

109TH CONGRESS
2D SESSION

S.

To ensure the United States successfully competes in the 21st century global economy.

IN THE SENATE OF THE UNITED STATES

Mr. DOMENICI (for himself, Mr. BINGAMAN, Mr. ALEXANDER, Ms. MIKULSKI, Mr. LUGAR, Mr. DODD, Mr. OBAMA, Mr. WARNER, Mr. LIEBERMAN, Mr. BOND, Mrs. MURRAY, Mr. BURNS, Mr. BAYH, Mr. CRAIG, Ms. CANTWELL, Mrs. HUTCHISON, Mr. MENENDEZ, Mr. DEWINE, Mr. KOHL, Mr. THOMAS, Mr. KERRY, Mr. SMITH, Mr. NELSON of Florida, Mr. VOINOVICH, Mr. LEAHY, Mr. ALLEN, Mr. AKAKA, Mr. TALENT, Mr. CHAMBLISS, Mr. CORNYN, Mr. DAYTON, Mr. COLEMAN, and Mr. MARTINEZ) introduced the following bill; which was read twice and referred to the Committee on _____

A BILL

To ensure the United States successfully competes in the
21st century global economy.

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

3 **SECTION 1. SHORT TITLE.**

4 (a) SHORT TITLE.—This Act may be cited as the
5 “Protecting America’s Competitive Edge Through Edu-
6 cation and Research Act of 2006” or the “PACE-Edu-
7 cation Act”.

2

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

Sec. 1. Short title.

TITLE I—10,000 TEACHERS, 10,000,000 MINDS K-12 MATHEMATICS
AND SCIENCE EDUCATION

Subtitle A—Education

Sec. 111. Definitions.

CHAPTER 1—MATH AND SCIENCE TEACHERS

Sec. 121. Baccalaureate degrees in mathematics and science with teacher certification.

Sec. 122. Master's degrees in mathematics and science education for teachers.

CHAPTER 2—NATIONAL SCIENCE FOUNDATION SCHOLARSHIPS
AND FELLOWSHIPS

SUBCHAPTER A—NATIONAL SCIENCE FOUNDATION SCHOLARSHIPS FOR
MATHEMATICS AND SCIENCE TEACHERS

Sec. 131. Purpose.

Sec. 132. Recruiting and training new mathematics and science teachers.

SUBCHAPTER B—NATIONAL SCIENCE FOUNDATION FELLOWSHIPS FOR
MATHEMATICS AND SCIENCE TEACHERS

Sec. 141. National Science Foundation fellowships for mathematics and science teachers.

CHAPTER 3—ADVANCED PLACEMENT AND INTERNATIONAL
BACCALAUREATE PROGRAMS

Sec. 151. Advanced Placement and International Baccalaureate Programs.

CHAPTER 4—NATIONAL CLEARINGHOUSE ON MATHEMATICS AND
SCIENCE TEACHING MATERIALS

Sec. 161. National clearinghouse on mathematics and science teaching materials.

CHAPTER 5—FUTURE AMERICAN-SCIENTIST SCHOLARSHIPS

Sec. 171. Future American-Scientist Scholarships.

CHAPTER 6—GRADUATE RESEARCH FELLOWSHIPS

Sec. 181. Graduate Research Fellowships in scientific areas of national need.

Subtitle B—National Science Foundation Early-Career Research Grants

Sec. 191. National Science Foundation early-career research grants.

TITLE II—SOWING THE SEEDS THROUGH SCIENCE AND
ENGINEERING RESEARCH

3

Subtitle A—Office of Science and Technology Policy Matters

- Sec. 211. Coordination of science, mathematics, and engineering education programs.
- Sec. 212. National Coordination Office for Advanced Research Instrumentation and Facilities.
- Sec. 213. High-risk, high-payoff research.
- Sec. 214. President's Innovation Award.

Subtitle B—National Aeronautics and Space Administration Matters

- Sec. 221. National Aeronautics and Space Administration early-career research grants.
- Sec. 222. Authorization of appropriations for the National Aeronautics and Space Administration for basic sciences.

Subtitle C—Communications Matters

- Sec. 231. Sense of Senate on policies to accelerate deployment of access to broadband Internet.

Subtitle D—Science Parks

- Sec. 241. Development of science parks.

Subtitle E—Authorization of Appropriations for the National Science Foundation for Research and Related Activities

- Sec. 251. Authorization of appropriations for the National Science Foundation for research and related activities.

TITLE III—ENSURING THE BEST AND BRIGHTEST REMAIN IN THE UNITED STATES

Subtitle A—Visas for Doctorate Students in Mathematics, Engineering, Technology, or the Physical Sciences

- Sec. 311. Findings.
- Sec. 312. Sense of the Senate.
- Sec. 313. Visas for doctorate students in mathematics, engineering, technology, or the physical sciences.
- Sec. 314. Aliens not subject to numerical limitations on employment-based immigrants.

Subtitle B—Patent Reform

- Sec. 321. Patent reform.

TITLE IV—REFORMING DEEMED EXPORTS

- Sec. 401. Sense of Senate on exemption of certain uses of technology from treatment as exports.

TITLE V—STRENGTHENING BASIC RESEARCH AT THE DEPARTMENT OF DEFENSE

- Sec. 501. Department of Defense early-career research grants.
- Sec. 502. Authorization of appropriations for the Department of Defense for basic research.

1 **TITLE I—10,000 TEACHERS,**
2 **10,000,000 MINDS K-12 MATHE-**
3 **MATICS AND SCIENCE EDU-**
4 **CATION**

5 **Subtitle A—Education**

6 **SEC. 111. DEFINITIONS.**

7 Unless otherwise specified in this subtitle, the terms
8 used in this subtitle have the meanings given the terms
9 in section 9101 of the Elementary and Secondary Edu-
10 cation Act of 1965 (20 U.S.C. 7801).

11 **CHAPTER 1—MATH AND SCIENCE**
12 **TEACHERS**

13 **SEC. 121. BACCALAUREATE DEGREES IN MATHEMATICS**
14 **AND SCIENCE WITH TEACHER CERTIFI-**
15 **CATION.**

16 (a) GRANTS AUTHORIZED.—From the amounts au-
17 thorized under subsection (g), the Secretary shall award
18 grants to eligible recipients to enable the eligible recipients
19 to provide integrated courses of study in mathematics,
20 science, or engineering and teacher education, that lead
21 to a baccalaureate degree in mathematics, science, or engi-
22 neering with concurrent teacher certification.

23 (b) DEFINITION OF ELIGIBLE RECIPIENT.—In this
24 section, the term “eligible recipient” means any depart-

1 ment of mathematics, science, or engineering of an institu-
2 tion of higher education.

3 (c) AWARD AND DURATION.—

4 (1) AWARD.—The Secretary shall award a
5 grant under this section to each eligible recipient
6 that collaborates with a teacher preparation program
7 at an institution of higher education to develop un-
8 dergraduate degrees in mathematics, science, or en-
9 gineering with pedagogy education and teacher cer-
10 tification.

11 (2) DURATION.—The Secretary shall award a
12 grant under this section to each eligible recipient in
13 an amount that is not more than \$1,000,000 per
14 year for a period of 5 years.

15 (d) MATCHING REQUIREMENT.—Each eligible recipi-
16 ent receiving a grant under this section shall provide, from
17 non-Federal sources (provided in cash or in kind), to carry
18 out the activities supported by the grant, an amount that
19 is not less than 25 percent of the amount of the grant
20 for the first year of the grant, not less than 35 percent
21 of the amount of the grant for the second year of the
22 grant, and not less than 50 percent of the amount of the
23 grant for each succeeding fiscal year of the grant.

24 (e) APPLICATION.—

1 (1) IN GENERAL.—Each eligible recipient desir-
2 ing a grant under this section shall submit an appli-
3 cation to the Secretary at such time, in such man-
4 ner, and accompanied by such information as the
5 Secretary may require.

6 (2) CONTENTS.—Each application submitted
7 pursuant to paragraph (1) shall include—

8 (A) a description of how the eligible recipi-
9 ent will use grant funds to develop and admin-
10 ister undergraduate degrees in mathematics,
11 science, or engineering with pedagogy education
12 and teacher certification, including a descrip-
13 tion of proposed high-quality research and lab-
14 oratory experiences that will be available to stu-
15 dents;

16 (B) a description of how the mathematics,
17 science, or engineering departments will coordi-
18 nate with a teacher preparation program to
19 carry out the activities authorized under this
20 section;

21 (C) a resource assessment that describes
22 the resources available to the eligible recipient,
23 the intended use of the grant funds, and the
24 commitment of the resources of the eligible re-
25 cipient to the activities assisted under this sec-

1 tion, including financial support, faculty partici-
2 pation, time commitments, and continuation of
3 the activities assisted under the grant when the
4 grant period ends;

5 (D) an evaluation plan, including measur-
6 able objectives and benchmarks for—

7 (i) improving student retention;

8 (ii) increasing the percentage of high-
9 ly qualified mathematics and science teach-
10 ers; and

11 (iii) improving kindergarten through
12 grade 12 student academic performance in
13 mathematics and science;

14 (E) a description of the activities the eligi-
15 ble recipient will conduct to ensure graduates of
16 the program keep informed of the latest devel-
17 opments in the respective fields;

18 (F) a description of how the eligible recipi-
19 ent will work with local educational agencies in
20 the area in which the eligible recipient is lo-
21 cated and, to the extent practicable, with local
22 educational agencies where graduates of the
23 program authorized under this section are em-
24 ployed, to ensure that the activities required
25 under subsection (f)(3) are carried out; and

1 (G) a description of efforts to encourage
2 applications to the program from underrep-
3 resented groups, including women and minority
4 groups.

5 (f) AUTHORIZED ACTIVITIES.—An eligible recipient
6 shall use the funds received under this section—

7 (1) to develop and administer teacher education
8 and certification programs with in-depth content
9 education and subject-specific education in peda-
10 gogy, leading to baccalaureate degrees in mathe-
11 matics, science, or engineering with concurrent
12 teacher certification;

13 (2) to offer high-quality research experiences
14 and training in the use of educational technology;
15 and

16 (3) to work with local educational agencies in
17 the area in which the eligible recipient is located
18 and, to the extent practicable, with local educational
19 agencies where graduates of the program authorized
20 under this section are employed, to support the new
21 teachers during the initial years of teaching, which
22 may include—

23 (A) promoting effective teaching skills;

1 (B) development of skills in educational
2 interventions based on scientifically-based re-
3 search;

4 (C) providing opportunities for high-quality
5 teacher mentoring;

6 (D) providing opportunities for regular
7 professional development;

8 (E) interdisciplinary collaboration among
9 exemplary teachers, faculty, researchers, and
10 other staff who prepare new teachers; and

11 (F) allowing time for joint lesson planning
12 and other constructive collaborative activities.

13 (g) AUTHORIZATION OF APPROPRIATIONS.—There
14 are authorized to be appropriated to carry out this sec-
15 tion—

16 (1) \$30,000,000 for fiscal year 2007;

17 (2) \$90,000,000 for fiscal year 2008;

18 (3) \$190,000,000 for fiscal year 2009;

19 (4) \$290,000,000 for fiscal year 2010;

20 (5) \$390,000,000 for fiscal year 2011;

21 (6) \$500,000,000 for fiscal year 2012; and

22 (7) \$500,000,000 for fiscal year 2013.

1 **SEC. 122. MASTER'S DEGREES IN MATHEMATICS AND**
2 **SCIENCE EDUCATION FOR TEACHERS.**

3 (a) PURPOSES.—The purpose of this section is pro-
4 vide competitive institutional grants for eligible recipients
5 to develop part-time, 3-year master's degree programs in
6 mathematics and science education for teachers in order
7 to enhance the content knowledge and pedagogical skills
8 of teachers.

9 (b) DEFINITION OF ELIGIBLE RECIPIENT.—In this
10 section, the term “eligible recipient” means a mathe-
11 matics, science, or engineering department of an institu-
12 tion of higher education.

13 (c) GRANTS AUTHORIZED.—

14 (1) GRANTS TO ELIGIBLE RECIPIENTS.—From
15 the amounts authorized under subsection (i), the
16 Secretary is authorized to award grants of not more
17 than \$1,000,000, on a competitive basis, to eligible
18 recipients to enable the eligible recipients to carry
19 out the authorized activities described in subsection
20 (f).

21 (2) QUALIFICATION.—In order to qualify for a
22 grant under this section, an eligible recipient shall
23 collaborate with a teacher preparation program of an
24 institution of higher education.

1 (d) APPLICATION.—To be eligible to receive a grant
2 under this section, an eligible recipient shall submit an ap-
3 plication to the Secretary that—

4 (1) meets the requirements of this section;

5 (2) includes a description of how the eligible re-
6 cipient intends to use the grant funds provided
7 under this section;

8 (3) contains such information and assurances
9 as the Secretary may require;

10 (4) describes how the eligible recipient will pre-
11 pare teachers to become more effective mathematics
12 or science teachers;

13 (5) describes how the eligible recipient will co-
14 ordinate with a teacher preparation program, and
15 how the activities of the eligible recipient will be con-
16 sistent with State, local, and other education reform
17 activities that promote student achievement;

18 (6) describes the resources available to the eligi-
19 ble recipient, the intended use of the grant funds,
20 and the commitment of resources of the eligible re-
21 cipient to the activities assisted under this section,
22 including financial support, faculty participation,
23 time commitments, and continuation of the activities
24 when the grant period ends;

1 (7) provides an evaluation plan pursuant to
2 subsection (g);

3 (8) describes how the eligible recipient will align
4 the proposed master's degree program with chal-
5 lenging student academic achievement standards,
6 and challenging academic content standards, estab-
7 lished by the State in which the eligible recipient is
8 located;

9 (9) describes the activities the eligible recipient
10 will undertake to ensure that local educational agen-
11 cies in the geographic areas served by the eligible re-
12 cipient are provided information about the activities
13 carried out with grant funds under this section; and

14 (10) describes how the eligible recipient will en-
15 courage applications to the program from underrep-
16 resented groups, including women and minority
17 groups.

18 (e) PRIORITY.—The Secretary may give priority con-
19 sideration to applications that demonstrate that the eligi-
20 ble recipient shall—

21 (1) consult with local educational agencies in
22 developing and administering master's degree pro-
23 grams;

1 (2) use online technology to allow for flexibility
2 in the pace at which candidates complete the mas-
3 ter's degree programs; and

4 (3) develop innovative efforts aimed at reducing
5 the shortage of master's degree level mathematics or
6 science teachers in low-income urban or rural areas.

7 (f) **AUTHORIZED ACTIVITIES.**—An eligible recipient
8 shall use the grant funds received under this section to
9 develop part-time, 3-year master's degree programs in
10 mathematics and science education for teachers, con-
11 ducted over 3 full-time summer sessions, and alternate
12 weekends during the academic year, as appropriate, which
13 shall include—

14 (1) developing courses that—

15 (A) are based on rigorous mathematics and
16 science content and aligned with challenging
17 State academic content standards;

18 (B) promote effective teaching skills; and

19 (C) promote understanding of effective in-
20 structional strategies for students with special
21 needs, including students with disabilities, stu-
22 dents who are limited English proficient, and
23 students who are gifted and talented;

24 (2) hiring and training professional staff to ad-
25 minister the program;

1 (3) purchasing equipment for computer and
2 teaching aids;

3 (4) providing educational instruction for not
4 fewer than 20 teachers per year;

5 (5) providing stipends to help support the par-
6 ticipants in the form of tuition reimbursement and
7 travel expenses; and

8 (6) creating opportunities for clinical experience
9 and training for teachers through participation with
10 professionals in business, research, and work envi-
11 ronments relating to mathematics, science, or engi-
12 neering, including opportunities for using laboratory
13 equipment.

14 (g) ANNUAL EVALUATION.—Each eligible recipient
15 shall establish and include in the application submitted
16 pursuant to section (d) an evaluation plan that includes
17 strong performance objectives. The plan shall include ob-
18 jectives and measures for increasing—

19 (1) the percentage of master's degree level
20 mathematics or science teachers hired by the State
21 in which the eligible recipient is located;

22 (2) teacher retention;

23 (3) the percentage of master's degree level
24 mathematics or science teachers serving in high-need
25 schools;

1 (4) the percentage of master's degree level
2 mathematics or science teachers among underrep-
3 resented groups; and

4 (5) the competencies of program graduates in
5 their respective fields of mathematics or science.

6 (h) GRADUATE FELLOWSHIPS.—An individual who
7 has received a master's degree in mathematics or science
8 education under a program developed pursuant to this sec-
9 tion and who meets the requirements of section 141(b)(2)
10 shall be eligible for a fellowship authorized under such sec-
11 tion 141(b)(2).

12 (i) AUTHORIZATION OF APPROPRIATIONS.—There
13 are authorized to be appropriated to carry out this sec-
14 tion—

15 (1) \$200,000,000 for fiscal year 2007;

16 (2) \$500,000,000 for fiscal year 2008;

17 (3) \$500,000,000 for fiscal year 2009;

18 (4) \$500,000,000 for fiscal year 2010;

19 (5) \$500,000,000 for fiscal year 2011;

20 (6) \$500,000,000 for fiscal year 2012; and

21 (7) \$500,000,000 for fiscal year 2013.

1 CHAPTER 2—NATIONAL SCIENCE FOUN-
2 DATION SCHOLARSHIPS AND FELLOW-
3 SHIPS

4 Subchapter A—National Science Foundation
5 Scholarships for Mathematics and
6 Science Teachers

7 SEC. 131. PURPOSE.

8 The purpose of this subchapter is to annually recruit
9 and train 10,000 new mathematics and science teachers
10 by providing scholarships for undergraduate courses of
11 study leading to baccalaureate degrees in mathematics,
12 science, or engineering, with concurrent teacher certifi-
13 cation.

14 SEC. 132. RECRUITING AND TRAINING NEW MATHEMATICS
15 AND SCIENCE TEACHERS.

16 (a) GRANTS AUTHORIZED.—From the amounts au-
17 thorized under subsection (g), the Director of the National
18 Science Foundation (referred to in this section as the “Di-
19 rector”) shall award merit-based undergraduate scholar-
20 ships to eligible students to assist the eligible students in
21 paying their college education expenses, which shall in-
22 clude tuition, fees, books, supplies, and equipment re-
23 quired for courses of instruction.

1 (b) DEFINITION OF ELIGIBLE STUDENT.—In this
2 section, the term “eligible student” means a student
3 who—

4 (1) attends an institution of higher education;

5 (2) is majoring in mathematics, science, or en-
6 gineering;

7 (3) is pursuing concurrent certification in
8 teaching; and

9 (4) demonstrates continued academic achieve-
10 ment and progress, as determined by the Director,
11 toward completion of a baccalaureate degree in
12 mathematics, science, or engineering with concurrent
13 certification in teaching.

14 (c) AWARDS.—The Director shall award a scholar-
15 ship under this section to an eligible student in an amount
16 that is not greater than \$20,000 per academic year for
17 not more than 4 years of undergraduate study. The
18 amount awarded for each academic year shall not exceed
19 the student’s cost of attendance for the academic year.

20 (d) SERVICE REQUIREMENTS.—

21 (1) SERVICE REQUIREMENT.—An individual
22 who is awarded a scholarship under this section shall
23 enter into an agreement with the Director under
24 which the individual agrees to be employed for not
25 less than 5 academic years as a full-time mathe-

1 matics, science, or elementary school teacher in a
2 public elementary school or secondary school, or 4
3 academic years as a full-time mathematics, science,
4 or elementary school teacher in a public elementary
5 school or secondary school—

6 (A)(i) in which not less than 40 percent of
7 the children enrolled in the school are from low-
8 income families; or

9 (ii) designated with a school locale code of
10 7 or 8, or otherwise designated as a rural
11 school, as determined by the Secretary; and

12 (B)(i) in which there is a higher percent-
13 age of teachers not teaching in the academic
14 subject areas or grade levels in which the teach-
15 ers were trained to teach; or

16 (ii) in which there is a high teacher turn-
17 over rate or a high percentage of teachers with
18 emergency, provisional, or temporary certifi-
19 cation or licenses.

20 (2) COORDINATION WITH THE SECRETARY OF
21 EDUCATION.—The Director shall coordinate with the
22 Secretary to determine whether an individual who
23 receives a scholarship award under this section is
24 employed as a full-time mathematics, science, or ele-

1 mentary school teacher in accordance with para-
2 graphs (1), (3), and (4).

3 (3) FAILURE TO COMPLY.—If an individual who
4 receives a scholarship award under this section fails
5 to comply with the agreement entered into pursuant
6 to paragraph (1), the Director shall take 1 or more
7 of the following actions:

8 (A) Require the individual to repay all or
9 the applicable portion of the total scholarship
10 amount awarded to the individual under this
11 section.

12 (B) Impose a fine or penalty in an amount
13 to be determined by the Director.

14 (4) REGULATIONS.—The Director shall promul-
15 gate regulations setting forth the terms of repay-
16 ment and the criteria to be considered in granting
17 a waiver for the service requirements. Such criteria
18 shall include whether compliance with the service re-
19 quirements is inequitable and represents undue
20 hardship.

21 (e) COORDINATION WITH THE SECRETARY OF DE-
22 FENSE.—The Director shall coordinate with the Secretary
23 of Defense to ensure members of the Armed Forces are
24 aware of the educational opportunity under this section,

1 particularly members of the Armed Forces who have train-
2 ing in engineering.

3 (f) FELLOWSHIPS.—An individual shall be eligible for
4 a fellowship under section 141(b)(1) if the individual—

5 (1) has received a baccalaureate degree in
6 mathematics, science, or engineering, and concurrent
7 certification in teaching;

8 (2) has received a scholarship award under this
9 section; and

10 (3) meets the requirements of section
11 141(b)(1).

12 (g) AUTHORIZATION OF APPROPRIATIONS.—There
13 are authorized to be appropriated to carry out this sec-
14 tion—

15 (1) \$50,000,000 for fiscal year 2007;

16 (2) \$100,000,000 for fiscal year 2008;

17 (3) \$150,000,000 for fiscal year 2009;

18 (4) \$170,000,000 for fiscal year 2010;

19 (5) \$170,000,000 for fiscal year 2011;

20 (6) \$170,000,000 for fiscal year 2012; and

21 (7) \$170,000,000 for fiscal year 2013.

1 Subchapter B—National Science Foundation
2 Fellowships for Mathematics and Science
3 Teachers

4 SEC. 141. NATIONAL SCIENCE FOUNDATION FELLOWSHIPS
5 FOR MATHEMATICS AND SCIENCE TEACHERS.

6 (a) FELLOWSHIP AUTHORIZED.—The Director of the
7 National Science Foundation (referred to in this section
8 as the “Director”) is authorized to award fellowships to
9 individuals, as described in subsection (b), a portion of
10 which shall be used for continuing education and profes-
11 sional development activities.

12 (b) FELLOWSHIP AWARDS.—The Director shall
13 award the following fellowships:

14 (1) The Director shall award \$10,000 annually
15 for 4 academic years to an individual who meets the
16 following criteria:

17 (A) The individual has received a bacca-
18 laurate degree in mathematics, science, or en-
19 gineering, and concurrent certification in teach-
20 ing.

21 (B) The individual received a scholarship
22 award under section 132.

23 (C) The individual is employed as a full-
24 time mathematics, science, or elementary school

1 teacher in a public elementary school or sec-
2 ondary school—

3 (i)(I) in which not less than 40 per-
4 cent of the children enrolled in the school
5 are from low-income families; or

6 (II) designated with a school locale
7 code of 7 or 8, or otherwise designated as
8 a rural school, as determined by the Sec-
9 retary; and

10 (ii)(I) in which there is a high per-
11 centage of teachers not teaching in the
12 academic subject areas or grade levels in
13 which the teachers were trained to teach;
14 or

15 (II) in which there is a high teacher
16 turnover rate or a high percentage of
17 teachers with emergency, provisional, or
18 temporary certification or licenses.

19 (2) The Director shall award \$10,000 annually
20 for 5 academic years to an individual who has re-
21 ceived a master's degree in mathematics or science
22 education under a program developed pursuant to
23 section 122 and who undertakes increased respon-
24 sibilities, such as teacher mentoring and other lead-
25 ership activities.

1 (c) APPLICATION.—An individual desiring a fellow-
2 ship under this section shall submit an application to the
3 Director at such time, in such manner, and accompanied
4 by such information as the Director may require. Each
5 application shall include assurances that the individual
6 meets the requirements of the fellowship for which the in-
7 dividual is applying.

8 (d) COORDINATION.—The Director shall coordinate
9 with the Secretary to determine whether an individual who
10 receives a fellowship under this section meets the require-
11 ments of this section.

12 (e) AUTHORIZATION OF APPROPRIATIONS.—There
13 are authorized to be appropriated—

14 (1) to carry out subsection (b)(1)—

- 15 (A) \$5,000,000 for fiscal year 2008;
16 (B) \$15,000,000 for fiscal year 2009;
17 (C) \$30,000,000 for fiscal year 2010;
18 (D) \$45,000,000 for fiscal year 2011;
19 (E) \$45,000,000 for fiscal year 2012; and
20 (F) \$45,000,000 for fiscal year 2013; and

21 (2) to carry out subsection (b)(2)—

- 22 (A) \$100,000,000 for fiscal year 2010;
23 (B) \$200,000,000 for fiscal year 2011;
24 (C) \$300,000,000 for fiscal year 2012; and
25 (D) \$400,000,000 for fiscal year 2013.

1 CHAPTER 3—ADVANCED PLACEMENT AND
2 INTERNATIONAL BACCALAUREATE
3 PROGRAMS

4 SEC. 151. ADVANCED PLACEMENT AND INTERNATIONAL
5 BACCALAUREATE PROGRAMS.

6 (a) PURPOSE.—The purposes of this section are—

7 (1) to educate an additional 70,000 Advanced
8 Placement (AP) or International Baccalaureate (IB)
9 and 80,000 pre-AP or pre-IB teachers of mathe-
10 matics and science over the 5 year period beginning
11 with 2007; and

12 (2) to triple to 1,500,000 the number of stu-
13 dents who take AP and IB mathematics and science
14 examinations.

15 (b) GRANTS AUTHORIZED.—

16 (1) IN GENERAL.—From the amounts author-
17 ized under subsection (i), the Secretary shall award
18 grants, on a competitive basis, to eligible recipients
19 to enable the eligible recipients to carry out the ac-
20 tivities authorized in subsection (f).

21 (2) LIMITATION.—An eligible recipient may not
22 receive more than 1 grant at a time under this sec-
23 tion to undertake authorized activities within the
24 same State.

25 (c) DEFINITIONS.—In this section:

1 (1) ELIGIBLE RECIPIENT.—The term “eligible
2 recipient” means a nonprofit educational entity with
3 expertise in Advanced Placement or International
4 Baccalaureate services.

5 (2) MASTER TEACHER.—The term “master
6 teacher” means a teacher—

7 (A) with an advanced degree or an ad-
8 vanced certification;

9 (B) who uses the most effective teaching
10 methods in the teacher’s disciplines; and

11 (C) who has shown demonstrable results of
12 higher student achievement in mathematics or
13 science.

14 (d) APPLICATION.—

15 (1) IN GENERAL.—Each eligible recipient desir-
16 ing a grant under this section shall submit an appli-
17 cation to the Secretary at such time, in such man-
18 ner, and accompanied by such information as the
19 Secretary may require.

20 (2) CONTENTS.—Each application submitted
21 pursuant to paragraph (1) shall—

22 (A) describe the need for increased access
23 to Advanced Placement or International Baccalaureate
24 programs in mathematics and science;

1 (B) provide for the involvement of business
2 and community organizations in the activities to
3 be assisted;

4 (C) describe the availability of matching
5 funds from non-Federal sources to assist in the
6 activities authorized; and

7 (D) demonstrate an intent to carry out ac-
8 tivities that target local educational agencies—

9 (i) that serve not fewer than 10,000
10 children from low-income families;

11 (ii) for which not less than 20 percent
12 of the children served by the local edu-
13 cational agency are children from low-in-
14 come families; or

15 (iii) with a total of less than 600 stu-
16 dents in average daily attendance at the
17 schools that are served by the local edu-
18 cational agency and all of those schools are
19 designated with a school locale code of 7 or
20 8, or otherwise designated as a rural
21 school, as determined by the Secretary.

22 (e) PRIORITY CONSIDERATION.—The Secretary shall
23 give priority to eligible recipients that submit an applica-
24 tion under subsection (d) that demonstrates a pervasive
25 need to expand or develop Advanced Placement or Inter-

1 national Baccalaureate programs in mathematics and
2 science.

3 (f) AUTHORIZED ACTIVITIES.—An eligible recipient
4 shall use the grant funds provided under this section for
5 the following activities:

6 (1) To identify and work with local educational
7 agencies to expand or develop Advanced Placement
8 or International Baccalaureate and pre-Advanced
9 Placement or pre-International Baccalaureate pro-
10 grams in mathematics and science in schools served
11 by the local educational agencies.

12 (2) To work with the local educational agencies
13 to establish Advanced Placement or International
14 Baccalaureate coordinators in each secondary school
15 served by the local educational agencies.

16 (3) To ensure master teachers provide training
17 to prepare teachers to teach Advanced Placement or
18 International Baccalaureate courses in mathematics
19 and science, which shall include at a minimum—

20 (A) week-long summer institutes; and

21 (B) 2-day seminars in the teachers' dis-
22 ciplines each year for 4 years.

23 (4) To ensure master teachers provide training
24 to prepare teachers to teach pre-Advanced Place-
25 ment or pre-International Baccalaureate courses in

1 mathematics and science, which shall include at a
2 minimum—

3 (A) a 4-day summer institute; and

4 (B) 4 days on campus each year for 4
5 years.

6 (5) To provide stipends to teachers who satis-
7 factorily complete the Advanced Placement or Inter-
8 national Baccalaureate or pre-Advanced Placement
9 or pre-International Baccalaureate training.

10 (6) To provide a bonus to a teacher who has
11 satisfactorily completed the Advanced Placement or
12 International Baccalaureate or pre-Advanced Place-
13 ment or pre-International Baccalaureate training for
14 each student of the teacher who passes an Advanced
15 Placement or International Baccalaureate examina-
16 tion in mathematics and science.

17 (7) To provide test preparation sessions for stu-
18 dents taking Advanced Placement or International
19 Baccalaureate examinations in mathematics and
20 science.

21 (8) To reimburse students half of the cost of
22 the Advanced Placement or International Bacca-
23 laureate mathematics and science examination fees.

1 (9) To provide scholarships to students who
2 pass the Advanced Placement or International Bac-
3 calaureate mathematics and science examinations.

4 (g) EVALUATION AND ACCOUNTABILITY PLAN.—

5 (1) IN GENERAL.—Each eligible recipient re-
6 ceiving a grant under this section shall develop an
7 evaluation and accountability plan for activities as-
8 sisted under this section that includes rigorous ob-
9 jectives that measure the impact of activities as-
10 sisted under this section.

11 (2) CONTENTS.—The plan developed pursuant
12 to paragraph (1) shall include—

13 (A) the number of students served by the
14 eligible recipient who are taking pre-Advanced
15 Placement or pre-International Baccalaureate
16 courses in mathematics and science;

17 (B) the number of students served by the
18 eligible recipient who are taking Advanced
19 Placement or International Baccalaureate
20 courses in mathematics and science;

21 (C) the number of students served by the
22 eligible recipient who take Advanced Placement
23 or International Baccalaureate mathematics
24 and science examinations;

1 (D) the number of students served by the
2 eligible recipients who pass Advanced Place-
3 ment or International Baccalaureate mathe-
4 matics and science examinations; and

5 (E) the number of teachers trained in Ad-
6 vanced Placement or International Bacca-
7 laureate and pre-Advanced Placement or pre-
8 International Baccalaureate mathematics and
9 science programs.

10 (h) MATCHING REQUIREMENTS FOR GRANTS.—Each
11 eligible recipient receiving a grant under this section shall
12 provide, from non-Federal sources (in cash or in kind),
13 an amount equal to 100 percent of the amount of the
14 grant for each year of the grant, of which not less than
15 25 percent shall come from State sources.

16 (i) AUTHORIZATION OF APPROPRIATIONS.—There
17 are authorized to be appropriated to carry out this sec-
18 tion—

- 19 (1) \$241,000,000 for fiscal year 2007;
20 (2) \$341,000,000 for fiscal year 2008;
21 (3) \$453,000,000 for fiscal year 2009;
22 (4) \$596,000,000 for fiscal year 2010; and
23 (5) \$731,000,000 for fiscal year 2011.

1 CHAPTER 4—NATIONAL CLEARINGHOUSE
2 ON MATHEMATICS AND SCIENCE
3 TEACHING MATERIALS

4 SEC. 161. NATIONAL CLEARINGHOUSE ON MATHEMATICS
5 AND SCIENCE TEACHING MATERIALS.

6 (a) PURPOSE.—The purpose of the this section is to
7 strengthen the skills of mathematics and science teachers
8 by establishing a national clearinghouse of proven effective
9 kindergarten through grade 12 mathematics and science
10 teaching materials.

11 (b) EFFECTIVE MATHEMATICS AND SCIENCE TEACH-
12 ING MATERIALS.—The Secretary is authorized to convene,
13 not later than 1 year after the date of enactment of this
14 Act, a national panel to collect proven effective kinder-
15 garten through grade 12 mathematics and science teach-
16 ing materials, or to support the development of new mate-
17 rials where no effective models exist.

18 (c) COMPOSITION OF NATIONAL PANEL.—

19 (1) CONSULTATION.—The Secretary shall ap-
20 point members to the panel after consultation with
21 the National Academy of Sciences of the National
22 Academies.

23 (2) SELECTION.—The Secretary shall ensure
24 that the panel broadly represents scientists, practi-
25 tioners, educators, representatives from entities with

1 expertise in education, mathematics, and science,
2 and parents. The Secretary shall ensure that the
3 panel includes the following:

4 (A) A majority representation of educators
5 and parents directly involved in the kinder-
6 garten through grade 12 education process.

7 (B) Proportionate representation of edu-
8 cators and parents from all demographic areas,
9 including urban, suburban and rural schools.

10 (C) Proportionate representation of edu-
11 cators and parents from public and private
12 schools.

13 (3) QUALIFICATIONS OF MEMBERS.—The mem-
14 bers of the panel shall be individuals who have sub-
15 stantial knowledge or experience relating to—

16 (A) education, mathematics, or science pol-
17 icy or programs; or

18 (B) education, mathematics, or science
19 curricula content development.

20 (d) AUTHORIZED ACTIVITIES OF NATIONAL
21 PANEL.—The panel shall—

22 (1) identify proven effective kindergarten
23 through grade 12 mathematics and science teaching
24 materials;

1 (2) identify the need for new mathematics and
2 science teaching materials, and support the develop-
3 ment of such new materials through contracts and
4 cooperative agreements; and

5 (3) establish a national clearinghouse of infor-
6 mation on effective kindergarten through grade 12
7 mathematics and science teaching materials.

8 (e) DISSEMINATION.—The Secretary shall dissemi-
9 nate information related to the clearinghouse to State edu-
10 cational agencies, and otherwise make available and acces-
11 sible to local educational agencies and schools the teaching
12 materials collected by the panel in the form of a searchable
13 online database or Internet web site.

14 (f) MATHEMATICS AND SCIENCE TEACHING MATE-
15 RIALS.—

16 (1) RELIABILITY AND MEASUREMENT.—The
17 kindergarten through grade 12 mathematics and
18 science teaching materials collected under this sec-
19 tion shall be—

20 (A) reliable, valid, and grounded in sci-
21 entific theory and research in existence as of
22 the date of the collection of materials;

23 (B) reviewed regularly to assess effective-
24 ness; and

1 (C) developed in careful consideration of
2 State academic assessments and student aca-
3 demic achievement standards.

4 (2) STUDENTS WITH DIVERSE LEARNING
5 NEEDS.—The teaching materials shall include rel-
6 evant materials for students with diverse learning
7 needs, particularly for students with disabilities and
8 students with limited English proficiency.

9 (g) AUTHORIZATION OF APPROPRIATIONS.—There
10 are authorized to be appropriated to carry out this section
11 \$20,000,000 for fiscal year 2007 and \$20,000,000 for
12 each of the fiscal years 2008 through 2011.

13 **CHAPTER 5—FUTURE AMERICAN-**
14 **SCIENTIST SCHOLARSHIPS**

15 **SEC. 171. FUTURE AMERICAN-SCIENTIST SCHOLARSHIPS.**

16 (a) PURPOSE.—The purpose of this section is to in-
17 crease the number and percentage of citizens of the United
18 States who earn baccalaureate degrees in mathematics or
19 science (including engineering) by providing 25,000 new
20 competitive merit-based undergraduate scholarships to
21 students who are citizens of the United States, for the
22 purpose of enabling each such student to obtain a bacca-
23 laureate degree in mathematics or science at a 4-year in-
24 stitution of higher education.

25 (b) SCHOLARSHIPS.—

1 (1) IN GENERAL.—From the amounts author-
2 ized under subsection (e), the Secretary shall award
3 the scholarships to eligible students that shall be
4 used by the eligible students to pay for qualifying
5 expenses at the 4-year institution of higher edu-
6 cation of the eligible students’ choosing.

7 (2) FUTURE AMERICAN-SCIENTIST SCHOLAR-
8 SHIPS.—A scholarship awarded under this section
9 shall be called a “Future American-Scientist Schol-
10 arship”.

11 (c) AMOUNT; DURATION.—

12 (1) AMOUNT.—A scholarship award under this
13 section shall be in an amount of not more than
14 \$20,000 per year.

15 (2) DURATION OF SCHOLARSHIP.—A scholar-
16 ship awarded to an eligible student under this sec-
17 tion shall be for the number of years necessary for
18 the eligible student to earn a baccalaureate degree in
19 mathematics or science, except that no scholarship
20 under this section shall be awarded for a period of
21 more than 4 years.

22 (d) DEFINITIONS.—In this section:

23 (1) ELIGIBLE STUDENT.—The term “eligible
24 student” means a student who—

25 (A) is a citizen of the United States;

1 (B) is attending a 4-year institution of
2 higher education;

3 (C) is enrolled, or will be enrolled at the
4 start of the next academic year, in a course of
5 study at an institution of higher education that
6 leads to a baccalaureate degree in mathematics
7 or science;

8 (D) demonstrates aptitude, as determined
9 by the Secretary, in mathematics or science; or

10 (E) for each year of a scholarship under
11 this section, demonstrates continued academic
12 achievement and progress, as determined by the
13 Secretary, toward completion of a baccalaureate
14 degree in mathematics or science.

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

19 (3) QUALIFIED EXPENSES.—The term “quali-
20 fied expenses” means the tuition, books, fees, sup-
21 plies, and equipment required for a course of in-
22 struction leading to a baccalaureate degree in math-
23 ematics or science at a 4-year institution of higher
24 education of the eligible student’s choosing.

1 (4) SECRETARY.—The term “Secretary” means
2 the Secretary of Energy.

3 (e) AUTHORIZATION OF APPROPRIATIONS.—There
4 are authorized to be appropriated to carry out this sec-
5 tion—

6 (1) \$375,000,000 for fiscal year 2007;

7 (2) \$750,000,000 for fiscal year 2008;

8 (3) \$1,125,000,000 for fiscal year 2009; and

9 (4) \$1,500,000,000 for each of the fiscal years
10 2010 through 2013.

11 **CHAPTER 6—GRADUATE RESEARCH**
12 **FELLOWSHIPS**

13 **SEC. 181. GRADUATE RESEARCH FELLOWSHIPS IN SCI-**
14 **ENTIFIC AREAS OF NATIONAL NEED.**

15 (a) FELLOWSHIPS AUTHORIZED.—From the
16 amounts appropriated under subsection (e), the Secretary
17 shall establish a fellowship program to provide tuition and
18 financial support for eligible students pursuing master’s
19 and doctoral degrees in mathematics or science (including
20 engineering) or other areas of national need.

21 (b) AREAS OF NATIONAL NEED.—The Secretary may
22 establish, on an annual basis, areas of national need im-
23 portant to the mission of the Department of Energy, and
24 may use the areas of national need in determining the spe-
25 cific fields of study to be supported by fellowship awards

1 under this section. In establishing the areas of national
2 need, the Secretary shall consider the results of the survey
3 conducted under section 1101 of the Energy Policy Act
4 of 2005 (42 U.S.C. 16411).

5 (c) USE AND AMOUNT OF AWARDS.—A fellowship
6 award under this section shall be—

7 (1) in an amount that is commensurate with
8 the amount of similar graduate research fellowships
9 awarded by the National Science Foundation; and

10 (2) used by the eligible student to cover edu-
11 cational expenses and to provide additional financial
12 support.

13 (d) DEFINITIONS.—In this section:

14 (1) ELIGIBLE STUDENT.—The term “eligible
15 student” means a student who is enrolled in a mas-
16 ter’s or doctoral degree program in mathematics or
17 science (including engineering) or other areas of na-
18 tional need at an institution of higher education (as
19 defined in section 171).

20 (2) SECRETARY.—The term “Secretary” means
21 the Secretary of Energy.

22 (e) AUTHORIZATION OF APPROPRIATIONS.—There
23 are authorized to be appropriated under this section—

24 (1) \$225,000,000 for fiscal year 2007;

25 (2) \$450,000,000 for fiscal year 2008; and

1 (3) \$675,000,000 for each of the fiscal years
2 2009 through 2013.

3 **Subtitle B—National Science Foun-**
4 **dation Early-Career Research**
5 **Grants**

6 **SEC. 191. NATIONAL SCIENCE FOUNDATION EARLY-CAREER**
7 **RESEARCH GRANTS.**

8 (a) PURPOSE.—It is the purpose of this section to
9 authorize research grants in the National Science Founda-
10 tion, for early-career scientists and engineers for purposes
11 of pursuing independent research.

12 (b) DEFINITION OF ELIGIBLE EARLY-CAREER RE-
13 SEARCHER.—In this section, the term “eligible early-ca-
14 reer researcher” means an individual who—

15 (1) completed a doctorate or other terminal de-
16 gree not more than 10 years before the date of en-
17 actment of this Act and has demonstrated promise
18 in the field of science, technology, engineering, or
19 mathematics; or

20 (2) has an equivalent professional qualification
21 in the field of science, technology, engineering, or
22 mathematics.

23 (c) GRANT PROGRAM AUTHORIZED.—

24 (1) IN GENERAL.—The Director of the National
25 Science Foundation shall award not less than 65

1 grants per year to outstanding eligible early-career
2 researchers to support the work of such researchers
3 in universities, private industry, or federally-funded
4 research and development centers.

5 (2) APPLICATION.—An eligible early-career re-
6 searcher who desires to receive a grant under this
7 section shall submit to the Director of the National
8 Science Foundation an application at such time, in
9 such manner, and accompanied by such information
10 as the Director may require.

11 (3) SPECIAL CONSIDERATION.—In awarding
12 grants under this section, the Director of the Na-
13 tional Science Foundation shall give special consider-
14 ation to eligible early-career researchers who have
15 followed alternative career paths such as working
16 part-time or in non-academic settings, or who have
17 taken a significant career break or other leave of ab-
18 sence.

19 (4) DURATION AND AMOUNT.—A grant under
20 this section shall be 5 years in duration. An eligible
21 early career-researcher who receives a grant under
22 this section shall receive \$100,000 for each year of
23 the grant period.

24 (5) USE OF FUNDS.—An eligible early career-
25 researcher who receives a grant under this section

1 shall use the grant funds for basic research in nat-
2 ural sciences, engineering, mathematics, or computer
3 sciences at a university, private industry, or feder-
4 ally-funded research and development center.

5 (6) AUTHORIZATION OF APPROPRIATIONS.—

6 There are authorized to be appropriated to carry out
7 this section—

8 (A) \$6,500,000 for fiscal year 2007;

9 (B) \$13,000,000 for fiscal year 2008;

10 (C) \$19,500,000 for fiscal year 2009;

11 (D) \$26,000,000 for fiscal year 2010; and

12 (E) \$32,500,000 for fiscal year 2011.

13 **TITLE II—SOWING THE SEEDS**
14 **THROUGH SCIENCE AND EN-**
15 **GINEERING RESEARCH**

16 **Subtitle A—Office of Science and**
17 **Technology Policy Matters**

18 **SEC. 211. COORDINATION OF SCIENCE, MATHEMATICS, AND**

19 **ENGINEERING EDUCATION PROGRAMS.**

20 (a) NATIONAL GOALS.—

21 (1) BODY FOR ESTABLISHMENT OF GOALS.—

22 The Director of the Office of Science and Tech-
23 nology Policy shall establish within the President's
24 Committee of Advisors on Science and Technology a

1 standing subcommittee on education in mathematics,
2 science, and engineering in the Federal Government.

3 (2) RESPONSIBILITY.—The subcommittee es-
4 tablished under this subsection shall—

5 (A) develop national goals for the support
6 by the Federal Government of education in
7 mathematics, science, and engineering; and

8 (B) periodically review and update any
9 goals so developed.

10 (3) PUBLIC COMMENT.—The Director shall
11 enter into an agreement with the National Academy
12 of Sciences or other appropriate scientific organiza-
13 tion to seek public comment on the national goals
14 developed under this subsection.

15 (b) DEPUTY ASSISTANT DIRECTOR FOR SCIENCE,
16 MATHEMATICS, AND ENGINEERING EDUCATION PRO-
17 GRAMS.—

18 (1) IN GENERAL.—There shall be in the Office
19 of Science and Technology Policy a Deputy Assist-
20 ant Director of the Office of Science and Technology
21 Policy for Science, Mathematics, and Engineering
22 Education Programs who shall be appointed by the
23 Director of the Office of Science and Technology
24 Policy, acting through the Associate Director for
25 Science of the Office of Science and Technology Pol-

1 iciency, from among individuals having the qualifications
2 specified in paragraph (2).

3 (2) QUALIFICATIONS FOR APPOINTMENT.—The
4 qualifications of an individual for appointment as
5 Deputy Assistant Director shall include such profes-
6 sional experience and expertise, and such other
7 qualifications, as the Director of the Office of
8 Science and Technology Policy considers appropriate
9 to permit such individual to advise the Director on
10 all matters relating to the education programs of the
11 Executive Branch on mathematics, science, and
12 technology.

13 (c) RESPONSIBILITY.—The Deputy Assistant Direc-
14 tor of the Office of Science and Technology Policy for
15 Science, Mathematics, and Engineering Educations Pro-
16 grams shall ensure effective coordination among the de-
17 partments, agencies, and elements of the Federal Govern-
18 ment in the discharge of the education programs of the
19 Executive Branch on mathematics, science, and tech-
20 nology.

21 (d) PLAN FOR COORDINATION OF PROGRAMS.—

22 (1) IN GENERAL.—In carrying out the responsi-
23 bility described in subsection (c), the Deputy Assist-
24 ant Director of the Office of Science and Technology
25 Policy for Science, Mathematics, and Engineering

1 Educations Programs shall develop each year a plan
2 for the coordination of the education programs of
3 the Executive Branch on mathematics, science, and
4 technology during the five fiscal years beginning in
5 the year of such plan.

6 (2) ELEMENTS.—Each plan developed under
7 this subsection shall include—

8 (A) mechanisms for the coordination of the
9 education programs of the Executive Branch on
10 mathematics, science, and technology during
11 the five fiscal years beginning in the year of
12 such plan; and

13 (B) recommendations on funding, by agen-
14 cy, of such education programs during each
15 such fiscal year.

16 (3) CONSISTENCY WITH NATIONAL GOALS.—
17 Each plan developed under this subsection shall be
18 consistent with the most current national goals for
19 the support by the Federal Government of education
20 in mathematics, science, and engineering developed
21 under subsection (a).

22 (4) AVAILABILITY TO PUBLIC.—The Director of
23 the Office of Science and Technology Policy shall
24 take appropriate actions to ensure that each plan de-

1 veloped under this subsection is available to the pub-
2 lic.

3 (e) STAFFING AND OTHER RESOURCES.—The Direc-
4 tor of the Office of Science and Technology Policy shall
5 assign the Deputy Assistant Director of the Office of
6 Science and Technology Policy for Science, Mathematics,
7 and Engineering Educations Programs such personnel
8 and other resources as the Director considers appropriate
9 in order to permit the Deputy Assistant Director to carry
10 out the duties of the Deputy Assistant Director under this
11 section.

12 (f) DEADLINES FOR CERTAIN ACTIONS.—

13 (1) ESTABLISHMENT OF SUBCOMMITTEE.—The
14 Director of the Office of Science and Technology
15 Policy shall establish the subcommittee required by
16 subsection (a)(1) not later than 30 days after the
17 date of the enactment of this Act.

18 (2) APPOINTMENT OF DEPUTY ASSISTANT DI-
19 RECTOR.—The Director of the Office of Science and
20 Technology Policy, acting through the Associate Di-
21 rector for Science of the Office of Science and Tech-
22 nology Policy, shall make the first appointment to
23 the position of Deputy Assistant Director of the Of-
24 fice of Science and Technology Policy for Science,
25 Mathematics, and Engineering Education Programs

1 under subsection (b)(1) not later than 60 days after
2 the date of the enactment of this Act.

3 **SEC. 212. NATIONAL COORDINATION OFFICE FOR AD-**
4 **VANCED RESEARCH INSTRUMENTATION AND**
5 **FACILITIES.**

6 (a) ESTABLISHMENT.—

7 (1) IN GENERAL.—The Director of the Office of
8 Science and Technology Policy shall establish within
9 the Office of Science and Technology Policy an of-
10 fice to be known as the “National Coordination Of-
11 fice for Advanced Research Instrumentation and Fa-
12 cilities”.

13 (2) HEAD OF OFFICE.—The head of the Na-
14 tional Coordination Office for Advanced Research
15 Instrumentation and Facilities shall be the Director
16 of the National Coordination Office for Advanced
17 Research Instrumentation and Facilities, who shall
18 be appointed by the Director of the Office of Science
19 and Technology Policy.

20 (3) STAFF AND OTHER RESOURCES.—The Di-
21 rector of the Office of Science and Technology Policy
22 shall assign to the National Coordination Office for
23 Advanced Research Instrumentation and Facilities
24 such personnel and other resources as the Director
25 of the Office of Science and Technology Policy con-

1 siders appropriate in order to permit the National
2 Coordination Office for Advanced Research Instru-
3 mentation and Facilities to carry out its duties
4 under this section.

5 (4) DEADLINE FOR ESTABLISHMENT.—The Na-
6 tional Coordination Office for Advanced Research
7 Instrumentation and Facilities shall be established
8 not later than 30 days after the date of the enact-
9 ment of this Act.

10 (b) DUTIES.—

11 (1) IN GENERAL.—The National Coordination
12 Office for Advanced Research Instrumentation and
13 Facilities shall coordinate the award by the depart-
14 ments, agencies, and other elements of the Federal
15 Government of grants for advanced research instru-
16 mentation and facilities.

17 (2) ADVANCED RESEARCH INSTRUMENTATION
18 AND FACILITIES.—

19 (A) IN GENERAL.—For purposes of this
20 section, advanced research instrumentation and
21 facilities are specially designed and developed
22 instruments or tools (whether of a physical or
23 nonphysical nature) that are available commer-
24 cially but are overly expensive for design and
25 development under a single research grant.

1 (B) EXAMPLES.—Examples of advanced
2 research instrumentation and facilities for pur-
3 poses of this section include the following:

4 (i) Single, stand-alone instruments or
5 instrument suites.

6 (ii) Networks.

7 (iii) Computational modeling applica-
8 tions.

9 (iv) Computer databases.

10 (v) Sensor systems.

11 (vi) Facilities that house ensembles of
12 interrelated instruments.

13 (vii) Instruments assembled from
14 components.

15 (3) DISCHARGE OF DUTIES.—The Office shall
16 coordinate the award of grants for advanced re-
17 search instrumentation and facilities under this sec-
18 tion in accordance with the strategic implementation
19 plan developed under subsection (c).

20 (c) STRATEGIC IMPLEMENTATION PLAN.—

21 (1) PLAN REQUIRED.—Not later than one year
22 after the date of the enactment of this Act, the Di-
23 rector of the Office of Science and Technology Policy
24 shall, in consultation with the Director of the Office
25 of Management and Budget, develop a plan for the

1 award by the departments, agencies, and other ele-
2 ments of the Federal Government of grants for ad-
3 vanced research instrumentation and facilities dur-
4 ing the five-year period beginning on the date of the
5 issuance of the plan.

6 (2) ELEMENTS.—The plan required by para-
7 graph (1) shall include the following:

8 (A) Criteria applicable to the award of
9 grants for advanced research instrumentation
10 and facilities, including criteria applicable to—

11 (i) scientific and technical merit;

12 (ii) the identification of the strategic
13 requirements of the departments, agencies,
14 and other elements of the Federal Govern-
15 ment; and

16 (iii) national science and technology
17 needs.

18 (B) An assessment of the current and an-
19 ticipated needs of the departments, agencies,
20 and other elements of the Federal Government
21 for advanced research instrumentation and fa-
22 cilities.

23 (C) A report to Congress on the proposed
24 allocation of funds, including amounts author-
25 ized to be appropriated by subsection (f), by the

1 departments, agencies, and other elements of
2 the Federal Government for grants for ad-
3 vanced research instrumentation and facilities.

4 (3) PUBLIC COMMENT.—In developing the plan
5 required by paragraph (1), the Director of the Office
6 of Science and Technology Policy shall enter into an
7 agreement with the National Academy of Sciences,
8 or other similar entity, to secure public comments on
9 the plan.

10 (d) RECOMMENDATIONS ON AGENCY FUNDING.—

11 (1) IN GENERAL.—The Director of the Office of
12 Science and Technology Policy shall, in consultation
13 with the Director of the National Coordination Of-
14 fice for Advanced Research Instrumentation and Fa-
15 cilities, make recommendations each year to the Di-
16 rector of the Office of Management and Budget on
17 the amount of funds to be requested for the depart-
18 ments, agencies, and other elements of the Federal
19 Government for the fiscal year beginning in such
20 year for the award of grants for advanced research
21 instrumentation and facilities.

22 (2) PURPOSE.—The purpose of the rec-
23 ommendations under paragraph (1) shall be to ad-
24 vise the Director of the Office of Management and
25 Budget on the amounts to be requested in the budg-

1 et of the President (as submitted to Congress under
2 section 1105 of title 31, United States Code) for
3 each fiscal year for the award of grants for advanced
4 research instrumentation and facilities.

5 (e) USE OF GRANT AMOUNTS.—Amounts under
6 grants awarded by departments, agencies, and other ele-
7 ments of the Federal Government for advanced research
8 instrumentation and facilities may be used for purposes
9 as follows:

10 (1) The purchase and installation of instru-
11 ments.

12 (2) The commissioning of equipment.

13 (3) The calibration of instruments.

14 (4) The acquisition of parts and materials for
15 construction of instruments.

16 (5) Personnel costs of personnel engaged in the
17 development of instruments.

18 (6) The operation and maintenance of instru-
19 ments.

20 (7) Such other purposes as the Director of the
21 National Coordination Office for Advanced Research
22 Instrumentation and Facilities considers appro-
23 priate.

24 (f) AUTHORIZATION OF APPROPRIATIONS.—

1 (1) IN GENERAL.—In addition to amounts ap-
2 appropriated under Federal law other than this Act,
3 there is authorized to be appropriated for each of
4 fiscal years 2008 through 2012, to carry out this
5 section (including the plan specified in subsection
6 (c))—

7 (A) \$1,000,000 to the Office of Science
8 and Technology Policy;

9 (B) \$150,000,000 to the National Science
10 Foundation;

11 (C) \$87,000,000 to the Department of De-
12 fense;

13 (D) \$152,000,000 to the Office of Science
14 of the Department of Energy; and

15 (E) \$117,000,000 to the National Aero-
16 nautics and Space Administration.

17 (2) AVAILABILITY.—The amount authorized to
18 be appropriated by this subsection shall remain
19 available until expended.

20 **SEC. 213. HIGH-RISK, HIGH-PAYOFF RESEARCH.**

21 (a) IN GENERAL.—Not later than 180 days after the
22 date of the enactment of this Act, the Director of the Of-
23 fice of Science and Technology Policy shall, in consultation
24 with the Director of the Office of Management and Budg-
25 et, establish guidelines to ensure that each Federal re-

1 search agency allocates not less than 8 percent of the
2 funds available to such agency each fiscal year for basic
3 research for high-risk, high-payoff research.

4 (b) HIGH-RISK, HIGH-PAYOFF RESEARCH.—For
5 purposes of this section, high-risk, high-payoff research is
6 research that—

7 (1) has the potential for yielding results with
8 far-ranging or wide-ranging implications; but

9 (2) is too novel or spans too diverse a range of
10 disciplines to fare well in the traditional peer review
11 process.

12 (c) GUIDELINE ELEMENTS.—The guidelines required
13 by subsection (a) shall include provisions on the following:

14 (1) Expedited procedures for the approval of
15 the use of funds for high-risk, high-payoff research.

16 (2) Annual reports by Federal research agen-
17 cies on activities relating to high-risk, high-payoff
18 research.

19 (3) Criteria to establish the duration of funding
20 for high-risk, high-payoff research projects.

21 (4) Objectives for high-risk, high-payoff re-
22 search projects.

23 (5) Such other criteria, objectives, or other mat-
24 ters as the Director of the Office of Science and
25 Technology Policy considers appropriate.

1 (d) PUBLIC COMMENT.—The Director of the Office
2 of Science and Technology Policy shall enter into an
3 agreement with the National Academy of Sciences, or
4 similar entity, to solicit public comment, through a broad
5 media solicitation, on the guidelines required by subsection
6 (a) before the final issuance of such guidelines.

7 (e) REVIEW.—The President’s Committee of Advisors
8 on Science and Technology shall, not less often than once
9 every two years, conduct a review to determine whether
10 or not Federal research agencies are allocating basic re-
11 search funds in accordance with the guidelines required
12 by subsection (a).

13 (f) ANNUAL REPORTS TO CONGRESS.—

14 (1) REPORTS REQUIRED.—The Director of the
15 Office of Management and Budget shall, in consulta-
16 tion with the Director of the Office of Science and
17 Technology Policy, submit to Congress each year a
18 report on the use by Federal research agencies of
19 basic research funds for high-risk, high-payoff re-
20 search during the preceding fiscal year.

21 (2) TIME FOR SUBMITTAL.—The Director of
22 the Office of Management and Budget shall submit
23 the report required by paragraph (1) for a year to-
24 gether with the budget of the President for the fiscal
25 year beginning in such year (as submitted to Con-

1 gress under section 1105 of title 31, United States
2 Code).

3 (g) DEFINITIONS.—In this section:

4 (1) FEDERAL RESEARCH AGENCY.—The term
5 “Federal research agency” means a major organiza-
6 tional component of a department or agency of the
7 Federal Government, or other establishment of the
8 Federal Government operating with appropriated
9 funds, that has as its primary purpose the perform-
10 ance of scientific research.

11 (2) MAJOR ORGANIZATIONAL COMPONENT.—
12 The term “major organizational component”, with
13 respect to a department, agency, or other establish-
14 ment of the Federal Government, means a compo-
15 nent of the department, agency, or other establish-
16 ment that is administered by an individual whose
17 rate of basic pay is not less than the rate of basic
18 pay payable under level V of the Executive Schedule
19 under section 5316 of title 5, United States Code.

20 **SEC. 214. PRESIDENT’S INNOVATION AWARD.**

21 (a) AUTHORITY TO AWARD.—

22 (1) IN GENERAL.—The Director of the Office of
23 Science and Technology Policy shall, subject to the
24 approval of the President, award each year to one or
25 more individuals an award that recognizes recent in-

1 novations in science and engineering in the United
2 States.

3 (2) DESIGNATION.—The award made under
4 this section shall be known as the “President’s Inno-
5 vation Award”.

6 (3) PRESENTATION.—The presentation of
7 awards made under this section shall be made by the
8 President.

9 (b) SELECTION OF RECIPIENTS.—

10 (1) IN GENERAL.—The Director of the Office of
11 Science and Technology Policy shall identify recipi-
12 ents of the award under this section from among in-
13 dividuals whose achievements are recognized in the
14 most recent document entitled “Interagency Re-
15 search and Development Priorities” published by the
16 Director of the Office of Management and Budget
17 and the Director of the Office of Science and Tech-
18 nology Policy.

19 (2) SOLICITATION OF RECOMMENDATIONS.—In
20 identifying potential recipients of the award under
21 this section, the Director of the Office of Science
22 and Technology Policy shall solicit recommendations
23 from the heads of Federal agencies and the general
24 public.

1 (c) NATURE OF AWARD.—The award made under
2 this section shall consist of the following:

3 (1) A medal, of such design as the Director of
4 the Office of Science and Technology Policy shall de-
5 termine (subject to the approval of the President).

6 (2) A certificate of recognition.

7 (3) A cash prize, in such amount as the Direc-
8 tor considers appropriate.

9 (d) AUTHORIZATION OF APPROPRIATIONS.—There is
10 hereby authorized to be appropriated to the Office of
11 Science and Technology Policy each fiscal year \$1,000,000
12 for the making of awards under this section.

13 **Subtitle B—National Aeronautics**
14 **and Space Administration Matters**

15 **SEC. 221. NATIONAL AERONAUTICS AND SPACE ADMINIS-**
16 **TRATION EARLY-CAREER RESEARCH**
17 **GRANTS.**

18 (a) PURPOSE.—It is the purpose of this section to
19 authorize research grants in the National Aeronautics and
20 Space Administration for early-career scientists and engi-
21 neers for purposes of pursuing independent research.

22 (b) DEFINITION OF ELIGIBLE EARLY-CAREER RE-
23 SEARCHER.—In this section, the term “eligible early-ca-
24 reer researcher” means an individual who—

1 (1) completed a doctorate or other terminal de-
2 gree not more than 10 years before the date of en-
3 actment of this Act and has demonstrated promise
4 in the field of science, technology, engineering, or
5 mathematics; or

6 (2) has an equivalent professional qualification
7 in the field of science, technology, engineering, or
8 mathematics.

9 (c) GRANT PROGRAM AUTHORIZED.—

10 (1) IN GENERAL.—The Administrator of the
11 National Aeronautics and Space Administration
12 shall award not less than 45 grants per year to out-
13 standing eligible early-career researchers to support
14 the work of such researchers in universities, private
15 industry, or federally-funded research and develop-
16 ment centers.

17 (2) APPLICATION.—An eligible early-career re-
18 searcher who desires to receive a grant under this
19 section shall submit to the Administrator of the Na-
20 tional Aeronautics and Space Administration an ap-
21 plication at such time, in such manner, and accom-
22 panied by such information as the Administrator
23 may require.

24 (3) SPECIAL CONSIDERATION.—In awarding
25 grants under this section, the Administrator of the

1 National Aeronautics and Space Administration
2 shall give special consideration to eligible early-career
3 researchers who have followed alternative career
4 paths such as working part-time or in non-academic
5 settings, or who have taken a significant career
6 break or other leave of absence.

7 (4) DURATION AND AMOUNT.—A grant under
8 this section shall be 5 years in duration. An eligible
9 early career-researcher who receives a grant under
10 this section shall receive \$100,000 for each year of
11 the grant period.

12 (5) USE OF FUNDS.—An eligible early career-
13 researcher who receives a grant under this section
14 shall use the grant funds for basic research in nat-
15 ural sciences, engineering, mathematics, or computer
16 sciences at a university, private industry, or feder-
17 ally-funded research and development center.

18 (6) AUTHORIZATION OF APPROPRIATIONS.—
19 There are authorized to be appropriated to carry out
20 this section—

- 21 (A) \$4,500,000 for fiscal year 2007;
22 (B) \$9,000,000 for fiscal year 2008;
23 (C) \$13,500,000 for fiscal year 2009;
24 (D) \$18,000,000 for fiscal year 2010; and
25 (E) \$22,500,000 for fiscal year 2011.

1 **SEC. 222. AUTHORIZATION OF APPROPRIATIONS FOR THE**
2 **NATIONAL AERONAUTICS AND SPACE ADMIN-**
3 **ISTRATION FOR BASIC SCIENCES.**

4 (a) IN GENERAL.—There is hereby authorized to be
5 appropriated for the National Aeronautics and Space Ad-
6 ministration for basic sciences for research specified in
7 subsection (b), amounts as follows:

8 (1) \$2,768,000,000 for fiscal year 2007.

9 (2) \$3,044,000,000 for fiscal year 2008.

10 (3) \$3,349,000,000 for fiscal year 2009.

11 (4) \$3,684,000,000 for fiscal year 2010.

12 (5) \$4,052,000,000 for fiscal year 2011.

13 (6) \$4,457,000,000 for fiscal year 2012.

14 (7) \$4,903,000,000 for fiscal year 2013.

15 (b) COVERED RESEARCH.—The research specified in
16 this subsection is research under programs as follows:

17 (1) The Solar System Exploration Research
18 Program.

19 (2) The Mars Exploration Research Program.

20 (3) The Astronomical Search for Origins Re-
21 search Program.

22 (4) The Structure and Evolution of the Uni-
23 verse Research Program.

24 (5) The Earth–Sun Connection Research Pro-
25 gram.

1 (6) The Earth Systems Science Research Pro-
2 gram.

3 (7) The Earth Science Applications Research
4 Program.

5 (8) The Biological Sciences Research Program.

6 (9) The Physical Sciences Research Program.

7 (10) The Aeronautics Program.

8 (11) Such other basic research programs as the
9 Administrator of the National Aeronautics and
10 Space Administration may determine to be appro-
11 priate, after notifying the appropriate committees of
12 Congress of the Administrator's intent to make the
13 determination.

14 **Subtitle C—Communications**
15 **Matters**

16 **SEC. 231. SENSE OF SENATE ON POLICIES TO ACCELERATE**
17 **DEPLOYMENT OF ACCESS TO BROADBAND**
18 **INTERNET.**

19 It is the sense of the Senate that Congress and the
20 Federal Communications Commission should work to-
21 gether to ensure the implementation of regulatory policies
22 that facilitate and accelerate the deployment of access to
23 broadband Internet to order to provide broadband Inter-
24 net service to as many residences, businesses, and schools
25 as possible in both urban areas and rural areas.

1 **Subtitle D—Science Parks**

2 **SEC. 241. DEVELOPMENT OF SCIENCE PARKS.**

3 (a) FINDING.—Section 2 of the Stevenson-Wydler
4 Technology Innovation Act of 1980 (15 U.S.C. 3701) is
5 amended by adding at the end the following new para-
6 graph:

7 “(12) It is in the best interests of the Nation
8 to encourage the formation of science parks to pro-
9 mote the clustering of innovation through high tech-
10 nology activities.”.

11 (b) DEFINITION.—Section 4 of such Act (15 U.S.C.
12 3703) is amended by adding at the end the following new
13 paragraphs:

14 “(14) ‘Science park’ means a group of inter-
15 related companies and institutions, including sup-
16 pliers, service providers, institutions of higher edu-
17 cation, start-up incubators, and trade associations
18 that cooperate and compete and are located in a spe-
19 cific area whose administration promotes real estate
20 development, technology transfer, and partnerships
21 between such companies and institutions, and does
22 not mean a business or industrial park.

23 “(15) ‘Business or industrial park’ means pri-
24 marily a for-profit real estate venture of businesses
25 or industries which do not necessarily reinforce each

1 other through supply chain or technology transfer
2 mechanisms.

3 “(16) ‘Science park infrastructure’ means facili-
4 ties that support the daily economic activity of a
5 science park.”.

6 (c) PROMOTION OF DEVELOPMENT OF SCIENCE
7 PARKS.—Section 5(c) of such Act (15 U.S.C. 3704(c)) is
8 amended—

9 (1) in paragraph (14), by striking “and” at the
10 end;

11 (2) in paragraph (15), by striking the period at
12 the end and inserting “; and”; and

13 (3) by adding at the end the following new
14 paragraph:

15 “(16) promote the formation of science parks.”.

16 (d) SCIENCE PARKS.—Such Act is further amended
17 by adding at the end the following new section:

18 **“SEC. 24. SCIENCE PARKS.**

19 “(a) DEVELOPMENT OF PLANS FOR CONSTRUCTION
20 OF SCIENCE PARKS.—

21 “(1) IN GENERAL.—The Secretary shall award
22 grants for the development of feasibility studies and
23 plans for the construction of new or expansion of ex-
24 isting science parks.

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

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

4 “(3) AWARD.—

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

8 “(B) ADVERTISING.—The Secretary shall
9 advertise any competition under this paragraph
10 in the Commerce Business Daily.

11 “(C) SELECTION CRITERIA.—The Sec-
12 retary shall publish the criteria to be utilized in
13 any competition under this paragraph for the
14 selection of recipients of grants under this sub-
15 section. Such criteria shall include requirements
16 relating to—

17 “(i) the number of jobs to be created
18 at the science park each year for a period
19 of 5 years;

20 “(ii) the funding to be required to
21 construct or expand the science park over
22 the first 5 years;

23 “(iii) the amount and type of cost
24 matching by the applicant;

1 “(iv) the types of businesses and re-
2 search entities expected in the science park
3 and surrounding community;

4 “(v) letters of intent by businesses
5 and research entities to locate in the
6 science park;

7 “(vi) the capacity of the science park
8 for expansion over a period of 25 years;

9 “(vii) the quality of life at the science
10 park for employees at the science park;

11 “(viii) the capability to attract a well
12 trained workforce to the science park;

13 “(ix) the management of the science
14 park;

15 “(x) expected risks in the construction
16 and operation of the science park;

17 “(xi) risk mitigation;

18 “(xii) transportation and logistics;

19 “(xiii) physical infrastructure, includ-
20 ing telecommunications; and

21 “(xiv) ability to collaborate with other
22 science parks throughout the world.

23 “(4) AUTHORIZATION OF APPROPRIATIONS.—

24 There is authorized to be appropriated for each of

1 fiscal years 2007 through 2012, \$7,500,000 to carry
2 out this subsection.

3 “(b) REVOLVING LOAN PROGRAM FOR DEVELOP-
4 MENT OF SCIENCE PARK INFRASTRUCTURE.—

5 “(1) IN GENERAL.—The Secretary shall make
6 grants to six regional centers for the development of
7 existing science park infrastructure through the op-
8 eration of revolving loan funds by such centers.

9 “(2) SELECTION OF CENTERS.—

10 “(A) IN GENERAL.—The Secretary shall
11 select the regional centers to be awarded grants
12 under this subsection utilizing such criteria as
13 the Secretary shall prescribe.

14 “(B) CRITERIA.—The criteria prescribed
15 by the Secretary under this paragraph shall in-
16 clude criteria relating to revolving loan funds
17 and revolving loan fund operators under para-
18 graph (4), including—

19 “(i) the qualifications of principal offi-
20 cers;

21 “(ii) non-Federal cost matching re-
22 quirements; and

23 “(iii) conditions for the termination of
24 loan funds.

1 “(3) LIMITATION ON LOAN AMOUNT.—The
2 amount of any loan for the development of existing
3 science park infrastructure that is funded under this
4 subsection may not exceed \$3,000,000.

5 “(4) REVOLVING LOAN FUNDS.—

6 “(A) IN GENERAL.—A regional center re-
7 ceiving a grant under this subsection shall fund
8 the development of existing science park infra-
9 structure through the utilization of a revolving
10 loan fund.

11 “(B) OPERATION AND INTEGRITY.—The
12 Secretary shall prescribe regulations to main-
13 tain the proper operation and financial integrity
14 of revolving loan funds under this paragraph.

15 “(C) EFFICIENT ADMINISTRATION.—The
16 Secretary may—

17 “(i) at the request of a grantee,
18 amend and consolidate grant agreements
19 governing revolving loan funds to provide
20 flexibility with respect to lending areas and
21 borrower criteria;

22 “(ii) assign or transfer assets of a re-
23 volving loan fund to a third party for the
24 purpose of liquidation, and a third party

1 may retain assets of the fund to defray
2 costs related to liquidation; and

3 “(iii) take such actions as are appro-
4 priate to enable revolving loan fund opera-
5 tors to sell or securitize loans (except that
6 the actions may not include issuance of a
7 Federal guaranty by the Secretary).

8 “(D) TREATMENT OF ACTIONS.—An action
9 taken by the Secretary under this paragraph
10 with respect to a revolving loan fund shall not
11 constitute a new obligation if all grant funds
12 associated with the original grant award have
13 been disbursed to the recipient.

14 “(E) PRESERVATION OF SECURITIES
15 LAWS.—

16 “(i) NOT TREATED AS EXEMPTED SE-
17 CURITIES.—No securities issued pursuant
18 to subparagraph (C)(iii) shall be treated as
19 exempted securities for purposes of the Se-
20 curities Act of 1933 or the Securities Ex-
21 change Act of 1934, unless exempted by
22 rule or regulation of the Securities and Ex-
23 change Commission.

24 “(ii) PRESERVATION.—Except as pro-
25 vided in clause (i), no provision of this

1 paragraph or any regulation issued by the
2 Secretary under this paragraph shall su-
3 persede or otherwise affect the application
4 of the securities laws (as such term is de-
5 fined in section 2(a)(47) of the Securities
6 Exchange Act of 1934) or the rules, regu-
7 lations, or orders of the Securities and Ex-
8 change Commission or a self-regulatory or-
9 ganization thereunder.

10 “(5) AUTHORIZATION OF APPROPRIATIONS.—

11 There is authorized to be appropriated for each of
12 fiscal years 2007 through 2012, \$60,000,000 to
13 carry out this subsection.

14 “(c) LOAN GUARANTEES FOR SCIENCE PARK INFRA-
15 STRUCTURE.—

16 “(1) IN GENERAL.—The Secretary shall guar-
17 antee up to 80 percent of the loan amount for loans
18 exceeding \$10,000,000 for projects for the construc-
19 tion of science park infrastructure.

20 “(2) LIMITATIONS ON GUARANTEE AMOUNTS.—

21 The maximum amount of loan principal guaranteed
22 under this subsection may not exceed—

23 “(A) \$50,000,000 with respect to any sin-
24 gle project; and

1 “(B) \$500,000,000 with respect to all
2 projects.

3 “(3) SELECTION OF GUARANTEE RECIPI-
4 ENTS.—The Secretary shall select recipients of loan
5 guarantees under this subsection based upon the
6 ability of the recipient to collateralize the loan
7 amount through bonds, equity, property, and other
8 such criteria as the Secretary shall prescribe.

9 “(4) TERMS AND CONDITIONS FOR LOAN GUAR-
10 ANTEES.—For purposes of this section, the loans
11 guaranteed shall be subject to such terms and condi-
12 tions as the Secretary may prescribe, except that—

13 “(A) the final maturity of such loans made
14 or guaranteed shall not exceed (as determined
15 by the Secretary) the lesser of—

16 “(i) 30 years and 32 days; or

17 “(ii) 90 percent of the useful life of
18 any physical asset to be financed by such
19 loan;

20 “(B) no loan made or guaranteed may be
21 subordinated to another debt contracted by the
22 borrower or to any other claims against the bor-
23 rowers in the case of default;

24 “(C) no loan may be guaranteed unless the
25 Secretary determines that the lender is respon-

1 sible and that adequate provision is made for
2 servicing the loan on reasonable terms and pro-
3 tecting the financial interest of the United
4 States;

5 “(D) no loan may be guaranteed if the in-
6 come from such loan is excluded from gross in-
7 come for purposes of chapter 1 of the Internal
8 Revenue Code of 1986, or if the guarantee pro-
9 vides significant collateral or security, as deter-
10 mined by the Secretary, for other obligations
11 the income from which is so excluded;

12 “(E) any guarantee shall be conclusive evi-
13 dence that said guarantee has been properly ob-
14 tained, that the underlying loan qualified for
15 such guarantee, and that, but for fraud or ma-
16 terial misrepresentation by the holder, such
17 guarantee shall be presumed to be valid, legal,
18 and enforceable;

19 “(F) the Secretary shall prescribe explicit
20 standards for use in periodically assessing the
21 credit risk of new and existing direct loans or
22 guaranteed loans;

23 “(G) the Secretary must find that there is
24 a reasonable assurance of repayment before ex-
25 tending credit assistance; and

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

6 “(5) PAYMENT OF LOSSES.—For purposes of
7 this section—

8 “(A) IN GENERAL.—If, as a result of a de-
9 fault by a borrower under a guaranteed loan,
10 after the holder thereof has made such further
11 collection efforts and instituted such enforce-
12 ment proceedings as the Secretary may require,
13 the Secretary determines that the holder has
14 suffered a loss, the Secretary shall pay to such
15 holder the percentage of such loss (not more
16 than 80 percent) specified in the guarantee con-
17 tract. Upon making any such payment, the Sec-
18 retary shall be subrogated to all the rights of
19 the recipient of the payment. The Secretary
20 shall be entitled to recover from the borrower
21 the amount of any payments made pursuant to
22 any guarantee entered into under this section.

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

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

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

11 “(D) MANAGEMENT OF PROPERTY.—Not-
12 withstanding any other provision of law relating
13 to the acquisition, handling, or disposal of prop-
14 erty by the United States, the Secretary shall
15 have the right in the Secretary’s discretion to
16 complete, recondition, reconstruct, renovate, re-
17 pair, maintain, operate, or sell any property ac-
18 quired by the Secretary pursuant to the provi-
19 sions of this section.

20 “(6) REVIEW.—The Comptroller General of the
21 United States shall, within 2 years of the date of en-
22 actment of this section, conduct a review of the sub-
23 sidy estimates for the loan guarantees under this
24 subsection, and shall submit to Congress a report on
25 the review conducted under this paragraph.

1 “(7) TERMINATION.—No loan may be guaran-
2 teed under this subsection after September 30,
3 2012.

4 “(8) AUTHORIZATION OF APPROPRIATIONS.—
5 There is authorized to be appropriated—

6 “(A) \$35,000,000 for the cost, as defined
7 in section 502(5) of the Federal Credit Reform
8 Act of 1990, of guaranteeing \$500,000,000 of
9 loans under this subsection; and

10 “(B) \$6,000,000 for administrative ex-
11 penses for fiscal year 2007 and such sums as
12 necessary thereafter for administrative expenses
13 in subsequent years.

14 “(d) NATIONAL ACADEMY OF SCIENCES EVALUA-
15 TION.—

16 “(1) IN GENERAL.—The Secretary shall enter
17 into an agreement with the National Academy of
18 Sciences under which the Academy shall evaluate, on
19 a tri-annual basis, the activities under this section.

20 “(2) TRI-ANNUAL REPORT.—Under the agree-
21 ment under paragraph (1), the Academy shall sub-
22 mit to the Secretary a report on its evaluation of
23 science park development under that paragraph.
24 Each report may include such recommendations as
25 the Academy considers appropriate for additional ac-

1 tivities to promote and facilitate the development of
2 science parks in the United States.

3 “(e) TRI-ANNUAL REPORT.—Not later than March
4 31 of every third year, the Secretary shall submit to Con-
5 gress a report on the activities under this section during
6 the preceding 3 years, including any recommendations
7 made by the National Academy of Sciences under sub-
8 section (d)(2) during such period. Each report may in-
9 clude such recommendations for legislative or administra-
10 tive action as the Secretary considers appropriate to fur-
11 ther promote and facilitate the development of science
12 parks in the United States.

13 “(f) REGULATIONS.—

14 “(1) REGULATIONS.—Consistent with Office of
15 Management and Budget Circular A–129, ‘Policies
16 for Federal Credit Programs and Non-Tax Receiv-
17 ables’, the Secretary shall prescribe regulations to
18 carry out this section.

19 “(2) DEADLINE.—The Secretary shall prescribe
20 such regulations not later than one year after the
21 date of enactment of this section.”.

1 **Subtitle E—Authorization of Ap-**
2 **propriations for the National**
3 **Science Foundation for Re-**
4 **search and Related Activities**

5 **SEC. 251. AUTHORIZATION OF APPROPRIATIONS FOR THE**
6 **NATIONAL SCIENCE FOUNDATION FOR RE-**
7 **SEARCH AND RELATED ACTIVITIES.**

8 (a) IN GENERAL.—There is hereby authorized to be
9 appropriated for the National Science Foundation for Re-
10 search and Related Activities, amounts as follows:

- 11 (1) \$4,195,000,000 for fiscal year 2007.
12 (2) \$4,614,000,000 for fiscal year 2008.
13 (3) \$5,076,000,000 for fiscal year 2009
14 (4) \$5,584,000,000 for fiscal year 2010.
15 (5) \$6,143,000,000 for fiscal year 2011.
16 (6) \$6,757,000,000 for fiscal year 2012.
17 (7) \$7,432,000,000 for fiscal year 2013.

18 (b) LIMITATION ON AVAILABILITY.—Amounts au-
19 thorized to be appropriated for the National Science Foun-
20 dation by subsection (a) shall not be available for the
21 United States Solar Program and Integrative Activities of
22 the Foundation.

1 **TITLE III—ENSURING THE BEST**
2 **AND BRIGHTEST REMAIN IN**
3 **THE UNITED STATES**

4 **Subtitle A—Visas for Doctorate**
5 **Students in Mathematics, Engi-**
6 **neering, Technology, or the**
7 **Physical Sciences**

8 **SEC. 311. FINDINGS.**

9 Congress finds the following:

10 (1) The National Academies, in their congres-
11 sionally requested report entitled “Rising Above the
12 Gathering Storm: Energizing and Employing Amer-
13 ica for a Brighter Economic Future”, recommended
14 that Congress—

15 (A) continue to improve visa processing for
16 international students and scholars by providing
17 less complex procedures and continuing to make
18 improvements on issues such as visa categories
19 and duration, travel for scientific meetings, the
20 technology-alert list, reciprocity agreements,
21 and changes in status;

22 (B) provide a 1-year automatic visa exten-
23 sion to international students who receive doc-
24 torates or the equivalent in science, technology,
25 engineering, mathematics, or other fields of na-

1 tional need at qualified United States institu-
2 tions to remain in the United States to seek
3 employment;

4 (C) provide such students with automatic
5 work permits and expedited residence status if
6 they are offered jobs by employers based in the
7 United States and pass a security screening
8 test;

9 (D) institute a new skills-based, pref-
10 erential immigration option that gives appli-
11 cants with doctorate-level education and science
12 and engineering skills priority in obtaining
13 United States citizenship; and

14 (E) increase the number of H–1B visas by
15 10,000, which should be allocated for applicants
16 with doctorate degrees in science, or engineer-
17 ing from a United States university; and

18 (2) Since the publication of the report by the
19 National Academies, the Senate has passed the Def-
20 icit Reduction Act of 2005, which authorizes an ad-
21 ditional 30,000 H–1B visas per year.

22 **SEC. 312. SENSE OF THE SENATE.**

23 It is the sense of the Senate that—

24 (1) the Department of State and the Depart-
25 ment of Homeland Security have made significant

1 improvements since 2002 in the efficiency with
2 which visas are processed for—

3 (A) students at colleges and universities in
4 the United States; and

5 (B) foreign researchers to engage in appro-
6 priate scientific research in the United States;

7 (2) particular improvements have been made to
8 the MANTIS clearance process, which—

9 (A) reduce wait times from more than 70
10 days to less than 15 days; and

11 (B) extend the duration of the MANTIS
12 clearance process up to 4 years, as appropriate,
13 to cover the duration of study for foreign stu-
14 dents in the United States;

15 (3) both departments and related supporting
16 agencies should further improve efficiency and con-
17 venience in the granting of visas to foreign students
18 and researchers while protecting national security;

19 (4) the departments should extend MANTIS
20 clearance for foreign researchers for the duration of
21 a specified scientific research program while bal-
22 ancing security concerns; and

23 (5) other such improvements should include—

24 (A) review of the technology-alert list; and

1 (B) efforts to better facilitate travel for
2 scientific conferences.

3 **SEC. 313. VISAS FOR DOCTORATE STUDENTS IN MATHE-**
4 **MATICS, ENGINEERING, TECHNOLOGY, OR**
5 **THE PHYSICAL SCIENCES.**

6 (a) CREATION OF NEW VISA CATEGORY.—Section
7 101(a)(15)(F) of the Immigration and Nationality Act (8
8 U.S.C. 1101(a)(15)(F)) is amended—

9 (1) in clause (i)—

10 (A) by inserting “(except for a graduate
11 program described in clause (iv))” after “full
12 course of study”;

13 (B) by striking “214(l)” and inserting
14 “214(m)”; and

15 (C) by striking the comma at the end and
16 inserting a semicolon;

17 (2) in clause (ii)—

18 (A) by inserting “or clause (iv)” after
19 “clause (i)”; and

20 (B) by striking “, and” and inserting a
21 semicolon;

22 (3) in clause (iii), by inserting “and” at the
23 end; and

24 (4) by adding at the end the following:

1 “(iv) an alien described in clause (i) who
2 has been accepted and plans to attend an ac-
3 credited graduate program in mathematics, en-
4 gineering, technology, or the physical sciences
5 in the United States for the purpose of obtain-
6 ing a doctorate degree;”.

7 (b) REQUIREMENTS FOR OBTAINING AN F-4 VISA.—
8 Section 214(m) of the Immigration and Nationality Act
9 (8 U.S.C. 1184(m)) is amended—

10 (1) by striking the matter preceding paragraph
11 (1) and inserting the following:

12 “(m) NONIMMIGRANT ELEMENTARY, SECONDARY,
13 AND POST-SECONDARY SCHOOL STUDENTS.—”; and

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

15 “(3)(A) An alien who obtains the status of a non-
16 immigrant under section 101(a)(15)(F)(iv) shall dem-
17 onstrate an intent to—

18 “(i) return to the country of residence of such
19 alien immediately after the completion or termi-
20 nation of the graduate program qualifying such alien
21 for such status; or

22 “(ii) find employment in the United States re-
23 lated to the field of study of such alien and become
24 a permanent resident of the United States upon the

1 completion of the graduate program, which was the
2 basis for such nonimmigrant status.

3 “(B) A visa issued to an alien under section
4 101(a)(15)(F)(iv) shall be valid—

5 “(i) during the intended period of study in a
6 graduate program described in such section;

7 “(ii) for an additional period, not to exceed 1
8 year beyond the completion of the graduate pro-
9 gram, if the alien is actively pursuing an offer of
10 employment related to the knowledge and skills ob-
11 tained through the graduate program; and

12 “(iii) for an additional period, not to exceed 6
13 months, while the alien’s application for adjustment
14 of status under section 245(i)(4) is pending.

15 “(C) An alien shall qualify for adjustment of status
16 to that of a person admitted for permanent residence if
17 the alien—

18 “(i) has the status of a nonimmigrant under
19 section 101(a)(15)(F)(iv);

20 “(ii) has successfully earned a doctorate degree
21 in mathematics, engineering, technology or the phys-
22 ical sciences at an accredited college or university in
23 the United States; and

1 “(iii) is employed full-time in the United States
2 in a position related to the knowledge and skills
3 gained while pursuing such degree.”.

4 (c) ADJUSTMENT OF STATUS.—Section 245(i) of the
5 Immigration and Nationality Act (8 U.S.C. 1255(i)) is
6 amended by adding at the end the following:

7 “(4) The Secretary of Homeland Security may adjust
8 the status of an alien who meets the requirements under
9 section 214(m)(3) to that of an alien lawfully admitted
10 for permanent residence if the alien—

11 “(A) makes an application for such adjustment;

12 “(B) is eligible to receive an immigrant visa;

13 “(C) is admissible to the United States for per-
14 manent residence; and

15 “(D) remits a fee of \$1,000 to the Secretary.”.

16 (d) USE OF FEES.—

17 (1) JOB TRAINING; SCHOLARSHIPS.—Section
18 286(s)(1) of the Immigration and Nationality Act (8
19 U.S.C. 1356(s)(1)) is amended by inserting “and 80
20 percent of the fees collected under section 245(i)(4)”
21 before the period at the end.

22 (2) FRAUD PREVENTION AND DETECTION.—
23 Section 286(v)(1) of the Immigration and Nation-
24 ality Act (8 U.S.C. 1356(v)(1)) is amended by in-

1 serting “and 20 percent of the fees collected under
2 section 245(i)(4)” before the period at the end.

3 **SEC. 314. ALIENS NOT SUBJECT TO NUMERICAL LIMITA-**
4 **TIONS ON EMPLOYMENT-BASED IMMI-**
5 **GRANTS.**

6 (a) IN GENERAL.—Section 201(b)(1) of the Immi-
7 gration and Nationality Act (8 U.S.C. 1151(b)(1)) is
8 amended by adding at the end the following:

9 “(F) Aliens who have earned an advanced
10 degree in science, technology, engineering, or
11 math and have been working in a related field
12 in the United States under a nonimmigrant visa
13 during the 3-year period preceding their appli-
14 cation for an immigrant visa under section
15 203(b).

16 “(G) Aliens described in subparagraph (A)
17 or (B) of section 203(b)(1)(A) or who have re-
18 ceived a national interest waiver under section
19 203(b)(2)(B).

20 “(H) The immediate relatives of an alien
21 who is admitted as an employment-based immi-
22 grant under section 203(b).”.

23 (b) APPLICABILITY.—The amendments made by sub-
24 section (a) shall apply to any visa application pending on

1 the date of enactment of this Act and any visa application
2 filed on or after such date of enactment.

3 **Subtitle B—Patent Reform**

4 **SEC. 321. PATENT REFORM.**

5 It is the sense of the Senate that—

6 (1) the United States Patent and Trademark
7 Office should be provided with sufficient resources to
8 make intellectual property protection more timely,
9 predictable, and effective;

10 (2) the resources described under paragraph (1)
11 should include a 20 percent increase in overall fund-
12 ing to hire and train additional examiners and im-
13 plement more capable electronic processing; and

14 (3) Congress should implement comprehensive
15 patent reform that—

16 (A) establishes a first-inventor-to-file sys-
17 tem;

18 (B) institutes an open review process fol-
19 lowing the grant of a patent;

20 (C) encourages research uses of patented
21 inventions by shielding researchers from in-
22 fringement liability; and

23 (D) reduces barriers to innovation in spe-
24 cific industries with specialized patent needs.

1 **TITLE IV—REFORMING DEEMED**
2 **EXPORTS**

3 **SEC. 401. SENSE OF SENATE ON EXEMPTION OF CERTAIN**
4 **USES OF TECHNOLOGY FROM TREATMENT AS**
5 **EXPORTS.**

6 (a) SENSE OF SENATE.—It is the sense of the Senate
7 that the use of technology by an institution of higher edu-
8 cation in the United States should not be treated as an
9 export of such technology for purposes of section 5 of the
10 Export Administration Act of 1979 (50 U.S.C. App. 2404)
11 and any regulations prescribed thereunder, as currently in
12 effect pursuant to the provisions of the International
13 Emergency Economic Powers Act (50 U.S.C. 1701 et
14 seq.), or any other provision of law, if such technology is
15 so used by such institution for fundamental research.

16 (b) DEFINITIONS.—In this section:

17 (1) FUNDAMENTAL RESEARCH.—The term
18 “fundamental research” has the meaning given that
19 term in National Security Decision Directive 189,
20 entitled “National Policy on Transfer of Scientific,
21 Technical, and Engineering Information” and dated
22 September 21, 1985.

23 (2) INSTITUTION OF HIGHER EDUCATION.—The
24 term “institution of higher education” has the

- 1 meaning given that term in section 101(a) of the
- 2 Higher Education Act of 1965 (20 U.S.C. 1001(a).

1 **TITLE** **V—STRENGTHENING**
2 **BASIC RESEARCH AT THE DE-**
3 **PARTMENT OF DEFENSE**

4 **SEC. 501. DEPARTMENT OF DEFENSE EARLY-CAREER RE-**
5 **SEARCH GRANTS.**

6 (a) PURPOSE.—It is the purpose of this section to
7 authorize research grants in the Department of Defense
8 for early-career scientists and engineers for purposes of
9 pursuing independent research.

10 (b) DEFINITION OF ELIGIBLE EARLY-CAREER RE-
11 SEARCHER.—In this section, the term “eligible early-ca-
12 reer researcher” means an individual who—

13 (1) completed a doctorate or other terminal de-
14 gree not more than 10 years before the date of en-
15 actment of this Act and has demonstrated promise
16 in the field of science, technology, engineering, or
17 mathematics; or

18 (2) has an equivalent professional qualification
19 in the field of science, technology, engineering, or
20 mathematics.

21 (c) GRANT PROGRAM AUTHORIZED.—

22 (1) IN GENERAL.—The Secretary of Defense
23 shall award not less than 25 grants per year to out-
24 standing eligible early-career researchers to support
25 the work of such researchers in universities, private

1 industry, or federally-funded research and develop-
2 ment centers.

3 (2) APPLICATION.—An eligible early-career re-
4 searcher who desires to receive a grant under this
5 section shall submit to the Secretary of Defense an
6 application at such time, in such manner, and ac-
7 companied by such information as the Secretary may
8 require.

9 (3) SPECIAL CONSIDERATION.—In awarding
10 grants under this section, the Secretary of Defense
11 shall give special consideration to eligible early-ca-
12 reer researchers who have followed alternative career
13 paths such as working part-time or in non-academic
14 settings, or who have taken a significant career
15 break or other leave of absence.

16 (4) DURATION AND AMOUNT.—A grant under
17 this section shall be 5 years in duration. An eligible
18 early career-researcher who receives a grant under
19 this section shall receive \$100,000 for each year of
20 the grant period.

21 (5) USE OF FUNDS.—An eligible early career-
22 researcher who receives a grant under this section
23 shall use the grant funds for basic research in nat-
24 ural sciences, engineering, mathematics, or computer

1 sciences at a university, private industry, or feder-
2 ally-funded research and development center.

3 (6) AUTHORIZATION OF APPROPRIATIONS.—

4 There are authorized to be appropriated to carry out
5 this section—

6 (A) \$2,500,000 for fiscal year 2007;

7 (B) \$5,000,000 for fiscal year 2008;

8 (C) \$7,500,000 for fiscal year 2009;

9 (D) \$10,000,000 for fiscal year 2010; and

10 (E) \$12,500,000 for fiscal year 2011.

11 **SEC. 502. AUTHORIZATION OF APPROPRIATIONS FOR THE**
12 **DEPARTMENT OF DEFENSE FOR BASIC RE-**
13 **SEARCH.**

14 There is hereby authorized to be appropriated for the
15 Department of Defense for basic (6.1) research, amounts
16 for the research, development, test, and evaluation ac-
17 counts of the Department, and for other accounts of the
18 Department providing funding for such research, in the
19 aggregate as follows:

20 (1) \$1,616,000,000 for fiscal year 2007.

21 (2) \$1,778,000,000 for fiscal year 2008.

22 (3) \$1,995,000,000 for fiscal year 2009.

23 (4) \$2,151,000,000 for fiscal year 2010.

24 (5) \$2,364,000,000 for fiscal year 2011.

25 (6) \$2,602,000,000 for fiscal year 2012.

1 (7) \$2,862,000,000 for fiscal year 2013.