

110TH CONGRESS
1ST SESSION

H. R. 363

To authorize appropriations for basic research and research infrastructure in science and engineering, and for support of graduate fellowships, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

JANUARY 10, 2007

Mr. GORDON of Tennessee introduced the following bill; which was referred to the Committee on Science and Technology

A BILL

To authorize appropriations for basic research and research infrastructure in science and engineering, and for support of graduate fellowships, and for other purposes.

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

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the “Sowing the Seeds
5 Through Science and Engineering Research Act”.

6 **SEC. 2. AUTHORIZATION OF APPROPRIATIONS FOR BASIC**
7 **RESEARCH ACTIVITIES.**

8 (a) NATIONAL SCIENCE FOUNDATION.—There are
9 authorized to be appropriated to the National Science

1 Foundation for support of basic research activities in the
2 physical sciences, mathematics and computer sciences, and
3 engineering, \$2,114,100,000 for fiscal year 2008,
4 \$2,325,510,000 for fiscal year 2009, \$2,558,060,000 for
5 fiscal year 2010, \$2,813,870,000 for fiscal year 2011, and
6 \$3,095,260,000 for fiscal year 2012.

7 (b) DEPARTMENT OF ENERGY.—There are author-
8 ized to be appropriated to the Secretary of Energy for the
9 Office of Science for support of basic research activities
10 in the physical sciences, mathematics and computer
11 sciences, and engineering, \$2,205,400,000 for fiscal year
12 2008, \$2,425,940,000 for fiscal year 2009,
13 \$2,668,530,000 for fiscal year 2010, \$2,935,380,000 for
14 fiscal year 2011, and \$3,228,920,000 for fiscal year 2012.

15 (c) NATIONAL AERONAUTICS AND SPACE ADMINIS-
16 TRATION.—There are authorized to be appropriated to the
17 National Aeronautics and Space Administration for sup-
18 port of basic research activities in the physical sciences,
19 mathematics and computer sciences, and engineering,
20 \$1,669,700,000 for fiscal year 2008, \$1,836,670,000 for
21 fiscal year 2009, \$2,020,340,000 for fiscal year 2010,
22 \$2,222,370,000 for fiscal year 2011, and \$2,444,610,000
23 for fiscal year 2012.

24 (d) NATIONAL INSTITUTE OF STANDARDS AND
25 TECHNOLOGY.—There are authorized to be appropriated

1 to the National Institute of Standards and Technology for
 2 support of basic research activities in the physical
 3 sciences, mathematics and computer sciences, and engi-
 4 neering, \$86,240,000 for fiscal year 2008, \$94,860,000
 5 for fiscal year 2009, \$104,350,000 for fiscal year 2010,
 6 \$114,780,000 for fiscal year 2011, and \$126,260,000 for
 7 fiscal year 2012.

8 (e) DEPARTMENT OF DEFENSE.—There are author-
 9 ized to be appropriated to the Secretary of Defense for
 10 support of basic research activities under budget category
 11 6.1, \$1,784,750,000 for fiscal year 2008, \$1,963,220,000
 12 for fiscal year 2009, \$2,159,540,000 for fiscal year 2010,
 13 \$2,375,490,000 for fiscal year 2011, and \$2,613,000,000
 14 for fiscal year 2012.

15 (f) HIGH-RISK RESEARCH.—Of the amounts appro-
 16 priated in each of subsections (a) through (e), not less
 17 than 8 percent shall be available for high-risk, potentially
 18 high-payoff research as determined by technical program
 19 managers at the respective agencies.

20 **SEC. 3. NATIONAL SCIENCE FOUNDATION EARLY CAREER**
 21 **AWARDS FOR SCIENCE AND ENGINEERING**
 22 **RESEARCHERS.**

23 (a) IN GENERAL.—The Director of the National
 24 Science Foundation shall carry out a program to award
 25 grants to scientists and engineers at the early stage of

1 their careers at institutions of higher education and orga-
2 nizations described in subsection (c)(2) to conduct re-
3 search in fields relevant to the mission of the Foundation.
4 The existing Faculty Early Career Development (CA-
5 REER) Program may be designated as the mechanism for
6 awarding such grants.

7 (b) SIZE AND DURATION OF AWARD.—The duration
8 of awards under this section shall be 5 years, and the
9 amount per year shall be at least \$80,000.

10 (c) ELIGIBILITY.—Award recipients shall be individ-
11 uals who are employed in a tenure-track position as an
12 assistant professor or equivalent title, or who hold an
13 equivalent position, at—

14 (1) an institution of higher education in the
15 United States; or

16 (2) an organization in the United States that is
17 a nonprofit, nondegree-granting research organiza-
18 tion such as a museum, observatory, or research lab-
19 oratory.

20 (d) SELECTION.—Award recipients shall be selected
21 on a competitive, merit-reviewed basis.

22 (e) SELECTION PROCESS AND CRITERIA FOR
23 AWARDS.—An applicant seeking funding under this sec-
24 tion shall submit a proposal to the Director at such time,
25 in such manner, and containing such information as the

1 Director may require. In evaluating the proposals sub-
2 mitted under this section, the Director shall consider, at
3 a minimum—

4 (1) the intellectual merit of the proposed work;

5 (2) the innovative or transformative nature of
6 the proposed research;

7 (3) the extent to which the proposal integrates
8 research and education, including undergraduate
9 education in science and engineering disciplines; and

10 (4) the potential of the applicant for leadership
11 at the frontiers of knowledge.

12 (f) AWARDS.—In awarding grants under this section,
13 the Director shall endeavor to ensure that the recipients
14 are from a variety of types of institutions of higher edu-
15 cation and nonprofit, nondegree-granting research organi-
16 zations. In support of this goal, the Director shall broadly
17 disseminate information about when and how to apply for
18 grants under this section, including by conducting out-
19 reach to Historically Black Colleges and Universities that
20 are part B institutions as defined in section 322(2) of the
21 Higher Education Act of 1965 (20 U.S.C. 1061(2)) and
22 minority institutions (as defined in section 365(3) of that
23 Act (20 U.S.C. 1067k(3))).

24 (g) AUTHORIZATION OF APPROPRIATION.—For each
25 of the fiscal years 2008 through 2012, the Director shall

1 allocate at least 3.5 percent of funds appropriated to the
2 National Science Foundation for Research and Related
3 Activities to the grants program under this section.

4 (h) REPORT.—Not later than 6 months after the date
5 of enactment of this Act, the Director shall transmit to
6 the Committee on Science of the House of Representatives
7 and to the Committee on Commerce, Science, and Trans-
8 portation of the Senate a report describing the distribution
9 of the institutions from which individuals have partici-
10 pated in the Faculty Early Career Development Program
11 since fiscal year 2001 among each of the categories of in-
12 stitutions of higher education defined by the Carnegie
13 Foundation for the Advancement of Teaching and the or-
14 ganizations in subsection (c)(2).

15 (i) EVALUATION.—Not later than 2 years after the
16 date of enactment of this Act, the Director shall transmit
17 to the Committee on Science of the House of Representa-
18 tives and to the Committee on Commerce, Science, and
19 Transportation of the Senate a report evaluating the im-
20 pact of the program carried out under this section on the
21 ability of young faculty to compete for National Science
22 Foundation research grants.

1 **SEC. 4. DEPARTMENT OF ENERGY EARLY CAREER AWARDS**
2 **FOR SCIENCE AND ENGINEERING RESEARCH-**
3 **ERS.**

4 (a) IN GENERAL.—The Director of the Office of
5 Science of the Department of Energy shall carry out a
6 program to award grants to scientists and engineers at
7 the early stage of their careers at institutions of higher
8 education and organizations described in subsection (c)(2)
9 to conduct research in fields relevant to the mission of the
10 Department.

11 (b) SIZE AND DURATION OF AWARD.—The duration
12 of awards under this section shall be up to 5 years, and
13 the amount per year shall be at least \$80,000.

14 (c) ELIGIBILITY.—Award recipients shall be individ-
15 uals who are employed in a tenure-track position as an
16 assistant professor or equivalent title, or who hold an
17 equivalent position, at—

18 (1) an institution of higher education in the
19 United States; or

20 (2) an organization in the United States that is
21 a nonprofit, nondegree-granting research organiza-
22 tion such as a museum, observatory, or research lab-
23 oratory.

24 (d) SELECTION.—Award recipients shall be selected
25 on a competitive, merit-reviewed basis.

1 (e) SELECTION PROCESS AND CRITERIA FOR
2 AWARDS.—An applicant seeking funding under this sec-
3 tion shall submit a proposal to the Director of the Office
4 of Science at such time, in such manner, and containing
5 such information as the Director may require. In evalu-
6 ating the proposals submitted under this section, the Di-
7 rector shall consider, at a minimum—

8 (1) the intellectual merit of the proposed work;

9 (2) the innovative or transformative nature of
10 the proposed research;

11 (3) the extent to which the proposal integrates
12 research and education, including undergraduate
13 education in science and engineering disciplines; and

14 (4) the potential of the applicant for leadership
15 at the frontiers of knowledge.

16 (f) COLLABORATION WITH NATIONAL LABORA-
17 TORIES.—In awarding grants under this section, the Di-
18 rector shall give priority to proposals in which the pro-
19 posed work includes collaboration with the Department of
20 Energy National Laboratories.

21 (g) AWARDS.—In awarding grants under this section,
22 the Director shall endeavor to ensure that the recipients
23 are from a variety of types of institutions of higher edu-
24 cation and nonprofit, nondegree-granting research organi-
25 zations. In support of this goal, the Director shall broadly

1 disseminate information about when and how to apply for
 2 grants under this section, including by conducting out-
 3 reach to Historically Black Colleges and Universities that
 4 are part B institutions as defined in section 322(2) of the
 5 Higher Education Act of 1965 (20 U.S.C. 1061(2)) and
 6 minority institutions (as defined in section 365(3) of that
 7 Act (20 U.S.C. 1067k(3))).

8 (h) AUTHORIZATION OF APPROPRIATIONS.—There
 9 are authorized to be appropriated to the Secretary of En-
 10 ergy to carry out the Director’s responsibilities under this
 11 section \$25,000,000 for each of the fiscal years 2008
 12 through 2012.

13 (i) REPORT ON RECRUITING AND RETAINING EARLY
 14 CAREER SCIENCE AND ENGINEERING RESEARCHERS AT
 15 THE NATIONAL LABORATORIES.—Not later than 3
 16 months after the date of enactment of this Act, the Direc-
 17 tor of the Office of Science shall transmit to the Com-
 18 mittee on Science of the House of Representatives and to
 19 the Committee on Energy and Natural Resources of the
 20 Senate a report on efforts to recruit and retain young sci-
 21 entists and engineers at the early stages of their careers
 22 at the Department of Energy National Laboratories. The
 23 report shall include—

24 (1) a description of Department of Energy and
 25 National Laboratory policies and procedures, includ-

1 ing financial incentives, awards, promotions, time set
2 aside for independent research, access to equipment
3 or facilities, and other forms of recognition, designed
4 to attract and retain young scientists and engineers;

5 (2) an evaluation of the impact of these incen-
6 tives on the careers of young scientists and engi-
7 neers at Department of Energy National Labora-
8 tories, and also on the quality of the research at the
9 National Laboratories and in Department of Energy
10 programs;

11 (3) a description of what barriers, if any, exist
12 to efforts to recruit and retain young scientists and
13 engineers, including limited availability of full time
14 equivalent positions, legal and procedural require-
15 ments, and pay grading systems; and

16 (4) the amount of funding devoted to efforts to
17 recruit and retain young researchers and the source
18 of such funds.

19 **SEC. 5. INTEGRATIVE GRADUATE EDUCATION AND RE-**
20 **SEARCH TRAINEESHIP PROGRAM.**

21 (a) **FUNDING.**—For each of the fiscal years 2008
22 through 2012, the Director of the National Science Foun-
23 dation shall allocate at least 1.5 percent of funds appro-
24 priated for Research and Related Activities to the Integra-

1 tive Graduate Education and Research Traineeship pro-
2 gram.

3 (b) COORDINATION.—The Director shall coordinate
4 with Federal departments and agencies, as appropriate,
5 to expand the interdisciplinary nature of the Integrative
6 Graduate Education and Research Traineeship program.

7 (c) AUTHORITY TO ACCEPT FUNDS FROM OTHER
8 AGENCIES.—The Director is authorized to accept funds
9 from other Federal departments and agencies to carry out
10 the Integrative Graduate Education and Research
11 Traineeship program.

12 **SEC. 6. PRESIDENTIAL INNOVATION AWARD.**

13 (a) ESTABLISHMENT.—The President shall periodi-
14 cally present the Presidential Innovation Award, on the
15 basis of recommendations received from the Director of
16 the Office of Science and Technology Policy or on the
17 basis of such other information as the President considers
18 appropriate, to individuals who develop one or more
19 unique scientific or engineering ideas in the national inter-
20 est at the time the innovation occurs.

21 (b) PURPOSE.—The awards under this section shall
22 be made to—

23 (1) stimulate scientific and engineering ad-
24 vances in the national interest;

1 (2) illustrate the linkage between science and
2 engineering and national needs; and

3 (3) provide an example to students of the con-
4 tribution they could make to society by entering the
5 science and engineering profession.

6 (c) CITIZENSHIP.—An individual is not eligible to re-
7 ceive the award under this section unless at the time such
8 award is made the individual—

9 (1) is a citizen or other national of the United
10 States; or

11 (2) is an alien lawfully admitted to the United
12 States for permanent residence who—

13 (A) has filed an application for naturaliza-
14 tion in the manner prescribed by section 334 of
15 the Immigration and Nationality Act (8 U.S.C.
16 1445); and

17 (B) is not permanently ineligible to become
18 a citizen of the United States.

19 (d) PRESENTATION.—The presentation of the award
20 shall be made by the President with such ceremonies as
21 he may deem proper, including attendance by appropriate
22 Members of Congress.

1 **SEC. 7. NATIONAL COORDINATION OFFICE FOR RESEARCH**
2 **INFRASTRUCTURE.**

3 (a) IN GENERAL.—The Office of Science and Tech-
4 nology Policy shall establish a National Coordination Of-
5 fice for Research Infrastructure, which shall identify and
6 prioritize deficiencies in research facilities and instrumen-
7 tation in academic institutions and in national laboratories
8 and shall make recommendations for the allocation of re-
9 sources provided under subsection (e).

10 (b) STAFFING.—The Director of the Office of Science
11 and Technology Policy shall appoint individuals to serve
12 in the office established under subsection (a) from among
13 the principal Federal agencies that support research in the
14 sciences, mathematics, and engineering, and shall at a
15 minimum include individuals from the National Science
16 Foundation and the Department of Energy.

17 (c) USE OF FUNDS.—The amounts authorized by
18 subsection (e) shall be available on a competitive, merit-
19 reviewed basis for construction and maintenance of re-
20 search facilities at institutions of higher education or na-
21 tional laboratories, including instrumentation, computing
22 and networking equipment, and other physical resources
23 necessary for performing leading-edge research.

24 (d) REPORT.—The Director of the Office of Science
25 and Technology Policy shall provide annually a report to
26 Congress at the time of the President’s budget proposal

1 describing the research infrastructure needs identified in
2 accordance with subsection (a) and a list of infrastructure
3 projects proposed for funding using the resources author-
4 ized by subsection (e).

5 (e) AUTHORIZATION OF APPROPRIATIONS.—

6 (1) NATIONAL SCIENCE FOUNDATION.—There
7 are authorized to be appropriated to the National
8 Science Foundation for the purposes of this section,
9 \$333,000,000 for each of fiscal years 2008 through
10 2012.

11 (2) DEPARTMENT OF ENERGY.—There are au-
12 thorized to be appropriated to the Secretary of En-
13 ergy for the purposes of this section, \$167,000,000
14 for each of fiscal years 2008 through 2012.

15 **SEC. 8. RESEARCH ON INNOVATION AND INVENTIVENESS.**

16 In carrying out its research programs on science pol-
17 icy and on the science of learning, the National Science
18 Foundation may support research on the process of inno-
19 vation and the teaching of inventiveness.

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