

# One Hundred Tenth Congress of the United States of America

AT THE FIRST SESSION

*Begun and held at the City of Washington on Thursday,  
the fourth day of January, two thousand and seven*

## An Act

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

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

### SECTION 1. SHORT TITLE.

This Act may be cited as the “America COMPETES Act” or the “America Creating Opportunities to Meaningfully Promote Excellence in Technology, Education, and Science Act”.

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## **TITLE I—OFFICE OF SCIENCE AND TECHNOLOGY POLICY; GOVERNMENT-WIDE SCIENCE**

### **SEC. 1001. NATIONAL SCIENCE AND TECHNOLOGY SUMMIT.**

(a) IN GENERAL.—Not later than 180 days after the date of the enactment of this Act, the President shall convene a National

improvement in mathematics, as measured by the improvement in the students' average score on the State's assessments in mathematics for the school year for which the grant is awarded, as compared to the school year preceding the school year for which the grant is awarded; and

(2) for each of the school years 2008–2009 through 2010–2011, to each of the 3 elementary schools, and each of the 3 secondary schools, each of which has a high concentration of low income students as defined in section 1707(2) of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 6537(2)), in each State whose students demonstrate the most improvement in science, as measured by the improvement in the students' average score on the State's assessments in science for the school year for which the grant is awarded, as compared to the school year preceding the school year for which the grant is awarded.

(b) GRANT AMOUNT.—The amount of each grant awarded under this section shall be \$50,000.

**SEC. 6502. AUTHORIZATION OF APPROPRIATIONS.**

There are authorized to be appropriated to carry out this subtitle such sums as may be necessary for fiscal years 2008 and each of the 2 succeeding fiscal years.

## **TITLE VII—NATIONAL SCIENCE FOUNDATION**

**SEC. 7001. DEFINITIONS.**

In this title:

(1) BASIC RESEARCH.—The term “basic research” has the meaning given such term in the Office of Management and Budget circular No. A–11.

(2) BOARD.—The term “Board” means the National Science Board established under section 2 of the National Science Foundation Act of 1950 (42 U.S.C. 1861).

(3) DIRECTOR.—The term “Director” means the Director of the Foundation.

(4) ELEMENTARY SCHOOL.—The term “elementary school” has the meaning given such term in section 9101 of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 7801).

(5) FOUNDATION.—The term “Foundation” means the National Science Foundation.

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

(7) SECONDARY SCHOOL.—The term “secondary school” has the meaning given such term in section 9101 of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 7801).

**SEC. 7002. AUTHORIZATION OF APPROPRIATIONS.**

(a) FISCAL YEAR 2008.—

(1) IN GENERAL.—There are authorized to be appropriated to the Foundation \$6,600,000,000 for fiscal year 2008.

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

(A) \$5,156,000,000 shall be made available for research and related activities, of which—

(i) \$115,000,000 shall be made available for the Major Research Instrumentation program;

(ii) \$165,400,000 shall be made available for the Faculty Early Career Development (CAREER) Program;

(iii) \$61,600,000 shall be made available for the Research Experiences for Undergraduates program;

(iv) \$120,000,000 shall be made available for the Experimental Program to Stimulate Competitive Research;

(v) \$47,300,000 shall be made available for the Integrative Graduate Education and Research Traineeship program;

(vi) \$9,000,000 shall be made available for the Graduate Research Fellowship program; and

(vii) \$10,000,000 shall be made available for the professional science master's degree program under section 7034;

(B) \$896,000,000 shall be made available for education and human resources, of which—

(i) \$100,000,000 shall be for Mathematics and Science Education Partnerships established under section 9 of the National Science Foundation Authorization Act of 2002 (42 U.S.C. 1862n);

(ii) \$89,800,000 shall be for the Robert Noyce Scholarship Program established under section 10 of the National Science Foundation Authorization Act of 2002 (42 U.S.C. 1862n-1);

(iii) \$40,000,000 shall be for the Science, Mathematics, Engineering, and Technology Talent Expansion Program established under section 8(7) of the National Science Foundation Authorization Act of 2002 (Public Law 107-368);

(iv) \$52,000,000 shall be for the Advanced Technological Education program established by section 3(a) of the Scientific and Advanced-Technology Act of 1992 (Public Law 102-476);

(v) \$27,100,000 shall be made available for the Integrative Graduate Education and Research Traineeship program; and

(vi) \$96,600,000 shall be made available for the Graduate Research Fellowship program;

(C) \$245,000,000 shall be made available for major research equipment and facilities construction;

(D) \$285,600,000 shall be made available for agency operations and award management;

(E) \$4,050,000 shall be made available for the Office of the National Science Board; and

(F) \$12,350,000 shall be made available for the Office of Inspector General.

(b) FISCAL YEAR 2009.—

(1) IN GENERAL.—There are authorized to be appropriated to the Foundation \$7,326,000,000 for fiscal year 2009.

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

(A) \$5,742,300,000 shall be made available for research and related activities, of which—

(i) \$123,100,000 shall be made available for the Major Research Instrumentation program;

(ii) \$183,600,000 shall be made available for the Faculty Early Career Development (CAREER) Program;

(iii) \$68,400,000 shall be made available for the Research Experiences for Undergraduates program;

(iv) \$133,200,000 shall be made available for the Experimental Program to Stimulate Competitive Research;

(v) \$52,500,000 shall be made available for the Integrative Graduate Education and Research Traineeship program;

(vi) \$10,000,000 shall be made available for the Graduate Research Fellowship program; and

(vii) \$12,000,000 shall be made available for the professional science master's degree program under section 7034;

(B) \$995,000,000 shall be made available for education and human resources, of which—

(i) \$111,000,000 shall be for Mathematics and Science Education Partnerships established under section 9 of the National Science Foundation Authorization Act of 2002 (42 U.S.C. 1862n);

(ii) \$115,000,000 shall be for the Robert Noyce Scholarship Program established under section 10 of the National Science Foundation Authorization Act of 2002 (42 U.S.C. 1862n-1);

(iii) \$50,000,000 shall be for the Science, Mathematics, Engineering, and Technology Talent Expansion Program established under section 8(7) of the National Science Foundation Authorization Act of 2002 (Public Law 107-368);

(iv) \$57,700,000 shall be for the Advanced Technological Education program as established by section 3(a) of the Scientific and Advanced-Technology Act of 1992 (Public Law 102-476);

(v) \$30,100,000 shall be made available for the Integrative Graduate Education and Research Traineeship program; and

(vi) \$107,200,000 shall be made available for the Graduate Research Fellowship program;

(C) \$262,000,000 shall be made available for major research equipment and facilities construction;

(D) \$309,760,000 shall be made available for agency operations and award management;

(E) \$4,190,000 shall be made available for the Office of the National Science Board; and

(F) \$12,750,000 shall be made available for the Office of Inspector General.

(c) FISCAL YEAR 2010.—

(1) IN GENERAL.—There are authorized to be appropriated to the Foundation \$8,132,000,000 for fiscal year 2010.

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

(A) \$6,401,000,000 shall be made available for research and related activities, of which—

(i) \$131,700,000 shall be made available for the Major Research Instrumentation program;

(ii) \$203,800,000 shall be made available for the Faculty Early Career Development (CAREER) Program;

(iii) \$75,900,000 shall be made available for the Research Experiences for Undergraduates program;

(iv) \$147,800,000 shall be made available for the Experimental Program to Stimulate Competitive Research;

(v) \$58,300,000 shall be made available for the Integrative Graduate Education and Research Traineeship program;

(vi) \$11,100,000 shall be made available for the Graduate Research Fellowship program; and

(vii) \$15,000,000 shall be made available for the professional science master's degree program under section 7034;

(B) \$1,104,000,000 shall be made available for education and human resources, of which—

(i) \$123,200,000 shall be for Mathematics and Science Education Partnerships established under section 9 of the National Science Foundation Authorization Act of 2002 (42 U.S.C. 1862n);

(ii) \$140,500,000 shall be for the Robert Noyce Scholarship Program established under section 10 of the National Science Foundation Authorization Act of 2002 (42 U.S.C. 1862n-1);

(iii) \$55,000,000 shall be for the Science, Mathematics, Engineering, and Technology Talent Expansion Program established under section 8(7) of the National Science Foundation Authorization Act of 2002 (Public Law 107-368);

(iv) \$64,000,000 shall be for the Advanced Technological Education program as established by section 3(a) of the Scientific and Advanced-Technology Act of 1992 (Public Law 102-476);

(v) \$33,400,000 shall be made available for the Integrative Graduate Education and Research Traineeship program; and

(vi) \$119,000,000 shall be made available for the Graduate Research Fellowship program;

(C) \$280,000,000 shall be made available for major research equipment and facilities construction;

(D) \$329,450,000 shall be made available for agency operations and award management;

(E) \$4,340,000 shall be made available for the Office of the National Science Board; and

(F) \$13,210,000 shall be made available for the Office of Inspector General.

**SEC. 7003. REAFFIRMATION OF THE MERIT-REVIEW PROCESS OF THE NATIONAL SCIENCE FOUNDATION.**

Nothing in this title or title I, or the amendments made by this title or title I, shall be interpreted to require or recommend that the Foundation—

- (1) alter or modify its merit-review system or peer-review process; or
- (2) exclude the awarding of any proposal by means of the merit-review or peer-review process.

**SEC. 7004. SENSE OF THE CONGRESS REGARDING THE MATHEMATICS AND SCIENCE PARTNERSHIP PROGRAMS OF THE DEPARTMENT OF EDUCATION AND THE NATIONAL SCIENCE FOUNDATION.**

It is the sense of the Congress that—

- (1) although the mathematics and science education partnership program at the Foundation and the mathematics and science partnership program at the Department of Education practically share the same name, the 2 programs are intended to be complementary, not duplicative;
- (2) the Foundation partnership programs are innovative, model reform initiatives that move promising ideas in education from research into practice to improve teacher quality, develop challenging curricula, and increase student achievement in mathematics and science, and Congress intends that the Foundation peer-reviewed partnership programs found to be effective should be put into wider practice by dissemination through the Department of Education partnership programs; and
- (3) the Director and the Secretary of Education should have ongoing collaboration to ensure that the 2 components of this priority effort for mathematics and science education continue to work in concert for the benefit of States and local practitioners nationwide.

**SEC. 7005. CURRICULA.**

Nothing in this title, or the amendments made by this title, shall be construed to limit the authority of State governments or local school boards to determine the curricula of their students.

**SEC. 7006. CENTERS FOR RESEARCH ON LEARNING AND EDUCATION IMPROVEMENT.**

(a) **FUNDING FOR CENTERS.**—The Director shall continue to carry out the program of Centers for Research on Learning and Education Improvement as established in section 11 of the National Science Foundation Authorization Act of 2002 (42 U.S.C. 1862n–2).

(b) **ELIGIBILITY FOR CENTERS.**—Section 11 of the National Science Foundation Authorization Act of 2002 (42 U.S.C. 1862n–2) is amended—

- (1) in subsection (a)(1), by inserting “or eligible nonprofit organizations” after “institutions of higher education”;
- (2) in subsection (b)(1), by inserting “or an eligible nonprofit organization” after “institution of higher education”; and
- (3) in subsection (b)(1), by striking “of such institutions” and inserting “thereof”.

**SEC. 7007. INTERDISCIPLINARY RESEARCH.**

(a) **IN GENERAL.**—The Board shall evaluate the role of the Foundation in supporting interdisciplinary research, including through the Major Research Instrumentation program, the effectiveness of the Foundation's efforts in providing information to the scientific community about opportunities for funding of interdisciplinary research proposals, and the process through which interdisciplinary proposals are selected for support. The Board shall also evaluate the effectiveness of the Foundation's efforts to engage undergraduate students in research experiences in interdisciplinary settings, including through the Research in Undergraduate Institutions program and the Research Experiences for Undergraduates program.

(b) **REPORT.**—Not later than 1 year after the date of enactment of this Act, the Board shall provide the results of its evaluation under subsection (a), including a recommendation for the proportion of the Foundation's research and related activities funding that should be allocated for interdisciplinary research, to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation and the Committee on Health, Education, Labor, and Pensions of the Senate.

**SEC. 7008. POSTDOCTORAL RESEARCH FELLOWS.**

(a) **MENTORING.**—The Director shall require that all grant applications that include funding to support postdoctoral researchers include a description of the mentoring activities that will be provided for such individuals, and shall ensure that this part of the application is evaluated under the Foundation's broader impacts merit review criterion. Mentoring activities may include career counseling, training in preparing grant applications, guidance on ways to improve teaching skills, and training in research ethics.

(b) **REPORTS.**—The Director shall require that annual reports and the final report for research grants that include funding to support postdoctoral researchers include a description of the mentoring activities provided to such researchers.

**SEC. 7009. RESPONSIBLE CONDUCT OF RESEARCH.**

The Director shall require that each institution that applies for financial assistance from the Foundation for science and engineering research or education describe in its grant proposal a plan to provide appropriate training and oversight in the responsible and ethical conduct of research to undergraduate students, graduate students, and postdoctoral researchers participating in the proposed research project.

**SEC. 7010. REPORTING OF RESEARCH RESULTS.**

The Director shall ensure that all final project reports and citations of published research documents resulting from research funded, in whole or in part, by the Foundation, are made available to the public in a timely manner and in electronic form through the Foundation's Web site.

**SEC. 7011. SHARING RESEARCH RESULTS.**

An investigator supported under a Foundation award, whom the Director determines has failed to comply with the provisions of section 734 of the Foundation Grant Policy Manual, shall be



ineligible for a future award under any Foundation supported program or activity. The Director may restore the eligibility of such an investigator on the basis of the investigator's subsequent compliance with the provisions of section 734 of the Foundation Grant Policy Manual and with such other terms and conditions as the Director may impose.

**SEC. 7012. FUNDING FOR SUCCESSFUL SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS EDUCATION PROGRAMS.**

(a) **EVALUATION OF PROGRAMS.**—The Director shall, on an annual basis, evaluate all of the Foundation's grants that are scheduled to expire within 1 year and—

(1) that have the primary purpose of meeting the objectives of the Science and Engineering Equal Opportunity Act (42 U.S.C. 1885 et seq.); or

(2) that have the primary purpose of providing teacher professional development.

(b) **CONTINUATION OF FUNDING.**—For grants that are identified under subsection (a) and that are determined by the Director to be successful in meeting the objectives of the initial grant solicitation, the Director may extend the duration of those grants for not more than 3 additional years beyond their scheduled expiration without the requirement for a recompetition.

(c) **REPORT TO CONGRESS.**—Not later than 1 year after the date of enactment of this Act, and annually thereafter, the Director shall submit a report to the Committee on Science and Technology of the House of Representatives and to the Committee on Commerce, Science, and Transportation and the Committee on Health, Education, Labor, and Pensions of the Senate that—

(1) lists the grants that have been extended in duration by the authority provided under this section; and

(2) provides any recommendations the Director may have regarding the extension of the authority provided under this section to programs other than those specified in subsection (a).

**SEC. 7013. COST SHARING.**

(a) **IN GENERAL.**—The Board shall evaluate the impact of its policy to eliminate cost sharing for research grants and cooperative agreements for existing programs that were developed around industry partnerships and historically required industry cost sharing, such as the Engineering Research Centers and Industry/University Cooperative Research Centers. The Board shall also consider the impact that the cost sharing policy has on initiating new programs for which industry interest and participation are sought.

(b) **REPORT.**—Not later than 6 months after the date of enactment of this Act, the Board shall report to the Committee on Science and Technology and the Committee on Appropriations of the House of Representatives, and the Committee on Commerce, Science, and Transportation, the Committee on Health, Education, Labor, and Pensions, and the Committee on Appropriations of the Senate, on the results of the evaluation under subsection (a).

**SEC. 7014. ADDITIONAL REPORTS.**

(a) **REPORT ON FUNDING FOR MAJOR FACILITIES.**—

(1) PRECONSTRUCTION FUNDING.—The Board shall evaluate the appropriateness of the requirement that funding for detailed design work and other preconstruction activities for major research equipment and facilities come exclusively from the sponsoring research division rather than being available, at least in part, from the Major Research Equipment and Facilities Construction account.

(2) MAINTENANCE AND OPERATION COSTS.—The Board shall evaluate the appropriateness of the Foundation’s policies for allocation of costs for, and oversight of, maintenance and operation of major research equipment and facilities.

(3) REPORT.—Not later than 6 months after the date of enactment of this Act, the Board shall report on the results of the evaluations under paragraphs (1) and (2) and on any recommendations for modifying the current policies related to allocation of funding for major research equipment and facilities to the Committee on Science and Technology and the Committee on Appropriations of the House of Representatives, and to the Committee on Commerce, Science, and Transportation, the Committee on Health, Education, Labor, and Pensions, and the Committee on Appropriations of the Senate.

(b) INCLUSION OF POLAR FACILITIES UPGRADES IN MAJOR RESEARCH EQUIPMENT AND FACILITIES CONSTRUCTION PLAN.—Section 201(a)(2)(D) of the National Science Foundation Authorization Act of 1998 (42 U.S.C. 1862l(a)(2)(D)) is amended by inserting “and for major upgrades of facilities in support of Antarctic research programs” after “facilities construction account”.

(c) REPORT ON EDUCATION PROGRAMS WITHIN THE RESEARCH DIRECTORATES.—Not later than 6 months after the date of enactment of this Act, the Director shall transmit to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation and the Committee on Health, Education, Labor, and Pensions of the Senate a report cataloging all elementary school and secondary school, informal, and undergraduate educational programs and activities supported through appropriations for Research and Related Activities. The report shall display the programs and activities by directorate, along with estimated funding levels for the fiscal years 2006, 2007, and 2008, and shall provide a description of the goals of each program and activity. The report shall also describe how the programs and activities relate to or are coordinated with the programs supported by the Education and Human Resources Directorate.

(d) REPORT ON RESEARCH IN UNDERGRADUATE INSTITUTIONS PROGRAM.—The Director shall transmit to Congress, as part of the President’s fiscal year 2011 budget submission under section 1105 of title 31, United States Code, a report listing the funding success rates and distribution of awards for the Research in Undergraduate Institutions program, by type of institution based on the highest academic degree conferred by the institution, for fiscal years 2008, 2009, and 2010.

(e) ANNUAL PLAN FOR ALLOCATION OF EDUCATION AND HUMAN RESOURCES FUNDING.—

(1) IN GENERAL.—Not later than 60 days after the date of enactment of legislation providing for the annual appropriation of funds for the Foundation, the Director shall submit to the Committee on Science and Technology and the Committee

on Appropriations of the House of Representatives, and to the Committee on Commerce, Science, and Transportation, the Committee on Health, Education, Labor, and Pensions, and the Committee on Appropriations of the Senate, a plan for the allocation of education and human resources funds authorized by this title for the corresponding fiscal year, including any funds from within the research and related activities account used to support activities that have the primary purpose of improving education or broadening participation.

(2) SPECIFIC REQUIREMENTS.—The plan shall include a description of how the allocation of funding—

(A) will affect the average size and duration of education and human resources grants supported by the Foundation;

(B) will affect trends in research support for the effective instruction of science, technology, engineering, and mathematics;

(C) will affect the kindergarten through grade 20 pipeline for the study of science, technology, engineering, and mathematics; and

(D) will encourage the interest of individuals identified in section 33 or 34 of the Science and Engineering Equal Opportunities Act (42 U.S.C. 1885a or 1885b) in science, technology, engineering, and mathematics, and help prepare such individuals to pursue postsecondary studies in these fields.

**SEC. 7015. ADMINISTRATIVE AMENDMENTS.**

(a) TRIANNUAL AUDIT OF THE OFFICE OF THE NATIONAL SCIENCE BOARD.—Section 15(a) of the National Science Foundation Authorization Act of 2002 (42 U.S.C. 1862n–5) is amended—

(1) in paragraph (3), by striking “an annual audit” and inserting “an audit every three years”;

(2) in paragraph (4), by striking “each year” and inserting “every third year”; and

(3) by inserting after paragraph (4) the following:

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

(b) LIMITED TERM PERSONNEL FOR THE NATIONAL SCIENCE BOARD.—Subsection (g) of section 4 of the National Science Foundation Act of 1950 (42 U.S.C. 1863(g)) is amended to read as follows:

“(g) The Board may, with the concurrence of a majority of its members, permit the appointment of a staff consisting of not more than 5 professional staff members, technical and professional personnel on leave of absence from academic, industrial, or research institutions for a limited term, and such operations and support staff members as may be necessary. Such staff shall be appointed by the Chairman and assigned at the direction of the Board. The professional members and limited term technical and professional personnel of such staff may be appointed without regard to the provisions of title 5, United States Code, governing appointments in the competitive service, and the provisions of chapter 51 of such title relating to classification, and shall be compensated at

a rate not exceeding the maximum rate payable under section 5376 of such title, as may be necessary to provide for the performance of such duties as may be prescribed by the Board in connection with the exercise of its powers and functions under this Act. Section 14(a)(3) shall apply to each limited term appointment of technical and professional personnel under this subsection. Each appointment under this subsection shall be subject to the same security requirements as those required for personnel of the Foundation appointed under section 14(a).”.

(c) INCREASE IN NUMBER OF WATERMAN AWARDS TO THREE.—Section 6(c) of the National Science Foundation Authorization Act, 1976 (42 U.S.C. 1881a) is amended to read as follows:

“(c) Not more than three awards may be made under this section in any one fiscal year.”.

**SEC. 7016. NATIONAL SCIENCE BOARD REPORTS.**

Paragraphs (1) and (2) of section 4(j) of the National Science Foundation Act of 1950 (42 U.S.C. 1863(j)(1) and (2)) are amended by striking “, for submission to” and “for submission to”, respectively, and inserting “and”.

**SEC. 7017. PROGRAM FRAUD CIVIL REMEDIES ACT OF 1986 AMENDMENT.**

Section 3801(a)(1) of title 31, United States Code (commonly known as the “Program Fraud Civil Remedies Act of 1986”) is amended—

(1) in subparagraph (C), by striking “and” after the semicolon;

(2) in subparagraph (D), by inserting “and” after the semicolon; and

(3) by adding at the end the following:  
“(E) the National Science Foundation.”.

**SEC. 7018. MEETING CRITICAL NATIONAL SCIENCE NEEDS.**

(a) IN GENERAL.—In addition to any other criteria, the Director shall include consideration of the degree to which awards and research activities that otherwise qualify for support by the Foundation may assist in meeting critical national needs in innovation, competitiveness, safety and security, the physical and natural sciences, technology, engineering, social sciences, and mathematics.

(b) PRIORITY TREATMENT.—The Director shall give priority in the selection of awards and the allocation of Foundation resources to proposed research activities, and grants funded under the Foundation’s Research and Related Activities Account, that can be expected to make contributions in physical or natural science, technology, engineering, social sciences, or mathematics, or that enhance competitiveness, innovation, or safety and security in the United States.

(c) LIMITATION.—Nothing in this section shall be construed to restrict or bias the grant selection process against funding other areas of research deemed by the Foundation to be consistent with its mandate nor to change the core mission of the Foundation.

**SEC. 7019. RESEARCH ON INNOVATION AND INVENTIVENESS.**

In carrying out its research programs on science policy and on the science of learning, the Foundation may support research on the process of innovation and the teaching of inventiveness.

**SEC. 7020. CYBERINFRASTRUCTURE.**

In order to continue and expand efforts to ensure that research institutions throughout the Nation can fully participate in research programs of the Foundation and collaborate with colleagues throughout the Nation, the Director, not later than 180 days after the date of enactment of this Act, shall develop and publish a plan that—

(1) describes the current status of broadband access for scientific research purposes at institutions in EPSCoR-eligible States, at institutions in rural areas, and at minority serving institutions; and

(2) outlines actions that can be taken to ensure that such connections are available to enable participation in those Foundation programs that rely heavily on high-speed networking and collaborations across institutions and regions.

**SEC. 7021. PILOT PROGRAM OF GRANTS FOR NEW INVESTIGATORS.**

(a) **IN GENERAL.**—The Director shall carry out a pilot program to award 1-year grants to individuals to assist them in improving research proposals that were previously submitted to the Foundation but not selected for funding.

(b) **ELIGIBILITY.**—To be eligible to receive a grant under this section, an individual—

(1) may not have previously received funding as the principal investigator of a research grant from the Foundation; and

(2) shall have submitted a proposal to the Foundation, which may include a proposal submitted to the Research in Undergraduate Institutions program, that was rated excellent under the Foundation's competitive merit review process.

(c) **SELECTION PROCESS.**—The Director shall make awards under this section based on the advice of the program officers of the Foundation.

(d) **USE OF FUNDS.**—Grants awarded under this section shall be used to enable an individual to resubmit an updated research proposal for review by the Foundation through the agency's competitive merit review process. Uses of funds made available under this section may include the generation of new data and the performance of additional analysis.

(e) **PROGRAM ADMINISTRATION.**—The Director shall carry out this section through the Small Grants for Exploratory Research program.

(f) **NATIONAL SCIENCE BOARD REVIEW.**—The Board shall conduct a review and assessment of the pilot program under this section, including the number of new investigators funded, the distribution of awards by type of institution of higher education, and the success rate upon resubmittal of proposals by new investigators funded through such pilot program. Not later than 3 years after the date of enactment of this Act, the Board shall summarize its findings and any recommendations regarding changes to, the termination of, or the continuation of the pilot program in a report to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation and the Committee on Health, Education, Labor, and Pensions of the Senate.

**SEC. 7022. BROADER IMPACTS MERIT REVIEW CRITERION.**

(a) **IN GENERAL.**—Among the types of activities that the Foundation shall consider as appropriate for meeting the requirements of its broader impacts criterion for the evaluation of research proposals are partnerships between academic researchers and industrial scientists and engineers that address research areas identified as having high importance for future national economic competitiveness, such as nanotechnology.

(b) **REPORT ON BROADER IMPACTS CRITERION.**—Not later than 1 year after the date of enactment of this Act, the Director shall transmit to Congress a report on the impact of the broader impacts grant criterion used by the Foundation. The report shall—

(1) identify the criteria that each division and directorate of the Foundation uses to evaluate the broader impacts aspects of research proposals;

(2) provide a breakdown of the types of activities by division that awardees have proposed to carry out to meet the broader impacts criterion;

(3) provide any evaluations performed by the Foundation to assess the degree to which the broader impacts aspects of research proposals were carried out and how effective they have been at meeting the goals described in the research proposals;

(4) describe what national goals, such as improving undergraduate science, technology, engineering, and mathematics education, improving kindergarten through grade 12 science and mathematics education, promoting university-industry collaboration, and broadening participation of underrepresented groups, the broader impacts criterion is best suited to promote; and

(5) describe what steps the Foundation is taking and should take to use the broader impacts criterion to improve undergraduate science, technology, engineering, and mathematics education.

**SEC. 7023. DONATIONS.**

Section 11(f) of the National Science Foundation Act of 1950 (42 U.S.C. 1870(f)) is amended by inserting before the semicolon “, except that funds may be donated for specific prize competitions for ‘basic research’ as defined in the Office of Management and Budget Circular No. A–11”.

**SEC. 7024. HIGH-PERFORMANCE COMPUTING AND NETWORKING.**

(a) **HIGH-PERFORMANCE COMPUTING ACT OF 1991.**—

(1) **AMENDMENTS.**—Title I of the High-Performance Computing Act of 1991 (15 U.S.C. 5511 et seq.) is amended—

(A) in the title heading, by striking “**AND THE NATIONAL RESEARCH AND EDUCATION NETWORK**” and inserting “**RESEARCH AND DEVELOPMENT**”;

(B) in section 101(a) (15 U.S.C. 5511(a))—

(i) by striking subparagraphs (A) and (B) of paragraph (1) and inserting the following:

“(A) provide for long-term basic and applied research on high-performance computing, including networking;

“(B) provide for research and development on, and demonstration of, technologies to advance the capacity and capabilities of high-performance computing and networking systems, and related software;

“(C) provide for sustained access by the research community throughout the United States to high-performance computing and networking systems that are among the most advanced in the world in terms of performance in solving scientific and engineering problems, including provision for technical support for users of such systems;

“(D) provide for widely dispersed efforts to increase software availability, productivity, capability, security, portability, and reliability;

“(E) provide for high-performance networks, including experimental testbed networks, to enable research and development on, and demonstration of, advanced applications enabled by such networks;

“(F) provide for computational science and engineering research on mathematical modeling and algorithms for applications in all fields of science and engineering;

“(G) provide for the technical support of, and research and development on, high-performance computing systems and software required to address Grand Challenges;

“(H) provide for educating and training additional undergraduate and graduate students in software engineering, computer science, computer and network security, applied mathematics, library and information science, and computational science; and

“(I) provide for improving the security of computing and networking systems, including Federal systems, including providing for research required to establish security standards and practices for these systems.”;

(ii) by striking paragraph (2) and redesignating paragraphs (3) and (4) as paragraphs (2) and (3), respectively;

(iii) in paragraph (2), as redesignated by clause (ii)—

(I) by striking subparagraph (B);

(II) by redesignating subparagraphs (A) and (C) as subparagraphs (D) and (F), respectively;

(III) by inserting before subparagraph (D), as redesignated by subclause (II), the following:

“(A) establish the goals and priorities for Federal high-performance computing research, development, networking, and other activities;

“(B) establish Program Component Areas that implement the goals established under subparagraph (A), and identify the Grand Challenges that the Program should address;

“(C) provide for interagency coordination of Federal high-performance computing research, development, networking, and other activities undertaken pursuant to the Program;”;

(IV) by inserting after subparagraph (D), as redesignated by subclause (II) of this clause, the following:

“(E) develop and maintain a research, development, and deployment roadmap covering all States and regions for the

provision of high-performance computing and networking systems under paragraph (1)(C); and”; and

(iv) in paragraph (3), as so redesignated by clause (ii) of this subparagraph—

(I) by striking “paragraph (3)(A)” and inserting “paragraph (2)(D)”;

(II) by amending subparagraph (A) to read as follows:

“(A) provide a detailed description of the Program Component Areas, including a description of any changes in the definition of or activities under the Program Component Areas from the preceding report, and the reasons for such changes, and a description of Grand Challenges addressed under the Program;”;

(III) in subparagraph (C), by striking “specific activities” and all that follows through “the Network” and inserting “each Program Component Area”;

(IV) in subparagraph (D), by inserting “, and for each Program Component Area,” after “participating in the Program”;

(V) in subparagraph (D), by striking “applies;” and inserting “applies; and”;

(VI) by striking subparagraph (E) and redesignating subparagraph (F) as subparagraph (E); and

(VII) in subparagraph (E), as redesignated by subclause (VI), by inserting “and the extent to which the Program incorporates the recommendations of the advisory committee established under subsection (b)” after “for the Program”;

(C) by striking subsection (b) of section 101 (15 U.S.C. 5511) and inserting the following:

“(b) ADVISORY COMMITTEE.—(1) The President shall establish an advisory committee on high-performance computing, consisting of geographically dispersed non-Federal members, including representatives of the research, education, and library communities, network and related software providers, and industry representatives in the Program Component Areas, who are specially qualified to provide the Director with advice and information on high-performance computing. The recommendations of the advisory committee shall be considered in reviewing and revising the Program. The advisory committee shall provide the Director with an independent assessment of—

“(A) progress made in implementing the Program;

“(B) the need to revise the Program;

“(C) the balance between the components of the Program, including funding levels for the Program Component Areas;

“(D) whether the research and development undertaken pursuant to the Program is helping to maintain United States leadership in high-performance computing, networking technology, and related software; and

“(E) other issues identified by the Director.

“(2) In addition to the duties outlined in paragraph (1), the advisory committee shall conduct periodic evaluations of the funding, management, coordination, implementation, and activities of the Program. The advisory committee shall report not less frequently than once every 2 fiscal years to the Committee on Science



and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation of the Senate on its findings and recommendations. The first report shall be due within 1 year after the date of enactment of the America COMPETES Act.

“(3) Section 14 of the Federal Advisory Committee Act shall not apply to the advisory committee established under this subsection.”; and

(D) in section 101(c) (15 U.S.C. 5511(c))—

(i) in paragraph (1)(A), by striking “Program or” and inserting “Program Component Areas or”; and

(ii) in paragraph (2), by striking “subsection (a)(3)(A)” and inserting “subsection (a)(2)(D)”.

(2) DEFINITIONS.—Section 4 of the High-Performance Computing Act of 1991 (15 U.S.C. 5503) is amended—

(A) in paragraph (2), by inserting “and multidisciplinary teams of researchers” after “high-performance computing resources”;

(B) in paragraph (3)—

(i) by striking “scientific workstations,”;

(ii) by striking “(including vector supercomputers and large scale parallel systems)”;

(iii) by striking “and applications” and inserting “applications”; and

(iv) by inserting “, and the management of large data sets” after “systems software”;

(C) in paragraph (4), by striking “packet switched”;

(D) by striking “and” at the end of paragraph (5);

(E) by striking the period at the end of paragraph

(6) and inserting “; and”;

(F) by adding at the end the following:

“(7) ‘Program Component Areas’ means the major subject areas under which related individual projects and activities carried out under the Program are grouped.”.

(3) CONFORMING AMENDMENT.—Section 1(26) of the Act entitled “An Act to prevent the elimination of certain reports”, approved November 28, 2001 (31 U.S.C. 3113 note) is amended—

(A) by striking “101(a)(3)” and inserting “101(a)(2)”;

and

(B) by striking “(15 U.S.C. 5511(a)(3))” and inserting “(15 U.S.C. 5511(a)(2))”.

(b) ADVANCED INFORMATION AND COMMUNICATIONS TECHNOLOGY RESEARCH.—

(1) IN GENERAL.—As part of the Program described in title I of the High-Performance Computing Act of 1991 (15 U.S.C. 5511 et seq.), the Foundation shall support basic research related to advanced information and communications technologies that will contribute to enhancing or facilitating the availability and affordability of advanced communications services for all people of the United States. Areas of research to be supported may include research on—

(A) affordable broadband access, including wireless technologies;

(B) network security and reliability;

(C) communications interoperability;

- (D) networking protocols and architectures, including resilience to outages or attacks;
- (E) trusted software;
- (F) privacy;
- (G) nanoelectronics for communications applications;
- (H) low-power communications electronics;
- (I) implementation of equitable access to national advanced fiber optic research and educational networks in noncontiguous States; and
- (J) such other related areas as the Director finds appropriate.

(2) CENTERS.—The Director shall award multiyear grants, subject to the availability of appropriations and on a merit-reviewed competitive basis, to institutions of higher education, nonprofit research institutions affiliated with institutions of higher education, or consortia of either type of institution to establish multidisciplinary Centers for Communications Research. The purpose of the Centers shall be to generate innovative approaches to problems in information and communications technology research, including the research areas described in paragraph (1). Institutions of higher education, nonprofit research institutions affiliated with institutions of higher education, or consortia receiving such grants may partner with 1 or more government laboratories, for-profit entities, or other institutions of higher education or nonprofit research institutions.

(3) FUNDING ALLOCATION.—The Director shall increase funding for the basic research activities described in paragraph (1), which shall include support for the Centers described in paragraph (2), in proportion to the increase in the total amount appropriated to the Foundation for research and related activities for the fiscal years 2008 through 2010.

(4) REPORT TO CONGRESS.—The Director shall transmit to Congress, as part of the President’s annual budget submission under section 1105 of title 31, United States Code, a report on the amounts allocated for support of research under this subsection for the fiscal year during which such report is submitted and the levels proposed for the fiscal year with respect to which the budget submission applies.

**SEC. 7025. SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS TALENT EXPANSION PROGRAM.**

(a) AMENDMENTS.—Section 8(7) of the National Science Foundation Authorization Act of 2002 is amended—

(1) in subparagraph (A), by striking “competitive, merit-based” and all that follows through “in recent years.” and inserting “competitive, merit-based multiyear grants for eligible applicants to improve undergraduate education in science, technology, engineering, and mathematics through—

“(i) the creation of programs to increase the number of students studying toward and completing associate’s or bachelor’s degrees in science, technology, engineering, and mathematics, particularly in fields that have faced declining enrollment in recent years; and

“(ii) the creation of not more than 5 centers (in this paragraph referred to as ‘Centers’) to increase the number of students completing undergraduate courses in science,

technology, engineering, and mathematics, including the number of nonmajors, and to improve student academic achievement in those courses, by developing—

“(I) undergraduate educational material, including curricula and courses of study;

“(II) teaching methods for undergraduate courses; and

“(III) methods to improve the professional development of professors and teaching assistants who teach undergraduate courses.

Grants made under clause (ii) shall be awarded jointly through the Education and Human Resources Directorate and at least 1 research directorate of the Foundation.”;

(2) by amending subparagraph (B) to read as follows:

“(B) In selecting projects under subparagraph (A)(i), the Director shall strive to increase the number of students studying toward and completing associate’s or bachelor’s degrees, concentrations, or certificates in science, technology, engineering, or mathematics by giving priority to programs that heavily recruit individuals who are—

“(i) individuals identified in section 33 or 34 of the Science and Engineering Equal Opportunities Act (42 U.S.C. 1885a or 1885b); or

“(ii) graduates of a public secondary school that—

“(I) is among the highest 25 percent of schools served by the local educational agency that serves the school, in terms of the percentage of students from families with incomes below the poverty line, as defined in section 673(2) of the Community Services Block Grant Act (42 U.S.C. 9902(2)), applicable to a family of the size involved; or

“(II) is designated with a school locale code of 41, 42, or 43, as determined by the Secretary of Education.”;

(3) by striking subparagraph (C) and inserting the following:

“(C)(i) The types of projects the Foundation may support under subparagraph (A)(i) include those programs that—

“(I) promote high quality—

“(aa) interdisciplinary teaching;

“(bb) undergraduate-conducted research;

“(cc) mentor relationships for students, especially underrepresented minority and female science, technology, engineering, and mathematics students;

“(dd) bridge programs that enable students at community colleges to matriculate directly into baccalaureate science, technology, engineering, or mathematics programs;

“(ee) internships carried out in partnership with industry;

“(ff) innovative uses of digital technologies, particularly at institutions of higher education that serve high numbers or percentages of economically disadvantaged students; and

“(gg) bridge programs that enable underrepresented minority and female secondary school students to obtain extra science, technology, engineering,

and mathematics instruction prior to entering an institution of higher education;

“(II) finance summer internships for science, technology, engineering, and mathematics undergraduate students; and

“(III) conduct outreach programs that provide secondary school students and their science, technology, engineering, and mathematics teachers opportunities to increase the students’ and teachers’ exposure to engineering and technology.

“(ii) The types of activities the Foundation may support under subparagraph (A)(ii) include—

“(I) creating model curricula and laboratory programs;

“(II) developing and demonstrating research-based instructional methods and technologies;

“(III) developing methods to train graduate students and faculty to be more effective teachers of undergraduates;

“(IV) conducting programs to disseminate curricula, instructional methods, or training methods to faculty at the grantee institutions and at other institutions;

“(V) conducting assessments of the effectiveness of the Center at accomplishing the goals described in subparagraph (A)(ii); and

“(VI) conducting any other activities the Director determines will accomplish the goals described in subparagraph (A)(ii).”;

(4) in subparagraph (D)(i), by striking “under this paragraph” and inserting “under subparagraph (A)(i)”;

(5) in subparagraph (D)(ii), by striking “under this paragraph” and inserting “under subparagraph (A)(i)”;

(6) after subparagraph (D)(iii), by adding at the end the following:

“(iv) A grant under subparagraph (A)(ii) shall be awarded for up to 5 years.”;

(7) in subparagraph (E), by striking “under this paragraph” both places it appears and inserting “under subparagraph (A)(i)”;

(8) by redesignating subparagraph (F) as subparagraph (J); and

(9) by inserting after subparagraph (E) the following:

“(F) Grants awarded under subparagraph (A)(ii) shall be carried out by a department or departments of science, technology, engineering, or mathematics at institutions of higher education (or a consortia thereof), which may partner with the department, college, or school of education at the institution. Applications for awards under subparagraph (A)(ii) shall be submitted to the Director at such time, in such manner, and containing such information as the Director may require. At a minimum, the application shall include—

“(i) a description of the activities to be carried out by the Center;

“(ii) a plan for disseminating programs related to the activities carried out by the Center to faculty at the grantee institution and at other institutions;

“(iii) an estimate of the number of faculty, graduate students (if any), and undergraduate students who will

be affected by the activities carried out by the Center; and

“(iv) a plan for assessing the effectiveness of the Center at accomplishing the goals described in subparagraph (A)(ii).

“(G) In evaluating the applications submitted under subparagraph (F), the Director shall consider, at a minimum—

“(i) the ability of the applicant to effectively carry out the proposed activities, including the dissemination activities described in subparagraph (C)(ii)(IV); and

“(ii) the extent to which the faculty, staff, and administrators of the applicant institution are committed to improving undergraduate science, technology, engineering, and mathematics education.

“(H) In awarding grants under subparagraph (A)(ii), the Director shall ensure that a wide variety of science, technology, engineering, and mathematics fields and types of institutions of higher education, including 2-year colleges and minority-serving institutions, are covered, and that—

“(i) at least 1 Center is housed at a Doctoral/Research University as defined by the Carnegie Foundation for the Advancement of Teaching; and

“(ii) at least 1 Center is focused on improving undergraduate education in an interdisciplinary area.

“(I) The Director shall convene an annual meeting of the awardees under this paragraph to foster collaboration and to disseminate the results of the Centers and the other activities funded under this paragraph.”.

(b) REPORT ON DATA COLLECTION.—Not later than 180 days after the date of enactment of this Act, the Director shall transmit to Congress a report on how the Director is determining whether current grant recipients in the Science, Technology, Engineering, and Mathematics Talent Expansion Program are making satisfactory progress as required by section 8(7)(D)(ii) of the National Science Foundation Authorization Act of 2002 and what funding actions have been taken as a result of the Director’s determinations.

#### **SEC. 7026. LABORATORY SCIENCE PILOT PROGRAM.**

(a) FINDINGS.—Congress finds the following:

(1) To remain competitive in science and technology in the global economy, the United States must increase the number of students graduating from high school prepared to pursue postsecondary education in science, technology, engineering, and mathematics.

(2) There is broad agreement in the scientific community that learning science requires direct involvement by students in scientific inquiry and that laboratory experience is so integral to the nature of science that it must be included in every science program for every science student.

(3) In America’s Lab Report, the National Research Council concluded that the current quality of laboratory experiences is poor for most students and that educators and researchers do not agree on how to define high school science laboratories or on their purpose, hampering the accumulation of research on how to improve laboratories.

(4) The National Research Council found that schools with higher concentrations of non-Asian minorities and schools with

higher concentrations of poor students are less likely to have adequate laboratory facilities than other schools.

(5) The Government Accountability Office reported that 49.1 percent of schools where the minority student population is greater than 50.5 percent reported not meeting functional requirements for laboratory science well or at all.

(6) 40 percent of those college students who left the science fields reported some problems related to high school science preparation, including lack of laboratory experience and no introduction to theoretical or to analytical modes of thought.

(7) It is in the national interest for the Federal Government to invest in research and demonstration projects to improve the teaching of laboratory science in the Nation's high schools.

(b) GRANT PROGRAM.—Section 8(8) of the National Science Foundation Authorization Act of 2002 is amended—

(1) by redesignating subparagraphs (A) through (F) as clauses (i) through (vi), respectively;

(2) by inserting “(A)” before “A program of competitive”; and

(3) by adding at the end the following:

“(B) In accordance with subparagraph (A)(v), the Director shall establish a research pilot program designated as ‘Partnerships for Access to Laboratory Science’ to award grants to partnerships to improve laboratories and provide instrumentation as part of a comprehensive program to enhance the quality of science, technology, engineering, and mathematics instruction at the secondary school level. Grants under this subparagraph may be used for—

“(i) professional development and training for teachers aligned with activities supported under section 2123 of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 6623);

“(ii) purchase, rental, or leasing of equipment, instrumentation, and other scientific educational materials;

“(iii) development of instructional programs designed to integrate the laboratory experience with classroom instruction and to be consistent with State mathematics and science and, to the extent applicable, technology and engineering, academic achievement standards;

“(iv) training in laboratory safety for school personnel;

“(v) design and implementation of hands-on laboratory experiences to encourage the interest of individuals identified in section 33 or 34 of the Science and Engineering Equal Opportunities Act (42 U.S.C. 1885a or 1885b) in science, technology, engineering, and mathematics and help prepare such individuals to pursue postsecondary studies in these fields; and

“(vi) assessment of the activities funded under this subparagraph.

“(C) Grants may be made under subparagraph (B) only to a partnership—

“(i) for a project that includes significant teacher preparation and professional development components; or

“(ii) that establishes that appropriate teacher preparation and professional development is being addressed, or has been addressed, through other means.

“(D) Grants awarded under subparagraph (B) shall be to a partnership that—

“(i) includes a 2-year or 4-year degree granting institution of higher education;

“(ii) includes a high need local educational agency (as defined in section 201 of the Higher Education Act of 1965);

“(iii) includes a business or eligible nonprofit organization; and

“(iv) may include a State educational agency, other public agency, National Laboratory, or community-based organization.

“(E) The Federal share of the cost of activities carried out using amounts from a grant under subparagraph (B) shall not exceed 40 percent.

“(F) The Director shall require grant recipients under subparagraph (B) to submit a report to the Director on the results of the project supported by the grant.”

(c) REPORT.—The Director shall evaluate the effectiveness of activities carried out under the research pilot projects funded by the grant program established pursuant to the amendment made by subsection (b) in improving student achievement in science, technology, engineering, and mathematics. A report documenting the results of that evaluation shall be submitted to the Committee on Science and Technology of the House of Representatives and the Committee on Commerce, Science, and Transportation and the Committee on Health, Education, Labor, and Pensions of the Senate not later than 5 years after the date of enactment of this Act. The report shall identify best practices and materials developed and demonstrated by grant awardees.

(d) SUNSET.—The provisions of this section shall cease to have force or effect on the last day of fiscal year 2010.

(e) AUTHORIZATION OF APPROPRIATIONS.—From the amounts authorized under subsections (a)(2)(B), (b)(2)(B), and (c)(2)(B) of section 7002, there are authorized to be appropriated to carry out this section and the amendments made by this section \$5,000,000 for fiscal year 2008, and such sums as may be necessary for each of the 2 succeeding fiscal years.

#### **SEC. 7027. STUDY ON LABORATORY EQUIPMENT DONATIONS FOR SCHOOLS.**

Not later than 2 years after the date of enactment of this Act, the Director shall transmit a report to Congress examining the extent to which institutions of higher education and entities in the private sector are donating used laboratory equipment to elementary schools and secondary schools. The Director, in consultation with the Secretary of Education, shall survey institutions of higher education and entities in the private sector to determine—

(1) how often, how much, and what type of equipment is donated;

(2) what criteria or guidelines the institutions and entities are using to determine what types of equipment can be donated, what condition the equipment should be in, and which schools receive the equipment;

(3) whether the institutions and entities provide any support to, or follow-up with the schools; and

(4) how appropriate donations can be encouraged.

**SEC. 7028. MATHEMATICS AND SCIENCE EDUCATION PARTNERSHIPS  
AMENDMENTS.**

Section 9 of the National Science Foundation Authorization Act of 2002 (42 U.S.C. 1862n) is amended—

(1) in subsection (a)(2)(A), by striking “a State educational agency” and inserting “the department, college, or program of education at an institution of higher education, a State educational agency,”;

(2) by striking subparagraph (B) of subsection (a)(3) and inserting the following:

“(B) offering professional development programs, including—

“(i) teacher institutes for the 21st century, as described in paragraph (10); and

“(ii) academic year institutes or workshops that—

“(I) are designed to strengthen the capabilities of mathematics and science teachers; and

“(II) may include professional development activities to prepare mathematics and science teachers to teach challenging mathematics, science, and technology college-preparatory courses;”;

(3) in subsection (a)(3)(C)—

(A) by inserting “and laboratory experiences” after “technology”; and

(B) by inserting “and laboratory” after “provide technical”;

(4) in subsection (a)(3)(I), by inserting “including the use of induction programs, as defined in section 6113(h) of the America COMPETES Act, for teachers in their first 2 years of teaching,” after “and science,”;

(5) by striking subparagraph (K) of section (a)(3) and inserting the following:

“(K) developing science, technology, engineering, and mathematics educational programs and materials and conducting science, technology, engineering, and mathematics enrichment programs for students, including after-school programs and summer programs, with an emphasis on including and serving students described in subsection (b)(2)(G);”;

(6) in subsection (a), by adding at the end the following:

“(8) **MENTORS FOR TEACHERS AND STUDENTS OF CHALLENGING COURSES.**—Partnerships carrying out activities to prepare mathematics and science teachers to teach challenging mathematics, science, and technology college-preparatory courses in accordance with paragraph (3)(B) shall encourage companies employing scientists, technologists, engineers, or mathematicians to provide mentors to teachers and students and provide for the coordination of such mentoring activities.

“(9) **INNOVATION.**—Activities carried out in accordance with paragraph (3)(H) may include the development and dissemination of curriculum tools that will help foster inventiveness and innovation.”;

(7) in subsection (b)(2)—

(A) by redesignating subparagraphs (E) and (F) as subparagraphs (F) and (G), respectively; and

(B) by inserting after subparagraph (D) the following:



“(E) the extent to which the evaluation described in paragraph (1)(E) will be independent and based on objective measures;”;

(8) by striking paragraph (2) of subsection (c) and inserting the following:

“(2) REPORT ON EVALUATIONS.—Not later than 4 years after the date of enactment of the America COMPETES Act, the Director shall transmit a report summarizing the evaluations required under subsection (b)(1)(E) of grants received under this program and describing any changes to the program recommended as a result of these evaluations to the Committee on Science and Technology and the Committee on Education and Labor of the House of Representatives and to the Committee on Commerce, Science, and Transportation and the Committee on Health, Education, Labor, and Pensions of the Senate. Such report shall be made widely available to the public.”; and

(9) by adding at the end the following:

“(d) DEFINITIONS.—In this section—

“(1) the term ‘mathematics and science teacher’ means a science, technology, engineering, or mathematics teacher at the elementary school or secondary school level; and

“(2) the term ‘science’, in the context of elementary and secondary education, includes technology and pre-engineering.”.

**SEC. 7029. NATIONAL SCIENCE FOUNDATION TEACHER INSTITUTES FOR THE 21ST CENTURY.**

Section 9(a) of the National Science Foundation Authorization Act of 2002 (as amended by section 7028) (42 U.S.C. 1862n(a)) is further amended by adding at the end the following:

“(10) TEACHER INSTITUTES FOR THE 21ST CENTURY.—

“(A) IN GENERAL.—Teacher institutes for the 21st century carried out in accordance with paragraph (3)(B) shall—

“(i) be carried out in conjunction with a school served by the local educational agency in the partnership;

“(ii) be science, technology, engineering, and mathematics focused institutes that provide professional development to elementary school and secondary school teachers;

“(iii) serve teachers who—

“(I) are considered highly qualified (as defined in section 9101 of the Elementary and Secondary Education Act of 1965);

“(II) teach high-need subjects in science, technology, engineering, or mathematics; and

“(III) teach in high-need schools (as described in section 1114(a)(1) of the Elementary and Secondary Education Act of 1965);

“(iv) focus on the priorities developed by the Director in consultation with a broad group of relevant educational organizations;

“(v) be content-based and build on school year curricula that are experiment-oriented, content-based, and grounded in current research;

“(vi) ensure that the pedagogy component is designed around specific strategies that are relevant

to teaching the subject and content on which teachers are being trained, which may include training teachers in the essential components of reading instruction for adolescents in order to improve student reading skills within the subject areas of science, technology, engineering, and mathematics;

“(vii) be a multiyear program that is conducted for a period of not less than 2 weeks per year;

“(viii) provide for direct interaction between participants in and faculty of the teacher institute;

“(ix) have a component that includes the use of the Internet;

“(x) provide for followup training in the classroom during the academic year for a period of not less than 3 days, which may or may not be consecutive, for participants in the teacher institute, except that for teachers in rural local educational agencies, the followup training may be provided through the Internet;

“(xi) provide teachers participating in the teacher institute with travel expense reimbursement and classroom materials related to the teacher institute, and may include providing stipends as necessary; and

“(xii) establish a mechanism to provide supplemental support during the academic year for teacher institute participants to apply the knowledge and skills gained at the teacher institute.

“(B) OPTIONAL MEMBERS OF THE PARTNERSHIP.—In addition to the partnership requirement under paragraph (2), an institution of higher education or eligible nonprofit organization (or consortium) desiring a grant for a teacher institute for the 21st century may also partner with a teacher organization, museum, or educational partnership organization.”.

**SEC. 7030. ROBERT NOYCE TEACHER SCHOLARSHIP PROGRAM.**

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

**“SEC. 10. ROBERT NOYCE TEACHER SCHOLARSHIP PROGRAM.**

“(a) SCHOLARSHIP PROGRAM.—

“(1) IN GENERAL.—The Director shall carry out a program to award grants to eligible entities to recruit and train mathematics and science teachers and to provide scholarships and stipends to individuals participating in the program. Such program shall be known as the ‘Robert Noyce Teacher Scholarship Program’.

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

“(3) USE OF GRANTS.—A grant provided under this section shall be used by the eligible entity—

“(A) to develop and implement a program to recruit and prepare undergraduate students majoring in science, technology, engineering, and mathematics at the eligible entity (and participating institutions of higher education of the consortium, if applicable) to become qualified as mathematics and science teachers, through—

“(i) administering scholarships in accordance with subsection (c);

“(ii) offering academic courses and early clinical teaching experiences designed to prepare students participating in the program to teach in elementary schools and secondary schools, including such preparation as is necessary to meet requirements for teacher certification or licensing;

“(iii) offering programs to students participating in the program, both before and after the students receive their baccalaureate degree, to enable the students to become better mathematics and science teachers, to fulfill the service requirements of this section, and to exchange ideas with others in the students’ fields; and

“(iv) providing summer internships for freshman and sophomore students participating in the program; or

“(B) to develop and implement a program to recruit and prepare science, technology, engineering, or mathematics professionals to become qualified as mathematics and science teachers, through—

“(i) administering stipends in accordance with subsection (d);

“(ii) offering academic courses and clinical teaching experiences designed to prepare stipend recipients to teach in elementary schools and secondary schools served by a high need local educational agency, including such preparation as is necessary to meet requirements for teacher certification or licensing; and

“(iii) offering programs to stipend recipients, both during and after matriculation in the program for which the stipend is received, to enable recipients to become better mathematics and science teachers, to fulfill the service requirements of this section, and to exchange ideas with others in the students’ fields.

“(4) ELIGIBILITY REQUIREMENT.—

“(A) IN GENERAL.—To be eligible to receive a grant under this section, an eligible entity shall ensure that specific faculty members and staff from the science, technology, engineering, and mathematics departments and specific education faculty of the eligible entity (and participating institutions of higher education of the consortium, if applicable) are designated to carry out the development and implementation of the program.

“(B) INCLUSION OF MASTER TEACHERS.—An eligible entity (and participating institutions of higher education of the consortium, if applicable) receiving a grant under this section may also include master teachers in the development of the pedagogical content of the program and in the supervision of students participating in the program in their clinical teaching experiences.

“(C) ACTIVE PARTICIPANTS.—No eligible entity (or participating institution of higher education of the consortium, if applicable) shall be eligible for a grant under this section unless faculty from the science, technology, engineering, and mathematics departments of the eligible

entity (and participating institutions of higher education of the consortium, if applicable) are active participants in the program.

“(5) AWARDS.—In awarding grants under this section, the Director shall ensure that the eligible entities (and participating institutions of higher education of the consortia, if applicable) represent a variety of types of institutions of higher education. In support of this goal, the Director shall broadly disseminate information about when and how to apply for grants under this section, including by conducting outreach to—

“(A) historically Black colleges and universities that are part B institutions, as defined in section 322(2) of the Higher Education Act of 1965 (20 U.S.C. 1061(2)); and

“(B) minority institutions, as defined in section 365(3) of the Higher Education Act of 1965 (20 U.S.C. 1067k(3)).

“(6) SUPPLEMENT NOT SUPPLANT.—Grant funds provided under this section shall be used to supplement, and not supplant, other Federal or State funds available for the type of activities supported by the grant.

“(b) SELECTION PROCESS.—

“(1) APPLICATION.—An eligible entity seeking funding under this section shall submit an application to the Director at such time, in such manner, and containing such information as the Director may require. The application shall include, at a minimum—

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

“(B) a description of the program that the applicant intends to operate, including the number of scholarships and summer internships or the size and number of stipends the applicant intends to award, the type of activities proposed for the recruitment of students to the program, and the selection process that will be used in awarding the scholarships or stipends;

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

“(D) a description of the academic courses and clinical teaching experiences required under subparagraphs (A)(ii) and (B)(ii) of subsection (a)(3), as applicable, including—

“(i) a description of the undergraduate program that will enable a student to graduate within 5 years with a major in science, technology, engineering, or mathematics and to obtain teacher certification or licensing;

“(ii) a description of the clinical teaching experiences proposed; and

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

“(E) a description of the programs required under subparagraphs (A)(iii) and (B)(iii) of subsection (a)(3), including activities to assist new teachers in fulfilling the teachers’ service requirements under this section;

“(F) an identification of the applicant eligible entity’s science, technology, engineering, and mathematics faculty and its education faculty (and such faculty of participating institutions of higher education of the consortium, if applicable) who will carry out the development and implementation of the program as required under subsection (a)(4); and

“(G) a description of the process the applicant will use to fulfill the requirements of subsection (f).

“(2) REVIEW OF APPLICATIONS.—In evaluating the applications submitted under paragraph (1), the Director shall consider, at a minimum—

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

“(B) the extent to which the applicant’s science, technology, engineering, and mathematics faculty and its education faculty (and such faculty of participating institutions of higher education of the consortium, if applicable) have worked or will work collaboratively to design new or revised curricula that recognize the specialized pedagogy required to teach science, technology, engineering, and mathematics effectively in elementary schools and secondary schools;

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

“(D) the degree to which the proposed programming will enable scholarship or stipend recipients to become successful mathematics and science teachers;

“(E) the number and academic qualifications of the students who will be served by the program; and

“(F) the ability of the applicant (and the participating institutions of higher education of the consortium, if applicable) to recruit students who would otherwise not pursue a career in teaching in elementary schools or secondary schools and students who are individuals identified in section 33 or 34 of the Science and Engineering Equal Opportunities Act (42 U.S.C. 1885a or 1885b).

“(c) SCHOLARSHIP REQUIREMENTS.—

“(1) IN GENERAL.—Scholarships under this section shall be available only to students who—

“(A) are majoring in science, technology, engineering, or mathematics; and

“(B) have attained at least junior status in a baccalaureate degree program.

“(2) SELECTION.—Individuals shall be selected to receive scholarships primarily on the basis of academic merit, with

consideration given to financial need and to the goal of promoting the participation of individuals identified in section 33 or 34 of the Science and Engineering Equal Opportunities Act (42 U.S.C. 1885a or 1885b).

“(3) AMOUNT.—The Director shall establish for each year the amount to be awarded for scholarships under this section for that year, which shall be not less than \$10,000 per year, except that no individual shall receive for any year more than the cost of attendance at that individual’s institution. Full-time students may receive annual scholarships through the completion of a baccalaureate degree program, not to exceed a maximum of 3 years. Part-time students may receive scholarships that are prorated according to such students’ enrollment status, not to exceed 6 years of scholarship support.

“(4) SERVICE OBLIGATION.—If an individual receives a scholarship under this section, such individual shall be required to complete, within 8 years after graduation from the baccalaureate degree program for which the scholarship was awarded, 2 years of service as a mathematics or science teacher for each full scholarship award received, with a maximum service requirement of 6 years. Service required under this paragraph shall be performed in a high need local educational agency.

“(d) STIPENDS.—

“(1) IN GENERAL.—Stipends under this section shall be available only to science, technology, engineering, or mathematics professionals who, while receiving the stipend, are enrolled in a program established under subsection (a)(3)(B).

“(2) SELECTION.—Individuals shall be selected to receive stipends under this section primarily on the basis of academic merit and professional achievement, with consideration given to financial need and to the goal of promoting the participation of individuals identified in section 33 or 34 of the Science and Engineering Equal Opportunities Act (42 U.S.C. 1885a or 1885b).

“(3) AMOUNT AND DURATION.—Stipends under this section shall be not less than \$10,000 per year, except that no individual shall receive for any year more than the cost of attendance at such individual’s institution. Individuals may receive a maximum of 1 year of stipend support, except that if an individual is enrolled in a part-time program, such amount shall be prorated according to the length of the program.

“(4) SERVICE OBLIGATION.—If an individual receives a stipend under this section, such individual shall be required to complete, within 4 years after graduation from the program for which the stipend was awarded, 2 years of service as a mathematics or science teacher. Service required under this paragraph shall be performed in a high need local educational agency.

“(e) CONDITIONS OF SUPPORT.—As a condition of acceptance of a scholarship or stipend under this section, a recipient of a scholarship or stipend shall enter into an agreement with the eligible entity—

“(1) accepting the terms of the scholarship or stipend pursuant to subsection (c) or subsection (d);

“(2) agreeing to provide the eligible entity with annual certification of employment and up-to-date contact information

and to participate in surveys conducted by the eligible entity as part of an ongoing assessment program; and

“(3) establishing that if the service obligation required under this section is not completed, all or a portion of the scholarship or stipend received under this section shall be repaid in accordance with subsection (g).

“(f) COLLECTION FOR NONCOMPLIANCE.—

“(1) MONITORING COMPLIANCE.—An eligible entity receiving a grant under this section shall, as a condition of participating in the program, enter into an agreement with the Director to monitor the compliance of scholarship or stipend recipients with their respective service requirements.

“(2) COLLECTION OF REPAYMENT.—

“(A) IN GENERAL.—In the event that a scholarship or stipend recipient is required to repay the scholarship or stipend under subsection (g), the eligible entity shall—

“(i) be responsible for determining the repayment amounts and for notifying the recipient and the Director of the amount owed; and

“(ii) collect such repayment amount within a period of time as determined under the agreement described in paragraph (1), or the repayment amount shall be treated as a loan in accordance with subparagraph (C).

“(B) RETURNED TO TREASURY.—Except as provided in subparagraph (C), any such repayment shall be returned to the Treasury of the United States.

“(C) RETAIN PERCENTAGE.—An eligible entity may retain a percentage of any repayment the eligible entity collects to defray administrative costs associated with the collection. The Director shall establish a single, fixed percentage that will apply to all eligible entities.

“(g) FAILURE TO COMPLETE SERVICE OBLIGATION.—

“(1) GENERAL RULE.—If an individual who has received a scholarship or stipend under this section—

“(A) fails to maintain an acceptable level of academic standing in the educational institution in which the individual is enrolled, as determined by the Director;

“(B) is dismissed from such educational institution for disciplinary reasons;

“(C) withdraws from the program for which the award was made before the completion of such program;

“(D) declares that the individual does not intend to fulfill the service obligation under this section; or

“(E) fails to fulfill the service obligation of the individual under this section,

such individual shall be liable to the United States as provided in paragraph (2).

“(2) AMOUNT OF REPAYMENT.—

“(A) LESS THAN ONE YEAR OF SERVICE.—If a circumstance described in paragraph (1) occurs before the completion of 1 year of a service obligation under this section, the total amount of awards received by the individual under this section shall be repaid or such amount shall be treated as a loan to be repaid in accordance with subparagraph (C).

“(B) MORE THAN ONE YEAR OF SERVICE.—If a circumstance described in subparagraph (D) or (E) of paragraph (1) occurs after the completion of 1 year of a service obligation under this section—

“(i) for a scholarship recipient, the total amount of scholarship awards received by the individual under this section, reduced by the ratio of the number of years of service completed divided by the number of years of service required, shall be repaid or such amount shall be treated as a loan to be repaid in accordance with subparagraph (C); and

“(ii) for a stipend recipient, one-half of the total amount of stipends received by the individual under this section shall be repaid or such amount shall be treated as a loan to be repaid in accordance with subparagraph (C).

“(C) REPAYMENTS.—The loans described under subparagraphs (A) and (B) shall be payable to the Federal Government, consistent with the provisions of part B or D of title IV of the Higher Education Act of 1965, and shall be subject to repayment in accordance with terms and conditions specified by the Director (in consultation with the Secretary of Education) in regulations promulgated to carry out this paragraph.

“(3) EXCEPTIONS.—The Director may provide for the partial or total waiver or suspension of any service or payment obligation by an individual under this section whenever compliance by the individual with the obligation is impossible or would involve extreme hardship to the individual, or if enforcement of such obligation with respect to the individual would be unconscionable.

“(h) DATA COLLECTION.—An eligible entity receiving a grant under this section shall supply to the Director any relevant statistical and demographic data on scholarship and stipend recipients the Director may request, including information on employment required under this section.

“(i) DEFINITIONS.—In this section—

“(1) the term ‘cost of attendance’ has the meaning given such term in section 472 of the Higher Education Act of 1965 (20 U.S.C. 108711);

“(2) the term ‘eligible entity’ means—

“(A) an institution of higher education; or

“(B) an institution of higher education that receives grant funds on behalf of a consortium of institutions of higher education;

“(3) the term ‘fellowship’ means an award to an individual under section 10A;

“(4) the term ‘high need local educational agency’ has the meaning given such term in section 201 of the Higher Education Act of 1965 (20 U.S.C. 1021);

“(5) the term ‘mathematics and science teacher’ means a science, technology, engineering, or mathematics teacher at the elementary school or secondary school level;

“(6) the term ‘scholarship’ means an award under subsection (c);

“(7) the term ‘science, technology, engineering, or mathematics professional’ means a person who holds a baccalaureate,



master's, or doctoral degree in science, technology, engineering, or mathematics, and is working in or had a career in such field or a related area; and

“(8) the term ‘stipend’ means an award under subsection (d).

“(j) MATHEMATICS AND SCIENCE SCHOLARSHIP GIFT FUND.—In accordance with section 11(f) of the National Science Foundation Act of 1950 (42 U.S.C. 1870(f)), the Director is authorized to accept donations from the private sector to supplement but not supplant scholarships, stipends, internships, or fellowships associated with programs under this section or section 10A.

“(k) ASSESSMENT OF TEACHER SERVICE AND RETENTION.—Not later than 4 years after the date of enactment of the America COMPETES Act, the Director shall transmit to the Committee on Health, Education, Labor, and Pensions of the Senate and the Committee on Science and Technology of the House of Representatives a report on the effectiveness of the programs carried out under this section and section 10A. The report shall include the proportion of individuals receiving scholarships, stipends, or fellowships under the program who—

“(1) fulfill the individuals’ service obligation required under this section or section 10A;

“(2) remain in the teaching profession beyond the individuals’ service obligation; and

“(3) remain in the teaching profession in a high need local educational agency beyond the individuals’ service obligation.

“(l) EVALUATION.—Not less than 2 years after the date of enactment of the America COMPETES Act, the Director, in consultation with the Secretary of Education, shall conduct an evaluation to determine whether the scholarships, stipends, and fellowships authorized under this section and section 10A have been effective in increasing the numbers of high-quality mathematics and science teachers teaching in high need local educational agencies and whether there continue to exist significant shortages of such teachers in high need local educational agencies.

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

“(a) IN GENERAL.—

“(1) GRANTS.—

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

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

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

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

“(B) mathematics and science teachers, who shall be referred to as ‘National Science Foundation Master

Teaching Fellows' and who possess a master's degree in their field.

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

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

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

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

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

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

“(c) USE OF GRANTS.—Grants awarded under this section shall be used by the eligible entity (and participating institutions of higher education of the consortium, if applicable) to develop and implement a program for National Science Foundation Teaching Fellows or National Science Foundation Master Teaching Fellows, through—

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

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

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

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

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

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

“(B) offering programs both during and after matriculation in the program for which the fellowship is received to enable fellows to become highly effective mathematics and science teachers, including mentoring, training, induction, and professional development activities, to fulfill the

service requirements of this section, including the requirements of subsection (e), and to exchange ideas with others in their fields.

“(d) SELECTION PROCESS.—

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

“(4) SELECTION OF FELLOWS.—

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

“(i) professional achievement;

“(ii) academic merit;

“(iii) content knowledge of science, technology, engineering, or mathematics, as demonstrated by their performance on an assessment in accordance with paragraph (2)(D)(i); and

“(iv) in the case of National Science Foundation Master Teaching Fellows, demonstrated success in improving student academic achievement in science, technology, engineering, or mathematics.

“(B) PROMOTING PARTICIPATION OF CERTAIN INDIVIDUALS.—Among individuals demonstrating equivalent qualifications, consideration may be given to the goal of promoting the participation of individuals identified in section

33 or 34 of the Science and Engineering Equal Opportunities Act (42 U.S.C. 1885a or 1885b).

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

“(f) TEACHING FELLOWSHIP SALARY SUPPLEMENTS.—

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

“(2) AMOUNT AND DURATION.—

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

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

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

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

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

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

“(h) MATCHING REQUIREMENT.—

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

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

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

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

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

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

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

**SEC. 7031. ENCOURAGING PARTICIPATION.**

(a) COMMUNITY COLLEGE PROGRAM.—Section 3 of the Scientific and Advanced-Technology Act of 1992 (42 U.S.C. 1862i) is amended—

(1) in subsection (a)(3)—

(A) in subparagraph (A), by striking “and” after the semicolon;

(B) in subparagraph (B), by striking the semicolon and inserting “; and”; and

(C) by adding at the end the following:

“(C) encourage participation of individuals identified in section 33 or 34 of the Science and Engineering Equal Opportunities Act (42 U.S.C. 1885a or 1885b);”;

(2) in subsection (c), by adding at the end the following:

“(3) MENTOR TRAINING GRANTS.—The Director shall—

“(A) establish a program to encourage and make grants available to institutions of higher education that award associate degrees to recruit and train individuals from the fields of science, technology, engineering, and mathematics to mentor students who are described in section 33 or 34 of the Science and Engineering Equal Opportunities Act (42 U.S.C. 1885a or 1885b) in order to assist those

students in identifying, qualifying for, and entering higher-paying technical jobs in those fields; and

“(B) make grants available to associate-degree-granting colleges to carry out the program identified in subsection (A).”.

(b) **EVALUATION AND REPORT.**—The Director shall establish metrics to evaluate the success of the programs established by the Foundation for encouraging individuals identified in section 33 or 34 of the Science and Engineering Equal Opportunities Act (42 U.S.C. 1885a or 1885b) to study and prepare for careers in science, technology, engineering, and mathematics, including programs that provide for mentoring for such individuals. The Director shall carry out evaluations based on the metrics developed and report to Congress annually on the findings and conclusions of the evaluations.

**SEC. 7032. NATIONAL ACADEMY OF SCIENCES REPORT ON DIVERSITY IN SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS FIELDS.**

(a) **IN GENERAL.**—The Director shall enter into an arrangement with the National Academy of Sciences for a report, to be transmitted to the Congress not later than 1 year after the date of enactment of this Act, about barriers to increasing the number of underrepresented minorities in science, technology, engineering, and mathematics fields and to identify strategies for bringing more underrepresented minorities into the science, technology, engineering, and mathematics workforce.

(b) **SPECIFIC REQUIREMENTS.**—The Director shall ensure that the report described in subsection (a) addresses—

(1) social and institutional factors that shape the decisions of minority students to commit to education and careers in the science, technology, engineering, and mathematics fields;

(2) specific barriers preventing greater minority student participation in the science, technology, engineering, and mathematics fields;

(3) primary focus points for policy intervention to increase the recruitment and retention of underrepresented minorities in the future workforce of the United States;

(4) programs already underway to increase diversity in the science, technology, engineering, and mathematics fields, and their level of effectiveness;

(5) factors that make such programs effective, and how to expand and improve upon existing programs;

(6) the role of minority-serving institutions in the diversification of the workforce of the United States in these fields and how that role can be supported and strengthened; and

(7) how the public and private sectors can better assist minority students in their efforts to join the workforce of the United States in these fields.

**SEC. 7033. HISPANIC-SERVING INSTITUTIONS UNDERGRADUATE PROGRAM.**

(a) **IN GENERAL.**—The Director is authorized to establish a new program to award grants on a competitive, merit-reviewed basis to Hispanic-serving institutions (as defined in section 502 of the Higher Education Act of 1965 (20 U.S.C. 1101a)) to enhance the quality of undergraduate science, technology, engineering, and mathematics education at such institutions and to increase the

retention and graduation rates of students pursuing associate's or baccalaureate degrees in science, technology, engineering, and mathematics.

(b) PROGRAM COMPONENTS.—Grants awarded under this section shall support—

- (1) activities to improve courses and curriculum in science, technology, engineering, and mathematics;
- (2) faculty development;
- (3) stipends for undergraduate students participating in research; and
- (4) other activities consistent with subsection (a), as determined by the Director.

(c) INSTRUMENTATION.—Funding for instrumentation is an allowed use of grants awarded under this section.

**SEC. 7034. PROFESSIONAL SCIENCE MASTER'S DEGREE PROGRAMS.**

(a) CLEARINGHOUSE.—

(1) DEVELOPMENT.—The Director shall establish a clearinghouse, in collaboration with 4-year institutions of higher education (including applicable graduate schools and academic departments), and industries and Federal agencies that employ science-trained personnel, to share program elements used in successful professional science master's degree programs and other advanced degree programs related to science, technology, engineering, and mathematics.

(2) AVAILABILITY.—The Director shall make the clearinghouse of program elements developed under paragraph (1) available to institutions of higher education that are developing professional science master's degree programs.

(b) PROGRAMS.—

(1) PROGRAMS AUTHORIZED.—The Director shall award grants to 4-year institutions of higher education to facilitate the institutions' creation or improvement of professional science master's degree programs that may include linkages between institutions of higher education and industries that employ science-trained personnel, with an emphasis on practical training and preparation for the workforce in high-need fields.

(2) APPLICATION.—A 4-year institution of higher education desiring a grant under this section shall submit an application to the Director at such time, in such manner, and accompanied by such information as the Director may require. The application shall include—

(A) a description of the professional science master's degree program that the institution of higher education will implement;

(B) a description of how the professional science master's degree program at the institution of higher education will produce individuals for the workforce in high-need fields;

(C) the amount of funding from non-Federal sources, including from private industries, that the institution of higher education shall use to support the professional science master's degree program; and

(D) an assurance that the institution of higher education shall encourage students in the professional science master's degree program to apply for all forms of Federal assistance available to such students, including applicable



graduate fellowships and student financial assistance under titles IV and VII of the Higher Education Act of 1965 (20 U.S.C. 1070 et seq., 1133 et seq.).

(3) PREFERENCES.—The Director shall give preference in making awards to 4-year institutions of higher education seeking Federal funding to create or improve professional science master's degree programs, to those applicants—

(A) located in States with low percentages of citizens with graduate or professional degrees, as determined by the Bureau of the Census, that demonstrate success in meeting the unique needs of the corporate, non-profit, and government communities in the State, as evidenced by providing internships for professional science master's degree students or similar partnership arrangements; or

(B) that secure more than two-thirds of the funding for such professional science master's degree programs from sources other than the Federal Government.

(4) NUMBER OF GRANTS; TIME PERIOD OF GRANTS.—

(A) NUMBER OF GRANTS.—Subject to the availability of appropriated funds, the Director shall award grants under paragraph (1) to a maximum of 200 4-year institutions of higher education.

(B) TIME PERIOD OF GRANTS.—Grants awarded under this section shall be for one 3-year term. Grants may be renewed only once for a maximum of 2 additional years.

(5) EVALUATION AND REPORTS.—

(A) DEVELOPMENT OF PERFORMANCE BENCHMARKS.—Prior to the start of the grant program, the Director, in collaboration with 4-year institutions of higher education (including applicable graduate schools and academic departments), and industries and Federal agencies that employ science-trained personnel, shall develop performance benchmarks to evaluate the pilot programs assisted by grants under this section.

(B) EVALUATION.—For each year of the grant period, the Director, in consultation with 4-year institutions of higher education (including applicable graduate schools and academic departments), and industries and Federal agencies that employ science-trained personnel, shall complete an evaluation of each program assisted by grants under this section. Any program that fails to satisfy the performance benchmarks developed under subparagraph (A) shall not be eligible for further funding.

(C) REPORT.—Not later than 180 days after the completion of an evaluation described in subparagraph (B), the Director shall submit a report to Congress that includes—

(i) the results of the evaluation; and

(ii) recommendations for administrative and legislative action that could optimize the effectiveness of the pilot programs, as the Director determines to be appropriate.

**SEC. 7035. SENSE OF CONGRESS ON COMMUNICATIONS TRAINING FOR SCIENTISTS.**

(a) SENSE OF CONGRESS.—It is the sense of Congress that institutions of higher education receiving awards under the Integrative Graduate Education and Research Traineeship program of

the Foundation should, among the activities supported under these awards, train graduate students in the communication of the substance and importance of their research to nonscientist audiences.

(b) REPORT TO CONGRESS.—Not later than 3 years after the date of enactment of this Act, the Director shall transmit a report to the Committee on Science and Technology of the House of Representatives and to the Committee on Commerce, Science, and Transportation and the Committee on Health, Education, Labor, and Pensions of the Senate, describing the training programs described in subsection (a) provided to graduate students who participated in the Integrative Graduate Education and Research Traineeship program. The report shall include data on the number of graduate students trained and a description of the types of activities funded.

**SEC. 7036. MAJOR RESEARCH INSTRUMENTATION.**

(a) AWARD AMOUNT.—The minimum amount of an award under the Major Research Instrumentation program shall be \$100,000. The maximum amount of an award under the program shall be \$4,000,000 except if the total amount appropriated for the program for a fiscal year exceeds \$125,000,000, in which case the maximum amount of an award shall be \$6,000,000.

(b) USE OF FUNDS.—In addition to the acquisition of instrumentation and equipment, funds made available by awards under the Major Research Instrumentation program may be used to support the operations and maintenance of such instrumentation and equipment.

(c) COST SHARING.—

(1) IN GENERAL.—An institution of higher education receiving an award under the Major Research Instrumentation program shall provide at least 30 percent of the cost from private or non-Federal sources.

(2) EXCEPTIONS.—Institutions of higher education that are not Ph.D.-granting institutions are exempt from the cost sharing requirement in paragraph (1), and the Director may reduce or waive the cost sharing requirement for—

(A) institutions—

(i) that are not ranked among the top 100 institutions receiving Federal research and development funding, as documented by the statistical data published by the Foundation; and

(ii) for which the proposed project will make a substantial improvement in the institution's capabilities to conduct leading edge research, to provide research experiences for undergraduate students using leading edge facilities, and to broaden the participation in science and engineering research by individuals identified in section 33 or 34 of the Science and Engineering Equal Opportunities Act (42 U.S.C. 1885a or 1885b); and

(B) consortia of institutions of higher education that include at least one institution that is not a Ph.D.-granting institution.

**SEC. 7037. LIMIT ON PROPOSALS.**

(a) POLICY.—For programs supported by the Foundation that require as part of the selection process for awards the submission of preproposals and that also limit the number of preproposals

that may be submitted by an institution, the Director shall allow the subsequent submission of a full proposal based on each preproposal that is determined to have merit following the Foundation's merit review process.

(b) **REVIEW AND ASSESSMENT OF POLICIES.**—The Board shall review and assess the effects on institutions of higher education of the policies of the Foundation regarding the imposition of limitations on the number of proposals that may be submitted by a single institution for programs supported by the Foundation. The Board shall determine whether current policies are well justified and appropriate for the types of programs that limit the number of proposal submissions. Not later than 1 year after the date of enactment of this Act, the Board shall summarize the Board's findings and any recommendations regarding changes to the current policy on the restriction of proposal submissions in a report to the Committee on Science and Technology of the House of Representatives and to the Committee on Commerce, Science, and Transportation and the Committee on Health, Education, Labor, and Pensions of the Senate.

## **TITLE VIII—GENERAL PROVISIONS**

### **SEC. 8001. COLLECTION OF DATA RELATING TO TRADE IN SERVICES.**

(a) **REPORT.**—Not later than January 31, 2008, the Secretary of Commerce, acting through the Director of the Bureau of Economic Analysis, shall report to Congress on the feasibility, annual cost, and potential benefits of a program to collect and study data relating to export and import of services.

(b) **PROGRAM.**—The proposed program to be studied under subsection (a) shall include requirements that the Secretary annually—

- (1) provide data collection and analysis relating to export and import of services;
- (2) collect and analyze data for service imports and exports in not less than 40 service industry categories, on a State-by-State basis;
- (3) collect data on, and analyze, the employment effects of exports and imports on the service industry; and
- (4) integrate ongoing and planned data collection and analysis initiatives in research and development and innovation.

### **SEC. 8002. SENSE OF THE SENATE REGARDING SMALL BUSINESS GROWTH AND CAPITAL MARKETS.**

(a) **FINDINGS.**—Congress finds that—

- (1) the United States has the most fair, most transparent, and most efficient capital markets in the world, in part due to its strong securities statutory and regulatory scheme;
- (2) it is of paramount importance for the continued growth of the economy of the Nation, that our capital markets retain their leading position in the world;
- (3) small businesses are vital participants in United States capital markets, and play a critical role in future economic growth and high-wage job creation;
- (4) section 404 of the Sarbanes-Oxley Act of 2002 has greatly enhanced the quality of corporate governance and financial reporting for public companies and increased investor confidence;