

Calendar No. 648

109TH CONGRESS
2D SESSION

S. 3936

To invest in innovation and education to improve the competitiveness of the United States in the global economy.

IN THE SENATE OF THE UNITED STATES

SEPTEMBER 26, 2006

Mr. FRIST (for himself, Mr. REID, Mr. DOMENICI, Mr. BINGAMAN, Mr. STEVENS, Mr. INOUE, Mr. ENZI, Mr. KENNEDY, Mr. ENSIGN, Mr. LIEBERMAN, Mr. ALEXANDER, Ms. MIKULSKI, Mrs. HUTCHISON, Mr. NELSON of Florida, Mr. BURNS, Mrs. CLINTON, Mr. ALLEN, Ms. CANTWELL, Mr. CORNYN, Mr. KERRY, Mr. TALENT, Mr. SALAZAR, Mr. CRAIG, Ms. LANDRIEU, Mr. ISAKSON, Mr. MENENDEZ, Mr. SMITH, Mr. KOHL, Mr. VOINOVICH, Mr. ROBERTS, Mr. COLEMAN, Mr. JOHNSON, Mr. LUGAR, and Mr. ROCKEFELLER) introduced the following bill; which was read the first time

SEPTEMBER 27, 2006

Read the second time and placed on the calendar

A BILL

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,*

1 **SECTION 1. SHORT TITLE.**

2 This Act may be cited as the “National Competitive-
3 ness Investment Act”.

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

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

8 (1) DIVISION A.—Commerce and Science.

9 (2) DIVISION B.—Department of Energy.

10 (3) DIVISION C.—Education.

11 (4) DIVISION D.—National Science Foundation.

12 (b) TABLE OF CONTENTS.—The table of contents for
13 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 2007 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.

TITLE V—OCEAN AND ATMOSPHERIC PROGRAMS

- Sec. 1501. Ocean and atmospheric research and development program.
- Sec. 1502. NOAA ocean and atmospheric science education programs.

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, 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.

TITLE II—MATH NOW

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

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.

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 Scholarship 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.

1 **DIVISION A—COMMERCE AND** 2 **SCIENCE**

3 **SEC. 1001. SHORT TITLE.**

4 This division may be cited as the “American Innova-
5 tion and Competitiveness Act of 2006”.

1 “(h) AUTHORIZATION OF APPROPRIATIONS.—There
 2 are authorized to be appropriated to carry out this sec-
 3 tion—

4 “(1) \$15,000,000 for fiscal year 2007;

5 “(2) \$25,000,000 for fiscal year 2008;

6 “(3) \$40,000,000 for fiscal year 2009;

7 “(4) \$50,000,000 for fiscal year 2010; and

8 “(5) \$75,000,000 for fiscal year 2011.

9 **“CHAPTER 5—NUCLEAR SCIENCE**
 10 **EDUCATION**

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

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

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

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

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

24 “(1) nuclear science;

25 “(2) nuclear engineering;

1 “(3) nuclear chemistry;

2 “(4) radio chemistry; and

3 “(5) health physics.

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

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

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

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

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

22 “(A) the potential to attract new students
23 to the program;

24 “(B) academic rigor; and

1 “(C) the ability to offer hands-on learning
2 opportunities.

3 “(4) DURATION AND AMOUNT.—

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

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

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

13 “(A) recruit and retain new faculty;

14 “(B) develop core and specialized course
15 content;

16 “(C) encourage collaboration between fac-
17 ulty and researchers in the nuclear science field;
18 or

19 “(D) support outreach efforts to recruit
20 students.

21 “(e) NUCLEAR SCIENCE COMPETITIVENESS GRANTS
22 FOR INSTITUTIONS OF HIGHER EDUCATION.—

23 “(1) IN GENERAL.—The Secretary, acting
24 through the Director shall award up to 10 competi-
25 tive grants for each fiscal year to institutions of

1 higher education with existing academic degree pro-
2 grams that produce graduates in nuclear science.

3 “(2) CRITERIA.—Criteria for a grant awarded
4 under this subsection shall be based on the potential
5 for increasing the number and academic quality of
6 graduates in the nuclear sciences who enter into ca-
7 reers in nuclear-related fields.

8 “(3) DURATION AND AMOUNT.—

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

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

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

18 “(A) increase the number of graduates in
19 nuclear science that enter into careers in the
20 nuclear science field;

21 “(B) enhance the teaching of advanced nu-
22 clear technologies;

23 “(C) aggressively pursue collaboration op-
24 portunities with industry and National Labora-
25 tories;

1 “(D) bolster or sustain nuclear infrastruc-
 2 ture and research facilities of the institution of
 3 higher education, such as research and training
 4 reactors or laboratories; and

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

7 “(f) AUTHORIZATION OF APPROPRIATIONS.—

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

12 “(A) \$3,000,000 for fiscal year 2007;

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

14 “(C) \$13,000,000 for fiscal year 2009;

15 “(D) \$18,000,000 for fiscal year 2010;

16 and

17 “(E) \$22,500,000 for fiscal year 2011.

18 “(2) NUCLEAR SCIENCE COMPETITIVENESS
 19 GRANTS FOR INSTITUTIONS OF HIGHER EDU-
 20 CATION.—There are authorized to be appropriated
 21 to carry out subsection (e)—

22 “(A) \$5,000,000 for fiscal year 2007;

23 “(B) \$11,000,000 for fiscal year 2008;

24 “(C) \$16,500,000 for fiscal year 2009;

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

2 and

3 “(E) \$27,500,000 for fiscal year 2011.”.

4 **SEC. 2004. DEPARTMENT OF ENERGY EARLY-CAREER RE-**
5 **SEARCH GRANTS.**

6 (a) PURPOSE.—It is the purpose of this section to
7 authorize research grants in the Department for early-ca-
8 reer scientists and engineers for purposes of pursuing
9 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 ap-
15 plication for a grant authorized under this section,
16 except as provided in subsection (c)(3); and

17 (2) has demonstrated promise in the field of
18 science, technology, engineering, mathematics, com-
19 puter science, or computational science.

20 (c) GRANT PROGRAM AUTHORIZED.—

21 (1) IN GENERAL.—The Secretary shall award
22 not less than 65 grants per year to outstanding eli-
23 gible early-career researchers to support the work of
24 such researchers in the Department, particularly at