTS BY THE NATIONAL RESEARCH**
10 **COUNCIL.**

11 Section 24 of the National Institute of Standards and
12 Technology Act (15 U.S.C. 278j) is amended to read as
13 follows:

14 **“SEC. 24. ASSESSMENTS BY THE NATIONAL RESEARCH**
15 **COUNCIL.**

16 “(a) IN GENERAL.—The Institute shall contract with
17 the National Research Council to perform and report on
18 assessments of the technical quality and impact of the
19 work conducted at Institute laboratories.

20 “(b) SCHEDULE.—Individual assessments shall be
21 completed biennially by conducting annual assessments of
22 at least 3 laboratories.

23 “(c) SUMMARY REPORT.—In the second year of each
24 biennial period under subsection (b), the Institute shall
25 contract with the National Research Council to prepare

1 a report that summarizes the findings common across the
2 individual assessment reports.

3 “(d) **ADDITIONAL ASSESSMENTS.**—The Institute, at
4 the discretion of the Director, also may contract with the
5 National Research Council to conduct additional assess-
6 ments of Institute programs and projects that involve col-
7 laboration across the Institute laboratories and centers
8 and assessments of selected scientific and technical topics.

9 “(e) **CONSULTATION WITH VISITING COMMITTEE ON**
10 **ADVANCED TECHNOLOGY.**—The National Research Coun-
11 cil may consult with the Visiting Committee on Advanced
12 Technology established under section 10 in performing the
13 assessments under this section.

14 “(f) **REPORTS.**—Not later than 30 days after the
15 completion of each assessment, the Institute shall transmit
16 the report on such assessment to the Committee on
17 Science, Space, and Technology of the House of Rep-
18 resentatives and the Committee on Commerce, Science,
19 and Transportation of the Senate.”.

20 **SEC. 408. HOLLINGS MANUFACTURING EXTENSION PART-**
21 **nership.**

22 Section 25 of the National Institute of Standards and
23 Technology Act (15 U.S.C. 278k) is amended to read as
24 follows:

1 **“SEC. 25. HOLLINGS MANUFACTURING EXTENSION PART-**
2 **nership.**

3 “(a) ESTABLISHMENT AND PURPOSE.—

4 “(1) IN GENERAL.—The Secretary, through the
5 Director and, if appropriate, through other officials,
6 shall provide assistance for the creation and support
7 of manufacturing extension centers, to be known as
8 the ‘Hollings Manufacturing Extension Centers’, for
9 the transfer of manufacturing technology and best
10 business practices (in this Act referred to as the
11 ‘Centers’). The program under this section shall be
12 known as the ‘Hollings Manufacturing Extension
13 Partnership’.

14 “(2) AFFILIATIONS.—Such Centers shall be af-
15 filiated with any United States-based public or non-
16 profit institution or organization, or group thereof,
17 that applies for and is awarded financial assistance
18 under this section.

19 “(3) OBJECTIVE.—The objective of the Centers
20 is to enhance competitiveness, productivity, and
21 technological performance in United States manufac-
22 turing through—

23 “(A) the transfer of manufacturing tech-
24 nology and techniques developed at the Insti-
25 tute to Centers and, through them, to manufac-
26 turing companies throughout the United States;

1 “(B) the participation of individuals from
2 industry, institutions of higher education, State
3 governments, other Federal agencies, and, when
4 appropriate, the Institute in cooperative tech-
5 nology transfer activities;

6 “(C) efforts to make new manufacturing
7 technology and processes usable by United
8 States-based small and medium-sized compa-
9 nies;

10 “(D) the active dissemination of scientific,
11 engineering, technical, and management infor-
12 mation about manufacturing to industrial firms,
13 including small and medium-sized manufac-
14 turing companies;

15 “(E) the utilization, when appropriate, of
16 the expertise and capability that exists in Fed-
17 eral laboratories other than the Institute; and

18 “(F) the provision to community colleges
19 of information about the job skills needed in
20 small and medium-sized manufacturing busi-
21 nesses in the regions they serve.

22 “(b) ACTIVITIES.—The activities of the Centers shall
23 include—

24 “(1) the establishment of automated manufac-
25 turing systems and other advanced production tech-

1 nologies, based on Institute-supported research, for
2 the purpose of demonstrations and technology trans-
3 fer; and

4 “(2) the active transfer and dissemination of re-
5 search findings and Center expertise to a wide range
6 of companies and enterprises, particularly small and
7 medium-sized manufacturers.

8 “(c) OPERATIONS.—

9 “(1) FINANCIAL SUPPORT.—The Secretary may
10 provide financial support to any Center created
11 under subsection (a) for a period not to exceed 6
12 years. The Secretary may not provide to a Center
13 more than 50 percent of the capital and annual op-
14 erating and maintenance funds required to create
15 and maintain such Center.

16 “(2) REGULATIONS.—The Secretary shall im-
17 plement, review, and update the sections of the Code
18 of Federal Regulations related to this section at
19 least once every 3 years.

20 “(3) APPLICATION.—

21 “(A) IN GENERAL.—Any nonprofit institu-
22 tion, or consortium thereof, may submit to the
23 Secretary an application for financial support
24 under this section, in accordance with the pro-
25 cedures established by the Secretary.

1 “(B) COST-SHARING.—In order to receive
2 assistance under this section, an applicant for
3 financial assistance under subparagraph (A)
4 shall provide adequate assurances that non-
5 Federal assets obtained from the applicant and
6 the applicant’s partnering organizations will be
7 used as a funding source to meet not less than
8 50 percent of the costs incurred for the first 3
9 years and an increasing share for each of the
10 last 3 years. For purposes of the preceding sen-
11 tence, the costs incurred means the costs in-
12 curred in connection with the activities under-
13 taken to improve the competitiveness, manage-
14 ment, productivity, and technological perform-
15 ance of small and medium-sized manufacturing
16 companies.

17 “(C) AGREEMENTS WITH OTHER ENTI-
18 TIES.—In meeting the 50 percent requirement,
19 it is anticipated that a Center will enter into
20 agreements with other entities such as private
21 industry, institutions of higher education, and
22 State governments to accomplish programmatic
23 objectives and access new and existing resources
24 that will further the impact of the Federal in-

1 vestment made on behalf of small and medium-
2 sized manufacturing companies.

3 “(D) LEGAL RIGHTS.—Each applicant
4 under subparagraph (A) shall also submit a
5 proposal for the allocation of the legal rights as-
6 sociated with any invention which may result
7 from the proposed Center’s activities.

8 “(4) MERIT REVIEW.—The Secretary shall sub-
9 ject each such application to merit review. In mak-
10 ing a decision whether to approve such application
11 and provide financial support under this section, the
12 Secretary shall consider, at a minimum, the fol-
13 lowing:

14 “(A) The merits of the application, par-
15 ticularly those portions of the application re-
16 garding technology transfer, training and edu-
17 cation, and adaptation of manufacturing tech-
18 nologies to the needs of particular industrial
19 sectors.

20 “(B) The quality of service to be provided.

21 “(C) Geographical diversity and extent of
22 service area.

23 “(D) The percentage of funding and
24 amount of in-kind commitment from other
25 sources.

1 “(5) EVALUATION.—

2 “(A) IN GENERAL.—Each Center that re-
3 ceives financial assistance under this section
4 shall be evaluated during its third year of oper-
5 ation by an evaluation panel appointed by the
6 Secretary.

7 “(B) COMPOSITION.—Each such evalua-
8 tion panel shall be composed of private experts,
9 none of whom shall be connected with the in-
10 volved Center, and Federal officials.

11 “(C) CHAIR.—An official of the Institute
12 shall chair the panel.

13 “(D) PERFORMANCE MEASUREMENT.—
14 Each evaluation panel shall measure the in-
15 volved Center’s performance against the objec-
16 tives specified in this section.

17 “(E) POSITIVE EVALUATION.—If the eval-
18 uation is positive, the Secretary may provide
19 continued funding through the sixth year at de-
20 clining levels.

21 “(F) PROBATION.—The Secretary shall
22 not provide funding for the fourth through the
23 sixth years of a Center’s operation unless the
24 evaluation is positive. A Center that has not re-
25 ceived a positive evaluation by the evaluation

1 panel shall be notified by the panel of the defi-
2 ciencies in its performance and shall be placed
3 on probation for one year, after which time the
4 panel shall reevaluate the Center. If the Center
5 has not addressed the deficiencies identified by
6 the panel, or shown a significant improvement
7 in its performance, the Director shall conduct a
8 new competition to select an operator for the
9 Center or may close the Center.

10 “(G) ADDITIONAL FINANCIAL SUPPORT.—
11 After the sixth year, a Center may receive addi-
12 tional financial support under this section if it
13 has received a positive evaluation through an
14 independent review, under procedures estab-
15 lished by the Institute. Such an independent re-
16 view shall be required at least every two years
17 after the sixth year of operation. Funding re-
18 ceived for a fiscal year under this section after
19 the sixth year of operation shall not exceed one
20 third of the capital and annual operating and
21 maintenance costs of the Center under the pro-
22 gram.

23 “(6) PATENT RIGHTS.—The provisions of chap-
24 ter 18 of title 35, United States Code, shall apply,
25 to the extent not inconsistent with this section, to

1 the promotion of technology from research by Cen-
2 ters under this section except for contracts for such
3 specific technology extension or transfer services as
4 may be specified by statute or by the Director.

5 “(7) PROTECTION OF CENTER CLIENT CON-
6 FIDENTIAL INFORMATION.—Section 552 of title 5,
7 United States Code, shall apply to the following in-
8 formation obtained by the Federal Government on a
9 confidential basis in connection with the activities of
10 any participant involved in the Hollings Manufac-
11 turing Extension Partnership:

12 “(A) Information on the business operation
13 of any participant in a Hollings Manufacturing
14 Extension Partnership program or of a client of
15 a Center.

16 “(B) Trade secrets possessed by any client
17 of a Center.

18 “(8) ADVISORY BOARDS.—Each Center’s advi-
19 sory boards shall institute a conflict of interest pol-
20 icy, approved by the Director, that ensures the
21 Board represents local small and medium-sized man-
22 ufacturers in the Center’s region. Board Members
23 may not be current clients of the Center they serve,
24 may not serve as a vendor or provide services to the

1 Center, nor may they serve on more than one Cen-
2 ter's oversight board simultaneously.

3 “(d) ACCEPTANCE OF FUNDS.—

4 “(1) IN GENERAL.—In addition to such sums
5 as may be appropriated to the Secretary and Direc-
6 tor to operate the Hollings Manufacturing Extension
7 Partnership, the Secretary and Director also may
8 accept funds from other Federal departments and
9 agencies and, under section 2(c)(7), from the private
10 sector for the purpose of strengthening United
11 States manufacturing.

12 “(2) ALLOCATION OF FUNDS.—

13 “(A) FUNDS ACCEPTED FROM OTHER FED-
14 ERAL DEPARTMENTS OR AGENCIES.—The Di-
15 rector shall determine whether funds accepted
16 from other Federal departments or agencies
17 shall be counted in the calculation of the Fed-
18 eral share of capital and annual operating and
19 maintenance costs under subsection (c).

20 “(B) FUNDS ACCEPTED FROM THE PRI-
21 VATE SECTOR.—Funds accepted from the pri-
22 vate sector under section 2(c)(7), if allocated to
23 a Center, may not be considered in the calcula-
24 tion of the Federal share under subsection (c)
25 of this section.

1 “(e) MEP ADVISORY BOARD.—

2 “(1) ESTABLISHMENT.—There is established
3 within the Institute a Manufacturing Extension
4 Partnership Advisory Board (in this subsection re-
5 ferred to as the ‘MEP Advisory Board’).

6 “(2) MEMBERSHIP.—

7 “(A) IN GENERAL.—The MEP Advisory
8 Board shall consist of not fewer than 10 mem-
9 bers broadly representative of stakeholders, to
10 be appointed by the Director. At least 2 mem-
11 bers shall be employed by or on an advisory
12 board for the Centers, and at least 5 other
13 members shall be from United States small
14 businesses in the manufacturing sector. No
15 member shall be an employee of the Federal
16 Government.

17 “(B) TERM.—Except as provided in sub-
18 paragraph (C) or (D), the term of office of each
19 member of the MEP Advisory Board shall be 3
20 years.

21 “(C) VACANCIES.—Any member appointed
22 to fill a vacancy occurring prior to the expira-
23 tion of the term for which his predecessor was
24 appointed shall be appointed for the remainder
25 of such term.

1 “(D) SERVING CONSECUTIVE TERMS.—
2 Any person who has completed two consecutive
3 full terms of service on the MEP Advisory
4 Board shall thereafter be ineligible for appoint-
5 ment during the one-year period following the
6 expiration of the second such term.

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

10 “(A) advice on Hollings Manufacturing
11 Extension Partnership programs, plans, and
12 policies;

13 “(B) assessments of the soundness of Hol-
14 lings Manufacturing Extension Partnership
15 plans and strategies; and

16 “(C) assessments of current performance
17 against Hollings Manufacturing Extension
18 Partnership program plans.

19 “(4) FEDERAL ADVISORY COMMITTEE ACT AP-
20 PLICABILITY.—

21 “(A) IN GENERAL.—In discharging its du-
22 ties under this subsection, the MEP Advisory
23 Board shall function solely in an advisory ca-
24 pacity, in accordance with the Federal Advisory
25 Committee Act.

1 “(B) EXCEPTION.—Section 14 of the Fed-
2 eral Advisory Committee Act shall not apply to
3 the MEP Advisory Board.

4 “(5) REPORT.—The MEP Advisory Board shall
5 transmit an annual report to the Secretary for
6 transmittal to Congress within 30 days after the
7 submission to Congress of the President’s annual
8 budget request in each year. Such report shall ad-
9 dress the status of the program established pursuant
10 to this section and comment on the relevant sections
11 of the programmatic planning document and updates
12 thereto transmitted to Congress by the Director
13 under subsections (c) and (d) of section 23.

14 “(f) COMPETITIVE GRANT PROGRAM.—

15 “(1) ESTABLISHMENT.—The Director shall es-
16 tablish, within the Hollings Manufacturing Exten-
17 sion Partnership, a program of competitive awards
18 among participants described in paragraph (2) for
19 the purposes described in paragraph (3).

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

23 “(3) PURPOSE.—The purpose of the program
24 under this subsection is to add capabilities to the
25 Hollings Manufacturing Extension Partnership, in-

1 including the development of projects to solve new or
2 emerging manufacturing problems as determined by
3 the Director, in consultation with the Director of the
4 Hollings Manufacturing Extension Partnership pro-
5 gram, the MEP Advisory Board, and small and me-
6 dium-sized manufacturers. One or more themes for
7 the competition may be identified, which may vary
8 from year to year, depending on the needs of manu-
9 facturers and the success of previous competitions.
10 Centers may be reimbursed for costs incurred under
11 the program.

12 “(4) APPLICATIONS.—Applications for awards
13 under this subsection shall be submitted in such
14 manner, at such time, and containing such informa-
15 tion as the Director shall require, in consultation
16 with the MEP Advisory Board.

17 “(5) SELECTION.—Awards under this sub-
18 section shall be peer reviewed and competitively
19 awarded. The Director shall endeavor to have broad
20 geographic diversity among selected proposals. The
21 Director shall select proposals to receive awards that
22 will—

23 “(A) improve the competitiveness of indus-
24 tries in the region in which the Center or Cen-
25 ters are located;

1 “(B) create jobs or train newly hired em-
2 ployees; and

3 “(C) promote the transfer and commer-
4 cialization of research and technology from in-
5 stitutions of higher education, national labora-
6 tories, and nonprofit research institutes.

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

10 “(7) GLOBAL MARKETPLACE PROJECTS.—In
11 making awards under this subsection, the Director,
12 in consultation with the MEP Advisory Board and
13 the Secretary, may take into consideration whether
14 an application has significant potential for enhanc-
15 ing the competitiveness of small and medium-sized
16 United States manufacturers in the global market-
17 place.

18 “(8) DURATION.—Awards under this subsection
19 shall last no longer than 3 years.

20 “(g) EVALUATION OF OBSTACLES UNIQUE TO SMALL
21 MANUFACTURERS.—The Director shall—

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

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

3 “(3) facilitate improved communication between
4 the Centers to assist such manufacturers in imple-
5 menting appropriate, targeted solutions to such ob-
6 stacles.

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

13 **SEC. 409. ELIMINATION OF OBSOLETE REPORTS.**

14 (a) **ENTERPRISE INTEGRATION STANDARDIZATION**
15 **AND IMPLEMENTATION ACTIVITIES REPORT.**—Section 3
16 of the Enterprise Integration Act of 2002 (15 U.S.C.
17 278g-5) is amended—

18 (1) by striking subsection (e); and

19 (2) by redesignating subsections (d) and (e) as
20 subsections (c) and (d), respectively.

21 (b) **TIP REPORTS.**—Section 28 of the National Insti-
22 tute of Standards and Technology Act (15 U.S.C. 278n)
23 is amended—

24 (1) by striking subsection (g); and

25 (2) in subsection (k), by striking paragraph (5).

1 **SEC. 410. MODIFICATIONS TO GRANTS AND COOPERATIVE**
2 **AGREEMENTS.**

3 Section 8(a) of the Stevenson-Wydler Technology In-
4 novation Act of 1980 (15 U.S.C. 3706(a)) is amended by
5 striking “The total amount of any such grant or coopera-
6 tive agreement may not exceed 75 percent of the total cost
7 of the program.”.

8 **Subtitle B—Innovative Approaches**
9 **to Technology Transfer**

10 **SEC. 421. INNOVATIVE APPROACHES TO TECHNOLOGY**
11 **TRANSFER.**

12 Section 9(jj) of the Small Business Act (15 U.S.C.
13 638(jj)) is amended to read as follows:

14 “(jj) INNOVATIVE APPROACHES TO TECHNOLOGY
15 TRANSFER.—

16 “(1) GRANT PROGRAM.—

17 “(A) IN GENERAL.—Each Federal agency
18 required by subsection (n) to establish an
19 STTR program shall carry out a grant program
20 to support innovative approaches to technology
21 transfer at institutions of higher education (as
22 defined in section 101(a) of the Higher Edu-
23 cation Act of 1965 (20 U.S.C. 1001(a)), non-
24 profit research institutions and Federal labora-
25 tories in order to accelerate the commercializa-
26 tion of federally funded research and technology

1 by small business concerns, including new busi-
2 nesses.

3 “(B) AWARDING OF GRANTS AND
4 AWARDS.—

5 “(i) IN GENERAL.—Each Federal
6 agency required by subparagraph (A) to
7 participate in this program, shall award,
8 through a competitive, merit-based process,
9 grants, in the amounts listed in subpara-
10 graph (C) to institutions of higher edu-
11 cation, technology transfer organizations
12 that facilitate the commercialization of
13 technologies developed by one or more such
14 institutions of higher education, Federal
15 laboratories, other public and private non-
16 profit entities, and consortia thereof, for
17 initiatives that help identify high-quality,
18 commercially viable federally funded re-
19 search and technologies and to facilitate
20 and accelerate their transfer into the mar-
21 ketplace.

22 “(ii) USE OF FUNDS.—Activities sup-
23 ported by grants under this subsection
24 may include—

1 “(I) providing early-stage proof
2 of concept funding for translational
3 research;

4 “(II) identifying research and
5 technologies at recipient institutions
6 that have the potential for accelerated
7 commercialization;

8 “(III) technology maturation
9 funding to support activities such as
10 prototype construction, experiment
11 analysis, product comparison, and col-
12 lecting performance data;

13 “(IV) technical validations, mar-
14 ket research, clarifying intellectual
15 property rights position and strategy,
16 and investigating commercial and
17 business opportunities; and

18 “(V) programs to provide advice,
19 mentoring, entrepreneurial education,
20 project management, and technology
21 and business development expertise to
22 innovators and recipients of tech-
23 nology transfer licenses to maximize
24 commercialization potential.

1 “(iii) SELECTION PROCESS AND AP-
2 PLICATIONS.—Qualifying institutions seek-
3 ing a grant under this subsection shall
4 submit an application to a Federal agency
5 required by subparagraph (A) to partici-
6 pate in this program at such time, in such
7 manner, and containing such information
8 as the agency may require. The application
9 shall include, at a minimum—

10 “(I) a description of innovative
11 approaches to technology transfer,
12 technology development, and commer-
13 cial readiness that have the potential
14 to increase or accelerate technology
15 transfer outcomes and can be adopted
16 by other qualifying institutions, or a
17 demonstration of proven technology
18 transfer and commercialization strate-
19 gies, or a plan to implement proven
20 technology transfer and commer-
21 cialization strategies, that can achieve
22 greater commercialization of federally
23 funded research and technologies with
24 program funding;

1 “(II) a description of how the
2 qualifying institution will contribute
3 to local and regional economic devel-
4 opment efforts; and

5 “(III) a plan for sustainability
6 beyond the duration of the funding
7 award.

8 “(iv) PROGRAM OVERSIGHT
9 BOARDS.—

10 “(I) IN GENERAL.—Successful
11 proposals shall include a plan to as-
12 semble a Program Oversight Board,
13 the members of which shall have tech-
14 nical, scientific, or business expertise
15 and shall be drawn from industry,
16 start-up companies, venture capital,
17 technical enterprises, financial institu-
18 tions, and business development orga-
19 nizations.

20 “(II) PROGRAM OVERSIGHT
21 BOARDS RESPONSIBILITIES.—Pro-
22 gram Oversight Boards shall—

23 “(aa) establish award pro-
24 grams for individual projects;

1 “(bb) provide rigorous eval-
2 uation of project applications;

3 “(cc) determine which
4 projects should receive awards, in
5 accordance with guidelines estab-
6 lished under subparagraph
7 (C)(ii);

8 “(dd) establish milestones
9 and associated award amounts
10 for projects that reach mile-
11 stones;

12 “(ee) determine whether
13 awarded projects are reaching
14 milestones; and

15 “(ff) develop a process to re-
16 allocate outstanding award
17 amounts from projects that are
18 not reaching milestones to other
19 projects with more potential.

20 “(C) GRANT AND AWARD AMOUNTS.—

21 “(i) GRANT AMOUNTS.—Each Federal
22 agency required by subparagraph (A) to
23 carry out a grant program may make
24 grants to a qualifying institution for up to
25 \$1,000,000 per year for up to 3 years.

1 “(ii) AWARD AMOUNTS.—Each quali-
2 fying institution that receives a grant
3 under subparagraph (B) shall provide
4 awards for individual projects of not more
5 than \$150,000, to be provided in phased
6 amounts, based on reaching the milestones
7 established by the qualifying institution’s
8 Program Oversight Board.

9 “(D) AUTHORIZED EXPENDITURES FOR
10 INNOVATIVE APPROACHES TO TECHNOLOGY
11 TRANSFER GRANT PROGRAM.—

12 “(i) PERCENTAGE.—The percentage
13 of the extramural budget each Federal
14 agency required by subsection (n) to estab-
15 lish an STTR program shall expend on the
16 Innovative Approaches to Technology
17 Transfer Grant Program shall be—

18 “(I) 0.05 percent for each of fis-
19 cal years 2014 and 2015; and

20 “(II) 0.1 percent for each of fis-
21 cal years 2016 and 2017.

22 “(ii) TREATMENT OF EXPENDI-
23 TURES.—Any portion of the extramural
24 budget expended by a Federal agency on
25 the Innovative Approaches to Technology

1 Transfer Grant Program shall apply to-
2 wards the agency's expenditure require-
3 ments under subsection (n).

4 “(2) PROGRAM EVALUATION AND DATA COL-
5 LECTION AND DISSEMINATION.—

6 “(A) EVALUATION PLAN AND DATA COL-
7 LECTION.—Each Federal agency required by
8 paragraph (1)(A) to establish an Innovative Ap-
9 proaches to Technology Transfer Grant Pro-
10 gram shall develop a program evaluation plan
11 and collect annually such information from
12 grantees as is necessary to assess the Program.
13 Program evaluation plans shall require the col-
14 lection of data aimed at identifying outcomes
15 resulting from the transfer of technology with
16 assistance from the Innovative Approaches to
17 Technology Transfer Grant Program, such as—

18 “(i) specific follow-on funding identi-
19 fied or obtained, including follow-on fund-
20 ing sources, such as Federal sources or
21 private sources;

22 “(ii) number of projects which result
23 in a license to a start-up company or an
24 established company with sufficient re-
25 sources for effective commercialization

1 within 5 years of receiving an award under
2 paragraph (1);

3 “(iii) invention disclosures and pat-
4 ents;

5 “(iv) number of projects supported by
6 qualifying institutions receiving a grant
7 under paragraph (1) that secure Phase I
8 or Phase II SBIR or STTR awards;

9 “(v) available information on revenue,
10 sales or other measures of products that
11 have been commercialized as a result of
12 projects awarded under paragraph (1);

13 “(vi) number and location of jobs cre-
14 ated resulting from projects awarded under
15 paragraph (1); and

16 “(vii) other data as deemed appro-
17 priate by a Federal agency required by this
18 subparagraph to develop a program evalua-
19 tion plan.

20 “(B) EVALUATIVE REPORT TO CON-
21 GRESS.—The head of each Federal agency that
22 participates in the Innovative Approaches to
23 Technology Transfer Grant Program shall sub-
24 mit to the Committee on Science, Space, and
25 Technology and the Committee on Small Busi-

1 ness of the House of Representatives and the
2 Committee on Small Business and Entrepre-
3 neurship of the Senate an evaluative report re-
4 garding the activities of the program. The re-
5 port shall include—

6 “(i) a detailed description of the im-
7 plementation of the program;

8 “(ii) a detailed description of the
9 grantee selection process;

10 “(iii) an accounting of the funds used
11 in the program; and

12 “(iv) a summary of the data collected
13 under subparagraph (A).

14 “(C) DATA DISSEMINATION.—For the pur-
15 poses of program transparency and dissemina-
16 tion of best practices, the Administrator shall
17 include on the public database under subsection
18 (k)(1) information on the Innovative Ap-
19 proaches to Technology Transfer Grant Pro-
20 gram, including—

21 “(i) the program evaluation plan re-
22 quired under subparagraph (A);

23 “(ii) a list of recipients of awards
24 under paragraph (1); and

1 “(iii) information on the use of grants
2 under paragraph (1) by recipient institu-
3 tions.”.

4 **TITLE V—NETWORKING AND IN-**
5 **FORMATION TECHNOLOGY**
6 **RESEARCH AND DEVELOP-**
7 **MENT**

8 **SEC. 501. SHORT TITLE.**

9 This title may be cited as the “Advancing America’s
10 Networking and Information Technology Research and
11 Development Act of 2013”.

12 **SEC. 502. PROGRAM PLANNING AND COORDINATION.**

13 (a) PERIODIC REVIEWS.—Section 101 of the High-
14 Performance Computing Act of 1991 (15 U.S.C. 5511)
15 is amended by adding at the end the following new sub-
16 section:

17 “(d) PERIODIC REVIEWS.—The agencies identified in
18 subsection (a)(3)(B) shall—

19 “(1) periodically assess the contents and fund-
20 ing levels of the Program Component Areas and re-
21 structure the Program when warranted, taking into
22 consideration any relevant recommendations of the
23 advisory committee established under subsection (b);
24 and

1 “(2) ensure that the Program includes large-
2 scale, long-term, interdisciplinary research and de-
3 velopment activities, including activities described in
4 section 104.”.

5 (b) DEVELOPMENT OF STRATEGIC PLAN.—Section
6 101 of such Act (15 U.S.C. 5511) is amended further by
7 adding after subsection (d), as added by subsection (a)
8 of this Act, the following new subsection:

9 “(e) STRATEGIC PLAN.—

10 “(1) IN GENERAL.—The agencies identified in
11 subsection (a)(3)(B), working through the National
12 Science and Technology Council and with the assist-
13 ance of the National Coordination Office described
14 under section 102, shall develop, within 12 months
15 after the date of enactment of the Advancing Amer-
16 ica’s Networking and Information Technology Re-
17 search and Development Act of 2013, and update
18 every 3 years thereafter, a 5-year strategic plan to
19 guide the activities described under subsection
20 (a)(1).

21 “(2) CONTENTS.—The strategic plan shall
22 specify near-term and long-term objectives for the
23 Program, the anticipated time frame for achieving
24 the near-term objectives, the metrics to be used for

1 assessing progress toward the objectives, and how
2 the Program will—

3 “(A) foster the transfer of research and
4 development results into new technologies and
5 applications for the benefit of society, including
6 through cooperation and collaborations with
7 networking and information technology re-
8 search, development, and technology transition
9 initiatives supported by the States;

10 “(B) encourage and support mechanisms
11 for interdisciplinary research and development
12 in networking and information technology, in-
13 cluding through collaborations across agencies,
14 across Program Component Areas, with indus-
15 try, with Federal laboratories (as defined in
16 section 4 of the Stevenson-Wydler Technology
17 Innovation Act of 1980 (15 U.S.C. 3703)), and
18 with international organizations;

19 “(C) address long-term challenges of na-
20 tional importance for which solutions require
21 large-scale, long-term, interdisciplinary research
22 and development;

23 “(D) place emphasis on innovative and
24 high-risk projects having the potential for sub-

1 stantial societal returns on the research invest-
2 ment;

3 “(E) strengthen all levels of networking
4 and information technology education and
5 training programs to ensure an adequate, well-
6 trained workforce; and

7 “(F) attract more women and underrep-
8 resented minorities to pursue postsecondary de-
9 grees in networking and information tech-
10 nology.

11 “(3) NATIONAL RESEARCH INFRASTRUC-
12 TURE.—The strategic plan developed in accordance
13 with paragraph (1) shall be accompanied by mile-
14 stones and roadmaps for establishing and maintain-
15 ing the national research infrastructure required to
16 support the Program, including the roadmap re-
17 quired by subsection (a)(2)(E).

18 “(4) RECOMMENDATIONS.—The entities in-
19 volved in developing the strategic plan under para-
20 graph (1) shall take into consideration the rec-
21 ommendations—

22 “(A) of the advisory committee established
23 under subsection (b); and

1 “(B) of the stakeholders whose input was
2 solicited by the National Coordination Office, as
3 required under section 102(b)(3).

4 “(5) REPORT TO CONGRESS.—The Director of
5 the National Coordination Office shall transmit the
6 strategic plan required under paragraph (1) to the
7 advisory committee, the Committee on Commerce,
8 Science, and Transportation of the Senate, and the
9 Committee on Science, Space, and Technology of the
10 House of Representatives.”.

11 (c) ADDITIONAL RESPONSIBILITIES OF DIRECTOR.—
12 Section 101(a)(2) of such Act (15 U.S.C. 5511(a)(2)) is
13 amended—

14 (1) in subparagraph (A) by inserting “edu-
15 cation,” before “and other activities”;

16 (2) by redesignating subparagraphs (E) and
17 (F) as subparagraphs (F) and (G), respectively; and

18 (3) by inserting after subparagraph (D) the fol-
19 lowing new subparagraph:

20 “(E) encourage and monitor the efforts of the
21 agencies participating in the Program to allocate the
22 level of resources and management attention nec-
23 essary to ensure that the strategic plan under sub-
24 section (e) is developed and executed effectively and
25 that the objectives of the Program are met;”.

1 (d) ADVISORY COMMITTEE.—Section 101(b)(1) of
2 such Act (15 U.S.C. 5511(b)(1)) is amended—

3 (1) after the first sentence, by inserting the fol-
4 lowing: “The co-chairs of the advisory committee
5 shall meet the qualifications of committee member-
6 ship and may be members of the President’s Council
7 of Advisors on Science and Technology.”; and

8 (2) in subparagraph (D), by striking “high-per-
9 formance” and inserting “high-end”.

10 (e) REPORT.—Section 101(a)(3) of such Act (15
11 U.S.C. 5511(a)(3)) is amended—

12 (1) in subparagraph (B)—

13 (A) by redesignating clauses (vii) through
14 (xi) as clauses (viii) through (xii), respectively;
15 and

16 (B) by inserting after clause (vi) the fol-
17 lowing:

18 “(vii) the Department of Homeland
19 Security;”;

20 (2) in subparagraph (C)—

21 (A) by striking “is submitted,” and insert-
22 ing “is submitted, the levels for the previous
23 fiscal year;”;

24 (B) by striking “each Program Component
25 Area;” and inserting “each Program Compo-

1 nent Area and research area supported in ac-
2 cordance with section 104;”;

3 (3) in subparagraph (D)—

4 (A) by striking “each Program Component
5 Area,” and inserting “each Program Compo-
6 nent Area and research area supported in ac-
7 cordance with section 104,”;

8 (B) by striking “is submitted,” and insert-
9 ing “is submitted, the levels for the previous
10 fiscal year,”; and

11 (C) by striking “and” after the semicolon;

12 (4) by redesignating subparagraph (E) as sub-
13 paragraph (G); and

14 (5) by inserting after subparagraph (D) the fol-
15 lowing new subparagraphs:

16 “(E) include a description of how the objectives
17 for each Program Component Area, and the objec-
18 tives for activities that involve multiple Program
19 Component Areas, relate to the objectives of the
20 Program identified in the strategic plan required
21 under subsection (e);

22 “(F) include—

23 “(i) a description of the funding required
24 by the National Coordination Office to perform

1 the functions specified under section 102(b) for
2 the next fiscal year by category of activity;

3 “(ii) a description of the funding required
4 by such Office to perform the functions speci-
5 fied under section 102(b) for the current fiscal
6 year by category of activity; and

7 “(iii) the amount of funding provided for
8 such Office for the current fiscal year by each
9 agency participating in the Program; and”.

10 (f) DEFINITION.—Section 4 of such Act (15 U.S.C.
11 5503) is amended—

12 (1) by redesignating paragraphs (1) through
13 (7) as paragraphs (2) through (8), respectively;

14 (2) by inserting before paragraph (2), as so re-
15 designated, the following new paragraph:

16 “(1) ‘cyber-physical systems’ means physical or
17 engineered systems whose networking and informa-
18 tion technology functions and physical elements are
19 deeply integrated and are actively connected to the
20 physical world through sensors, actuators, or other
21 means to perform monitoring and control func-
22 tions;”;

23 (3) in paragraph (3), as so redesignated, by
24 striking “high-performance computing” and insert-
25 ing “networking and information technology”;

1 (4) in paragraph (4), as so redesignated—

2 (A) by striking “high-performance com-
3 puting” and inserting “networking and infor-
4 mation technology”; and

5 (B) by striking “supercomputer” and in-
6 serting “high-end computing”;

7 (5) in paragraph (6), as so redesignated, by
8 striking “network referred to as” and all that fol-
9 lows through the semicolon and inserting “network,
10 including advanced computer networks of Federal
11 agencies and departments;”; and

12 (6) in paragraph (7), as so redesignated, by
13 striking “National High-Performance Computing
14 Program” and inserting “networking and informa-
15 tion technology research and development program”.

16 **SEC. 503. LARGE-SCALE RESEARCH IN AREAS OF NATIONAL**
17 **IMPORTANCE.**

18 Title I of such Act (15 U.S.C. 5511) is amended by
19 adding at the end the following new section:

20 **“SEC. 104. LARGE-SCALE RESEARCH IN AREAS OF NA-**
21 **TIONAL IMPORTANCE.**

22 “(a) IN GENERAL.—The Program shall encourage
23 agencies identified in section 101(a)(3)(B) to support
24 large-scale, long-term, interdisciplinary research and de-
25 velopment activities in networking and information tech-

1 nology directed toward application areas that have the po-
2 tential for significant contributions to national economic
3 competitiveness and for other significant societal benefits.
4 Such activities, ranging from basic research to the dem-
5 onstration of technical solutions, shall be designed to ad-
6 vance the development of research discoveries. The advi-
7 sory committee established under section 101(b) shall
8 make recommendations to the Program for candidate re-
9 search and development areas for support under this sec-
10 tion.

11 “(b) CHARACTERISTICS.—

12 “(1) IN GENERAL.—Research and development
13 activities under this section shall—

14 “(A) include projects selected on the basis
15 of applications for support through a competi-
16 tive, merit-based process;

17 “(B) involve collaborations among re-
18 searchers in institutions of higher education
19 and industry, and may involve nonprofit re-
20 search institutions and Federal laboratories, as
21 appropriate;

22 “(C) when possible, leverage Federal in-
23 vestments through collaboration with related
24 State initiatives; and

1 “(D) include a plan for fostering the trans-
2 fer of research discoveries and the results of
3 technology demonstration activities, including
4 from institutions of higher education and Fed-
5 eral laboratories, to industry for commercial de-
6 velopment.

7 “(2) COST-SHARING.—In selecting applications
8 for support, the agencies shall give special consider-
9 ation to projects that include cost sharing from non-
10 Federal sources.

11 “(3) AGENCY COLLABORATION.—If 2 or more
12 agencies identified in section 101(a)(3)(B), or other
13 appropriate agencies, are working on large-scale re-
14 search and development activities in the same area
15 of national importance, then such agencies shall
16 strive to collaborate through joint solicitation and se-
17 lection of applications for support and subsequent
18 funding of projects.

19 “(4) INTERDISCIPLINARY RESEARCH CEN-
20 TERS.—Research and development activities under
21 this section may be supported through interdiscipli-
22 nary research centers that are organized to inves-
23 tigate basic research questions and carry out tech-
24 nology demonstration activities in areas described in
25 subsection (a). Research may be carried out through

1 existing interdisciplinary centers, including those au-
2 thORIZED under section 7024(b)(2) of the America
3 COMPETES Act (Public Law 110–69; 42 U.S.C.
4 1862o–10).’”.

5 **SEC. 504. CYBER-PHYSICAL SYSTEMS.**

6 (a) ADDITIONAL PROGRAM CHARACTERISTICS.—Sec-
7 tion 101(a)(1) of such Act (15 U.S.C. 5511(a)(1)) is
8 amended—

9 (1) in subparagraph (H), by striking “and”
10 after the semicolon;

11 (2) in subparagraph (I)—

12 (A) by striking “improving the security”
13 and inserting “improving the security, reli-
14 ability, and resilience”; and

15 (B) by striking the period at the end and
16 inserting a semicolon; and

17 (3) by adding at the end the following new sub-
18 paragraphs:

19 “(J) provide for increased understanding of the
20 scientific principles of cyber-physical systems and
21 improve the methods available for the design, devel-
22 opment, and operation of cyber-physical systems
23 that are characterized by high reliability, safety, and
24 security; and

1 “(K) provide for research and development on
2 human-computer interactions, visualization, and big
3 data.”.

4 (b) WORKSHOP.—Title I of such Act (15 U.S.C.
5 5511) is amended further by adding after section 104, as
6 added by section 503 of this Act, the following new sec-
7 tion:

8 **“SEC. 105. UNIVERSITY/INDUSTRY WORKSHOP.**

9 “(a) ESTABLISHMENT.—Not later than 1 year after
10 the date of enactment of the Advancing America’s Net-
11 working and Information Technology Research and Devel-
12 opment Act of 2013, the Director of the National Coordi-
13 nation Office shall convene a workshop, with participants
14 from institutions of higher education, Federal labora-
15 tories, and industry, to explore mechanisms for carrying
16 out collaborative research and development activities for
17 cyber-physical systems, including the related technologies
18 required to enable these systems, and to develop grand
19 challenges in cyber-physical systems research and develop-
20 ment.

21 “(b) FUNCTIONS.—The workshop participants
22 shall—

23 “(1) develop options for models for research
24 and development partnerships among institutions of
25 higher education, Federal laboratories, and industry,

1 including mechanisms for the support of research
2 and development carried out under these partner-
3 ships;

4 “(2) develop options for grand challenges in
5 cyber-physical systems research and development
6 that would be addressed through such partnerships;

7 “(3) propose guidelines for assigning intellec-
8 tual property rights and for the transfer of research
9 results to the private sector; and

10 “(4) make recommendations for how Federal
11 agencies participating in the Program can help sup-
12 port research and development partnerships in
13 cyber-physical systems, including through existing or
14 new grant programs.

15 “(c) PARTICIPANTS.—The Director of the National
16 Coordination Office shall ensure that participants in the
17 workshop are individuals with knowledge and expertise in
18 cyber-physical systems and that participants represent a
19 broad mix of relevant stakeholders, including academic
20 and industry researchers, cyber-physical systems and tech-
21 nologies manufacturers, cyber-physical systems and tech-
22 nologies users, and, as appropriate, Federal Government
23 regulators.

24 “(d) REPORT.—Not later than 18 months after the
25 date of enactment of the Advancing America’s Networking

1 and Information Technology Research and Development
2 Act of 2013, the Director of the National Coordination
3 Office shall transmit to the Committee on Commerce,
4 Science, and Transportation of the Senate and the Com-
5 mittee on Science, Space, and Technology of the House
6 of Representatives a report describing the findings and
7 recommendations resulting from the workshop required
8 under this section.”.

9 **SEC. 505. CLOUD COMPUTING SERVICES FOR RESEARCH.**

10 Title I of such Act (15 U.S.C. 5511) is amended fur-
11 ther by adding after section 105, as added by section
12 504(b) of this Act, the following new section:

13 **“SEC. 106. CLOUD COMPUTING SERVICES FOR RESEARCH.**

14 “(a) INTERAGENCY WORKING GROUP.—Not later
15 than 180 days after the date of enactment of the Advanc-
16 ing America’s Networking and Information Technology
17 Research and Development Act of 2013, the Director of
18 the National Coordination Office, working through the
19 National Science and Technology Council, shall convene
20 an interagency working group to examine—

21 “(1) the research and development needed—

22 “(A) to enhance the effectiveness and effi-
23 ciency of cloud computing environments;

24 “(B) to increase the trustworthiness of
25 cloud applications and infrastructure; and

1 “(C) to enhance the foundations of cloud
2 architectures, programming models, and inter-
3 operability; and

4 “(2) how Federal science agencies can facilitate
5 the use of cloud computing for federally funded
6 science and engineering research, including—

7 “(A) making recommendations on changes
8 in funding mechanisms, budget models, and
9 policies needed to remove barriers to the adop-
10 tion of cloud computing services for research
11 and for data preservation and sharing; and

12 “(B) providing guidance to organizations
13 and researchers on opportunities and guidelines
14 for using cloud computing services for federally
15 supported research and related activities.

16 “(b) CONSULTATION.—In carrying out the tasks in
17 paragraphs (1) and (2) of subsection (a), the working
18 group shall consult with academia, industry, Federal lab-
19 oratories, and other relevant organizations and institu-
20 tions, as appropriate.

21 “(c) REPORT.—Not later than 1 year after the date
22 of enactment of the Advancing America’s Networking and
23 Information Technology Research and Development Act of
24 2013, the Director of the National Coordination Office
25 shall transmit to the Committee on Science, Space, and

1 Technology of the House of Representatives and the Com-
2 mittee on Commerce, Science, and Transportation of the
3 Senate a report describing the findings and any rec-
4 ommendations of the working group.

5 “(d) **TERMINATION.**—The interagency working group
6 shall terminate upon transmittal of the report required
7 under subsection (c).”.

8 **SEC. 506. NATIONAL COORDINATION OFFICE.**

9 Section 102 of such Act (15 U.S.C. 5512) is amended
10 to read as follows:

11 **“SEC. 102. NATIONAL COORDINATION OFFICE.**

12 “(a) **OFFICE.**—The Director shall continue a Na-
13 tional Coordination Office with a Director and full-time
14 staff.

15 “(b) **FUNCTIONS.**—The National Coordination Office
16 shall—

17 “(1) provide technical and administrative sup-
18 port to—

19 “(A) the agencies participating in planning
20 and implementing the Program, including such
21 support as needed in the development of the
22 strategic plan under section 101(e); and

23 “(B) the advisory committee established
24 under section 101(b);

1 “(2) serve as the primary point of contact on
2 Federal networking and information technology ac-
3 tivities for government organizations, academia, in-
4 dustry, professional societies, State computing and
5 networking technology programs, interested citizen
6 groups, and others to exchange technical and pro-
7 grammatic information;

8 “(3) solicit input and recommendations from a
9 wide range of stakeholders during the development
10 of each strategic plan required under section 101(e)
11 through the convening of at least 1 workshop with
12 invitees from academia, industry, Federal labora-
13 tories, and other relevant organizations and institu-
14 tions;

15 “(4) conduct public outreach, including the dis-
16 semination of findings and recommendations of the
17 advisory committee, as appropriate; and

18 “(5) promote access to and early application of
19 the technologies, innovations, and expertise derived
20 from Program activities to agency missions and sys-
21 tems across the Federal Government and to United
22 States industry.

23 “(c) SOURCE OF FUNDING.—

24 “(1) IN GENERAL.—The operation of the Na-
25 tional Coordination Office shall be supported by

1 funds from each agency participating in the Pro-
2 gram.

3 “(2) SPECIFICATIONS.—The portion of the total
4 budget of such Office that is provided by each agen-
5 cy for each fiscal year shall be in the same propor-
6 tion as each such agency’s share of the total budget
7 for the Program for the previous fiscal year, as spec-
8 ified in the report required under section
9 101(a)(3).”.

10 **SEC. 507. IMPROVING NETWORKING AND INFORMATION**
11 **TECHNOLOGY EDUCATION.**

12 Section 201(a) of such Act (15 U.S.C. 5521(a)) is
13 amended—

14 (1) by redesignating paragraphs (2) through
15 (4) as paragraphs (3) through (5), respectively; and

16 (2) by inserting after paragraph (1) the fol-
17 lowing new paragraph:

18 “(2) the National Science Foundation shall use
19 its existing programs, in collaboration with other
20 agencies, as appropriate, to improve the teaching
21 and learning of networking and information tech-
22 nology at all levels of education and to increase par-
23 ticipation in networking and information technology
24 fields, including by women and underrepresented mi-
25 norities;”.

1 **SEC. 508. CONFORMING AND TECHNICAL AMENDMENTS.**

2 (a) SECTION 3.—Section 3 of such Act (15 U.S.C.
3 5502) is amended—

4 (1) in the matter preceding paragraph (1), by
5 striking “high-performance computing” and insert-
6 ing “networking and information technology”;

7 (2) in paragraph (1)—

8 (A) in the matter preceding subparagraph
9 (A), by striking “high-performance computing”
10 and inserting “networking and information
11 technology”;

12 (B) in subparagraphs (A), (F), and (G), by
13 striking “high-performance computing” each
14 place it appears and inserting “networking and
15 information technology”; and

16 (C) in subparagraph (H), by striking
17 “high-performance” and inserting “high-end”;
18 and

19 (3) in paragraph (2)—

20 (A) by striking “high-performance com-
21 puting and” and inserting “networking and in-
22 formation technology and”; and

23 (B) by striking “high-performance com-
24 puting network” and inserting “networking and
25 information technology”.

1 (b) TITLE I.—The heading of title I of such Act (15
2 U.S.C. 5511) is amended by striking “**HIGH-PER-**
3 **FORMANCE COMPUTING**” and inserting “**NET-**
4 **WORKING AND INFORMATION TECH-**
5 **NOLOGY**”.

6 (c) SECTION 101.—Section 101 of such Act (15
7 U.S.C. 5511) is amended—

8 (1) in the section heading, by striking “**HIGH-**
9 **PERFORMANCE COMPUTING**” and inserting
10 “**NETWORKING AND INFORMATION TECH-**
11 **NOLOGY RESEARCH AND DEVELOPMENT**”;

12 (2) in subsection (a)—

13 (A) in the subsection heading, by striking
14 “**NATIONAL HIGH-PERFORMANCE COMPUTING**”
15 and inserting “**NETWORKING AND INFORMA-**
16 **TION TECHNOLOGY RESEARCH AND DEVELOP-**
17 **MENT**”;

18 (B) in paragraph (1) of such subsection—

19 (i) in the matter preceding subpara-
20 graph (A), by striking “**National High-Per-**
21 **formance Computing Program**” and insert-
22 ing “**networking and information tech-**
23 **nology research and development pro-**
24 **gram**”;

1 (ii) in subparagraph (A), by striking
2 “high-performance computing, including
3 networking” and inserting “networking
4 and information technology”;

5 (iii) in subparagraphs (B) and (G), by
6 striking “high-performance” each place it
7 appears and inserting “high-end”; and

8 (iv) in subparagraph (C), by striking
9 “high-performance computing and net-
10 working” and inserting “high-end com-
11 puting, distributed, and networking”; and

12 (C) in paragraph (2) of such subsection—

13 (i) in subparagraphs (A) and (C)—

14 (I) by striking “high-performance
15 computing” each place it appears and
16 inserting “networking and information
17 technology”; and

18 (II) by striking “development,
19 networking,” each place it appears
20 and inserting “development,”; and

21 (ii) in subparagraphs (F) and (G), as
22 redesignated by section 2(c)(1) of this Act,
23 by striking “high-performance” each place
24 it appears and inserting “high-end”;

25 (3) in subsection (b)—

1 (A) in paragraph (1), in the matter pre-
2 ceding subparagraph (A), by striking “high-per-
3 formance computing” both places it appears
4 and inserting “networking and information
5 technology”; and

6 (B) in paragraph (2), in the second sen-
7 tence, by striking “2” and inserting “3”; and

8 (4) in subsection (c)(1)(A), by striking “high-
9 performance computing” and inserting “networking
10 and information technology”.

11 (d) SECTION 201.—Section 201(a)(1) of such Act
12 (15 U.S.C. 5521(a)(1)) is amended by striking “high-per-
13 formance computing” and all that follows through “net-
14 working;” and inserting “networking and information re-
15 search and development;”.

16 (e) SECTION 202.—Section 202(a) of such Act (15
17 U.S.C. 5522(a)) is amended by striking “high-perform-
18 ance computing” and inserting “networking and informa-
19 tion technology”.

20 (f) SECTION 203.—Section 203(a) of such Act (15
21 U.S.C. 5523(a)(1)) is amended—

22 (1) in paragraph (1), by striking “high-per-
23 formance computing and networking” and inserting
24 “networking and information technology”; and

1 (2) in paragraph (2)(A), by striking “high-per-
2 formance” and inserting “high-end”.

3 (g) SECTION 204.—Section 204 of such Act (15
4 U.S.C. 5524) is amended—

5 (1) in subsection (a)(1)—

6 (A) in subparagraph (A), by striking
7 “high-performance computing systems and net-
8 works” and inserting “networking and informa-
9 tion technology systems and capabilities”;

10 (B) in subparagraph (B), by striking
11 “interoperability of high-performance com-
12 puting systems in networks and for common
13 user interfaces to systems” and inserting
14 “interoperability and usability of networking
15 and information technology systems”; and

16 (C) in subparagraph (C), by striking
17 “high-performance computing” and inserting
18 “networking and information technology”; and

19 (2) in subsection (b)—

20 (A) in the heading, by striking “HIGH-
21 PERFORMANCE COMPUTING AND NETWORK”
22 and inserting “NETWORKING AND INFORMA-
23 TION TECHNOLOGY”; and

24 (B) by striking “sensitive”.

1 (h) SECTION 205.—Section 205(a) of such Act (15
2 U.S.C. 5525(a)) is amended by striking “computational”
3 and inserting “networking and information technology”.

4 (i) SECTION 206.—Section 206(a) of such Act (15
5 U.S.C. 5526(a)) is amended by striking “computational
6 research” and inserting “networking and information
7 technology research”.

8 (j) SECTION 207.—Section 207(b) of such Act (15
9 U.S.C. 5527(b)) is amended by striking “high-perform-
10 ance computing” and inserting “networking and informa-
11 tion technology”.

12 (k) SECTION 208.—Section 208 of such Act (15
13 U.S.C. 5528) is amended—

14 (1) in the section heading, by striking “**HIGH-**
15 **PERFORMANCE COMPUTING**” and inserting
16 “**NETWORKING AND INFORMATION TECH-**
17 **NOLOGY**”; and

18 (2) in subsection (a)—

19 (A) in paragraph (1), by striking “High-
20 performance computing and associated” and in-
21 serting “Networking and information”;

22 (B) in paragraph (2), by striking “high-
23 performance computing” and inserting “net-
24 working and information technologies”;

1 (C) in paragraph (3), by striking “high-
2 performance” and inserting “high-end”;

3 (D) in paragraph (4), by striking “high-
4 performance computers and associated” and in-
5 sserting “networking and information”; and

6 (E) in paragraph (5), by striking “high-
7 performance computing and associated” and in-
8 sserting “networking and information”.