

110TH CONGRESS
1ST SESSION

S. 761

AN ACT

To invest in innovation and education to improve the competitiveness of the United States in the 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 This Act may be cited as the “America COMPETES
5 Act” or the “America Creating Opportunities to Meaning-
6 fully Promote Excellence in Technology, Education, and
7 Science Act”.

1 **SEC. 2. ORGANIZATION OF ACT INTO DIVISIONS; TABLE OF**
 2 **CONTENTS.**

3 (a) DIVISIONS.—This Act is organized into 5 divi-
 4 sions as follows:

- 5 (1) DIVISION A.—Commerce and Science.
 6 (2) DIVISION B.—Department of Energy.
 7 (3) DIVISION B.—Education.
 8 (4) DIVISION D.—National Science Foundation.
 9 (5) DIVISION E.—General Provisions.

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

Sec. 1. Short title.

Sec. 2. Organization of Act into divisions; table of contents.

DIVISION A—COMMERCE AND SCIENCE

Sec. 1001. Short title.

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

Sec. 1101. National Science and Technology Summit.

Sec. 1102. Study on barriers to innovation.

Sec. 1103. National Innovation Medal.

Sec. 1104. Release of scientific research results.

Sec. 1105. Semiannual Science, Technology, Engineering, and Mathematics
 Days.

Sec. 1106. Study of service science.

TITLE II—INNOVATION PROMOTION

Sec. 1201. President's Council on Innovation and Competitiveness.

Sec. 1202. Innovation acceleration research.

TITLE III—NATIONAL AERONAUTICS AND SPACE
 ADMINISTRATION

Sec. 1301. NASA's contribution to innovation.

Sec. 1302. Aeronautics Institute for Research.

Sec. 1303. Basic research enhancement.

Sec. 1304. Aging workforce issues program.

Sec. 1305. Conforming amendments.

Sec. 1306. Fiscal year 2008 basic science and research funding.

TITLE IV—NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY

- Sec. 1401. Authorization of appropriations.
- Sec. 1402. Amendments to the Stevenson-Wydler Technology Innovation Act of 1980.
- Sec. 1403. Innovation acceleration.
- Sec. 1404. Manufacturing extension.
- Sec. 1405. Experimental Program to Stimulate Competitive Technology.
- Sec. 1406. Technical amendments to the National Institute of Standards and Technology Act and other technical amendments.
- Sec. 1407. Clarification of eligible contributions in connection with regional Centers responsible for implementing the objectives of the holings manufacturing partnership program.

TITLE V—OCEAN AND ATMOSPHERIC PROGRAMS

- Sec. 1501. Ocean and atmospheric research and development program.
- Sec. 1502. NOAA ocean and atmospheric science education programs.
- Sec. 1503. NOAA's contribution to innovation.
- Sec. 1504. NOAA accountability and transparency.

DIVISION B—DEPARTMENT OF ENERGY

- Sec. 2001. Short title.
- Sec. 2002. Definitions.
- Sec. 2003. Mathematics, science, and engineering education at the Department of Energy.
- Sec. 2004. Department of Energy early-career research grants.
- Sec. 2005. Advanced Research Projects Authority-Energy.
- Sec. 2006. Authorization of appropriations for the Department of Energy for basic research.
- Sec. 2007. Discovery science and engineering innovation institutes.
- Sec. 2008. Protecting America's Competitive Edge (PACE) graduate fellowship program.
- Sec. 2009. Title IX compliance.
- Sec. 2010. High-risk, high-reward research.
- Sec. 2011. Distinguished scientist program.

DIVISION C—EDUCATION

- Sec. 3001. Findings.
- Sec. 3002. Definitions.

TITLE I—TEACHER ASSISTANCE

Subtitle A—Teachers for a Competitive Tomorrow

- Sec. 3111. Purpose.
- Sec. 3112. Definitions.
- Sec. 3113. Programs for baccalaureate degrees in mathematics, science, engineering, or critical foreign languages, with concurrent teacher certification.
- Sec. 3114. Programs for master's degrees in mathematics, science, technology, or critical foreign languages education.
- Sec. 3115. General provisions.
- Sec. 3116. Authorization of appropriations.

Subtitle B—Advanced Placement and International Baccalaureate Programs

Sec. 3121. Purpose.

Sec. 3122. Definitions.

Sec. 3123. Advanced Placement and International Baccalaureate programs.

Subtitle C—Promising Practices in Mathematics, Science, Technology, and Engineering Teaching

Sec. 3131. Promising practices.

TITLE II—MATHEMATICS

Sec. 3201. Math Now for elementary school and middle school students program.

Sec. 3202. Summer term education programs.

Sec. 3203. Math skills for secondary school students.

TITLE III—FOREIGN LANGUAGE PARTNERSHIP PROGRAM

Sec. 3301. Findings and purpose.

Sec. 3302. Definitions.

Sec. 3303. Program authorized.

Sec. 3304. Authorization of appropriations.

TITLE IV—ALIGNMENT OF EDUCATION PROGRAMS

Sec. 3401. Alignment of secondary school graduation requirements with the demands of 21st century postsecondary endeavors and support for P-16 education data systems.

TITLE V—MATHEMATICS AND SCIENCE PARTNERSHIP BONUS GRANTS

Sec. 3501. Mathematics and science partnership bonus grants.

Sec. 3502. Authorization of appropriations.

DIVISION D—NATIONAL SCIENCE FOUNDATION

Sec. 4001. Authorization of appropriations.

Sec. 4002. Strengthening of education and human resources directorate through equitable distribution of new funds.

Sec. 4003. Graduate fellowships and graduate traineeships.

Sec. 4004. Professional science master's degree programs.

Sec. 4005. Increased support for science education through the National Science Foundation.

Sec. 4006. Meeting critical national science needs.

Sec. 4007. Reaffirmation of the merit-review process of the National Science Foundation.

Sec. 4008. Experimental Program to Stimulate Competitive Research.

Sec. 4009. Encouraging participation.

Sec. 4010. Cyberinfrastructure.

Sec. 4011. Federal information and communications technology research.

Sec. 4012. Robert Noyce Teacher Program.

Sec. 4013. Sense of the Senate regarding the mathematics and science partnership programs of the Department of Education and the National Science Foundation.

Sec. 4014. National Science Foundation teacher institutes for the 21st century.

Sec. 4015. Partnerships for access to laboratory science.

DIVISION E—GENERAL PROVISIONS

Sec. 5001. Collection of data relating to trade in services.

Sec. 5002. Sense of the Senate regarding small business growth and capital markets.

Sec. 5003. Government Accountability Office Review of Activities, Grants, and Programs.

Sec. 5004. Prohibition against funding anti-competitiveness.

Sec. 5005. Feasibility study on free online college degree program.

Sec. 5006. Sense of the Senate regarding deemed exports.

Sec. 5007. Sense of the Senate regarding capital markets.

DIVISION A—COMMERCE AND SCIENCE

SEC. 1001. SHORT TITLE.

This division may be cited as the “American Innovation and Competitiveness Act”.

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

SEC. 1101. NATIONAL SCIENCE AND TECHNOLOGY SUMMIT.

(a) IN GENERAL.—Not later than 180 days after the date of enactment of this Act, the President shall convene a National Science and Technology Summit to examine the health and direction of the United States’ science, technology, engineering, and mathematics enterprises. The Summit shall include representatives of industry, small business, labor, academia, State government, Federal research and development agencies, non-profit environmental and energy policy groups concerned with science and technology issues, and other nongovernmental organi-

**“CHAPTER 5—NUCLEAR SCIENCE
EDUCATION**

**“SEC. 3191. NUCLEAR SCIENCE TALENT EXPANSION PRO-
GRAM FOR INSTITUTIONS OF HIGHER EDU-
CATION.**

“(a) PURPOSES.—The purposes of this section are—

“(1) to address the decline in the number of
and resources available to nuclear science programs
of institutions of higher education; and

“(2) to increase the number of graduates with
degrees in nuclear science, an area of strategic im-
portance to the economic competitiveness and energy
security of the United States.

“(b) DEFINITION OF NUCLEAR SCIENCE.—In this
section, the term ‘nuclear science’ includes—

“(1) nuclear science;

“(2) nuclear engineering;

“(3) nuclear chemistry;

“(4) radio chemistry; and

“(5) health physics.

“(c) ESTABLISHMENT.—The Secretary, acting
through the Director, shall establish in accordance with
this section a program to expand and enhance institution
of higher education nuclear science educational capabili-
ties.

1 “(d) NUCLEAR SCIENCE PROGRAM EXPANSION
2 GRANTS FOR INSTITUTIONS OF HIGHER EDUCATION.—

3 “(1) IN GENERAL.—The Secretary, acting
4 through the Director, shall award up to 3 competi-
5 tive grants for each fiscal year to institutions of
6 higher education that establish new academic degree
7 programs in nuclear science.

8 “(2) ELIGIBILITY.—To be eligible for a grant
9 under this subsection, an applicant shall partner
10 with a National Laboratory or other eligible nuclear-
11 related entity, as determined by the Secretary.

12 “(3) CRITERIA.—Criteria for a grant awarded
13 under this subsection shall be based on—

14 “(A) the potential to attract new students
15 to the program;

16 “(B) academic rigor; and

17 “(C) the ability to offer hands-on learning
18 opportunities.

19 “(4) DURATION AND AMOUNT.—

20 “(A) DURATION.—A grant under this sub-
21 section shall be 5 years in duration.

22 “(B) AMOUNT.—An institution of higher
23 education that receives a grant under this sub-
24 section shall be eligible for up to \$1,000,000 for
25 each year of the grant period.

1 “(5) USE OF FUNDS.—An institution of higher
2 education that receives a grant under this subsection
3 may use the grant to—

4 “(A) recruit and retain new faculty;

5 “(B) develop core and specialized course
6 content;

7 “(C) encourage collaboration between fac-
8 ulty and researchers in the nuclear science field;
9 or

10 “(D) support outreach efforts to recruit
11 students.

12 “(e) NUCLEAR SCIENCE COMPETITIVENESS GRANTS
13 FOR INSTITUTIONS OF HIGHER EDUCATION.—

14 “(1) IN GENERAL.—The Secretary, acting
15 through the Director shall award up to 10 competi-
16 tive grants for each fiscal year to institutions of
17 higher education with existing academic degree pro-
18 grams that produce graduates in nuclear science.

19 “(2) CRITERIA.—Criteria for a grant awarded
20 under this subsection shall be based on the potential
21 for increasing the number and academic quality of
22 graduates in the nuclear sciences who enter into ca-
23 reers in nuclear-related fields.

24 “(3) DURATION AND AMOUNT.—

1 “(A) DURATION.—A grant under this sub-
2 section shall be 5 years in duration.

3 “(B) AMOUNT.—An institution of higher
4 education that receives a grant under this sub-
5 section shall be eligible for up to \$500,000 for
6 each year of the grant period.

7 “(4) USE OF FUNDS.—An institution of higher
8 education that receives a grant under this subsection
9 may use the grant to—

10 “(A) increase the number of graduates in
11 nuclear science that enter into careers in the
12 nuclear science field;

13 “(B) enhance the teaching of advanced nu-
14 clear technologies;

15 “(C) aggressively pursue collaboration op-
16 portunities with industry and National Labora-
17 tories;

18 “(D) bolster or sustain nuclear infrastruc-
19 ture and research facilities of the institution of
20 higher education, such as research and training
21 reactors or laboratories; and

22 “(E) provide tuition assistance and sti-
23 pends to undergraduate and graduate students.

24 “(f) AUTHORIZATION OF APPROPRIATIONS.—

1 “(1) NUCLEAR SCIENCE PROGRAM EXPANSION
 2 GRANTS FOR INSTITUTIONS OF HIGHER EDU-
 3 CATION.—There are authorized to be appropriated
 4 to carry out subsection (d)—

5 “(A) \$9,000,000 for fiscal year 2008;

6 “(B) \$13,000,000 for fiscal year 2009;

7 “(C) \$18,000,000 for fiscal year 2010; and

8 “(D) \$22,500,000 for fiscal year 2011.

9 “(2) NUCLEAR SCIENCE COMPETITIVENESS
 10 GRANTS FOR INSTITUTIONS OF HIGHER EDU-
 11 CATION.—There are authorized to be appropriated
 12 to carry out subsection (e)—

13 “(A) \$11,000,000 for fiscal year 2008;

14 “(B) \$16,500,000 for fiscal year 2009;

15 “(C) \$22,000,000 for fiscal year 2010; and

16 “(D) \$27,500,000 for fiscal year 2011.

17 **“CHAPTER 6—ADMINISTRATION**

18 **“SEC. 3195. MENTORING PROGRAM.**

19 “(a) IN GENERAL.—As part of the programs estab-
 20 lished under chapters 1, 3, and 4, the Director shall estab-
 21 lish a program to recruit and provide mentors for women
 22 and underrepresented minorities who are interested in ca-
 23 reers in mathematics, science, and engineering. The pro-
 24 gram shall pair mentors with women and minorities who
 25 are in programs of study at specialty schools for mathe-

1 which the Academy shall, not later than 3 and 6 years
 2 after the date of enactment of this Act—

3 (1) review the performance of the Institutes
 4 under this section; and

5 (2) submit to Congress and the Secretary a re-
 6 port describing the results of the review.

7 (g) AUTHORIZATION OF APPROPRIATIONS.—There is
 8 authorized to be appropriated to carry out the activities
 9 of each Institute selected under this section \$10,000,000
 10 for each of fiscal years 2008 through 2011.

11 **SEC. 2008. PROTECTING AMERICA'S COMPETITIVE EDGE**

12 **(PACE) GRADUATE FELLOWSHIP PROGRAM.**

13 (a) DEFINITION OF ELIGIBLE STUDENT.—In this
 14 section, the term “eligible student” means a student who
 15 attends an institution of higher education that offers a
 16 doctoral degree in a field relevant to a mission area of
 17 the Department.

18 (b) ESTABLISHMENT.—The Secretary shall establish
 19 a graduate fellowship program for eligible students pur-
 20 suing a doctoral degree in a mission area of the Depart-
 21 ment.

22 (c) SELECTION.—

23 (1) IN GENERAL.—The Secretary shall award
 24 fellowships to eligible students under this section
 25 through a competitive merit review process (involv-

1 ing written and oral interviews) that will result in a
2 wide distribution of awards throughout the United
3 States.

4 (2) CRITERIA.—The Secretary shall establish
5 selection criteria for awarding fellowships under this
6 section that require an eligible student to—

7 (A) pursue a field of science or engineering
8 of importance to the mission area of the De-
9 partment;

10 (B) rank in the upper 10 percent of the
11 class of the eligible student;

12 (C) demonstrate to the Secretary—

13 (i) the capacity to understand tech-
14 nical topics related to the fellowship that
15 can be derived from the first principles of
16 the technical topics;

17 (ii) imagination and creativity;

18 (iii) leadership skills in organizations
19 or intellectual endeavors, demonstrated
20 through awards and past experience; and

21 (iv) excellent verbal and communica-
22 tion skills to explain, defend, and dem-
23 onstrate an understanding of technical
24 subjects related to the fellowship; and

1 (D) be a citizen or legal permanent resi-
2 dent of the United States.

3 (d) AWARDS.—

4 (1) AMOUNT.—A fellowship awarded under this
5 section shall—

6 (A) provide an annual living stipend; and

7 (B) cover—

8 (i) graduate tuition at an institution
9 of higher education; and

10 (ii) incidental expenses associated
11 with curricula and research at the institu-
12 tion of higher education (including books,
13 computers and software).

14 (2) DURATION.—A fellowship awarded under
15 this section shall be for a period of not greater than
16 5 years.

17 (3) PORTABILITY.—A fellowship awarded under
18 this section shall be portable with the fellow.

19 (e) ADMINISTRATION.—The Secretary (acting
20 through the Director of Mathematics, Science, and Engi-
21 neering Education)—

22 (1) shall administer the program established
23 under this section; and,

1 (2) may enter into a contract with a nonprofit
 2 entity to administer the program, including the se-
 3 lection and award of fellowships.

4 (f) AUTHORIZATION OF APPROPRIATIONS.—

5 (1) FELLOWSHIPS.—There are authorized to be
 6 appropriated to award fellowships under this
 7 section—

8 (A) \$9,300,000 for 200 fellowships for fis-
 9 cal year 2008;

10 (B) \$14,500,000 for 300 fellowships for
 11 fiscal year 2009 (including non-expiring fellow-
 12 ships for prior fiscal years);

13 (C) \$25,000,000 for 500 fellowships for
 14 fiscal year 2010 (including non-expiring fellow-
 15 ships for prior fiscal years); and

16 (D) \$35,500,000 for 700 fellowships for
 17 fiscal year 2011 (including non-expiring fellow-
 18 ships for prior fiscal years).

19 (2) ADMINISTRATION.—There are authorized to
 20 be appropriated for administrative expenses incurred
 21 in carrying out this section—

22 (A) \$1,000,000 for fiscal year 2008;

23 (B) \$1,500,000 for fiscal year 2009;

24 (C) \$2,500,000 for fiscal year 2010; and

25 (D) \$3,500,000 for fiscal year 2011.