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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

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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.

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

SECTION 1. SHORT TITLE.

This Act may be cited as the ''Sowing the Seeds Through Science and Engineering Research Act''.

SEC. 2. AUTHORIZATION OF APPROPRIATIONS FOR BASIC RESEARCH ACTIVITIES.

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

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

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

(c) NATIONAL AERONAUTICS AND SPACE ADMINISTRATION.—There are authorized to be appropriated to the National Aeronautics and Space Administration for support of basic research activities in the physical sciences, mathematics and computer sciences, and engineering, $1,669,700,000 for fiscal year 2008, $1,836,670,000 for fiscal year 2009, $2,020,340,000 for fiscal year 2010, $2,222,370,000 for fiscal year 2011, and $2,444,610,000 for fiscal year 2012.

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

to the National Institute of Standards and Technology for support of basic research activities in the physical sciences, mathematics and computer sciences, and engineering, $86,240,000 for fiscal year 2008, $94,860,000 for fiscal year 2009, $104,350,000 for fiscal year 2010, $114,780,000 for fiscal year 2011, and $126,260,000 for fiscal year 2012.

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

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

SEC. 3. NATIONAL SCIENCE FOUNDATION EARLY CAREER AWARDS FOR SCIENCE AND ENGINEERING RESEARCHERS.

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

their careers at institutions of higher education and organizations described in subsection (c)(2) to conduct research in fields relevant to the mission of the Foundation. The existing Faculty Early Career Development (CAREER) Program may be designated as the mechanism for awarding such grants.

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

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

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

(2) an organization in the United States that is a nonprofit, nondegree-granting research organization such as a museum, observatory, or research laboratory.

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

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

Director may require. In evaluating the proposals submitted under this section, the Director shall consider, at a minimum—

(1) the intellectual merit of the proposed work;

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

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

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

(f) AWARDS.—In awarding grants under this section, the Director shall endeavor to ensure that the recipients are from a variety of types of institutions of higher education and nonprofit, nondegree-granting research organizations. In support of this goal, the Director shall broadly disseminate information about when and how to apply for grants under this section, including by conducting outreach to Historically Black Colleges and Universities that are part B institutions as defined in section 322(2) of the Higher Education Act of 1965 (20 U.S.C. 1061(2)) and minority institutions (as defined in section 365(3) of that Act (20 U.S.C. 1067k(3))).

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

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

(h) REPORT.—Not later than 6 months after the date of enactment of this Act, the Director shall transmit to the Committee on Science of the House of Representatives and to the Committee on Commerce, Science, and Transportation of the Senate a report describing the distribution of the institutions from which individuals have participated in the Faculty Early Career Development Program since fiscal year 2001 among each of the categories of institutions of higher education defined by the Carnegie Foundation for the Advancement of Teaching and the organizations in subsection (c)(2).

(i) EVALUATION.—Not later than 2 years after the date of enactment of this Act, the Director shall transmit to the Committee on Science of the House of Representatives and to the Committee on Commerce, Science, and Transportation of the Senate a report evaluating the impact of the program carried out under this section on the ability of young faculty to compete for National Science Foundation research grants.

SEC. 4. DEPARTMENT OF ENERGY EARLY CAREER AWARDS FOR SCIENCE AND ENGINEERING RESEARCHERS.

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

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

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

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

(2) an organization in the United States that is a nonprofit, nondegree-granting research organization such as a museum, observatory, or research laboratory.

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

(e) SELECTION PROCESS AND CRITERIA FOR AWARDS.—An applicant seeking funding under this section shall submit a proposal to the Director of the Office of Science at such time, in such manner, and containing such information as the Director may require. In evaluating the proposals submitted under this section, the Director shall consider, at a minimum—

(1) the intellectual merit of the proposed work;

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

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

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

(f) COLLABORATION WITH NATIONAL LABORATORIES.—In awarding grants under this section, the Director shall give priority to proposals in which the proposed work includes collaboration with the Department of Energy National Laboratories.

(g) AWARDS.—In awarding grants under this section, the Director shall endeavor to ensure that the recipients are from a variety of types of institutions of higher education and nonprofit, nondegree-granting research organizations. In support of this goal, the Director shall broadly

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

(h) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Secretary of Energy to carry out the Director's responsibilities under this section $25,000,000 for each of the fiscal years 2008 through 2012.

(i) REPORT ON RECRUITING AND RETAINING EARLY CAREER SCIENCE AND ENGINEERING RESEARCHERS AT THE NATIONAL LABORATORIES.—Not later than 3 months after the date of enactment of this Act, the Director of the Office of Science shall transmit to the Committee on Science of the House of Representatives and to the Committee on Energy and Natural Resources of the Senate a report on efforts to recruit and retain young scientists and engineers at the early stages of their careers at the Department of Energy National Laboratories. The report shall include—

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

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

(2) an evaluation of the impact of these incentives on the careers of young scientists and engineers at Department of Energy National Laboratories, and also on the quality of the research at the National Laboratories and in Department of Energy programs;

(3) a description of what barriers, if any, exist to efforts to recruit and retain young scientists and engineers, including limited availability of full time equivalent positions, legal and procedural requirements, and pay grading systems; and

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

SEC. 5. INTEGRATIVE GRADUATE EDUCATION AND RESEARCH TRAINEESHIP PROGRAM.

(a) FUNDING.—For each of the fiscal years 2008 through 2012, the Director of the National Science Foundation shall allocate at least 1.5 percent of funds appropriated for Research and Related Activities to the Integra-

tive Graduate Education and Research Traineeship program.

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

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

SEC. 6. PRESIDENTIAL INNOVATION AWARD.

(a) ESTABLISHMENT.—The President shall periodically present the Presidential Innovation Award, on the basis of recommendations received from the Director of the Office of Science and Technology Policy or on the basis of such other information as the President considers appropriate, to individuals who develop one or more unique scientific or engineering ideas in the national interest at the time the innovation occurs.

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

(1) stimulate scientific and engineering advances in the national interest;

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

(3) provide an example to students of the contribution they could make to society by entering the science and engineering profession.

(c) CITIZENSHIP.—An individual is not eligible to receive the award under this section unless at the time such award is made the individual—

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

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

(A) has filed an application for naturalization in the manner prescribed by section 334 of the Immigration and Nationality Act (8 U.S.C. 1445); and

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

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

SEC. 7. NATIONAL COORDINATION OFFICE FOR RESEARCH INFRASTRUCTURE.

(a) IN GENERAL.—The Office of Science and Technology Policy shall establish a National Coordination Office for Research Infrastructure, which shall identify and prioritize deficiencies in research facilities and instrumentation in academic institutions and in national laboratories and shall make recommendations for the allocation of resources provided under subsection (e).

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

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

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

describing the research infrastructure needs identified in accordance with subsection (a) and a list of infrastructure projects proposed for funding using the resources authorized by subsection (e).

(e) AUTHORIZATION OF APPROPRIATIONS.—

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

(2) DEPARTMENT OF ENERGY.—There are authorized to be appropriated to the Secretary of Energy for the purposes of this section, $167,000,000 for each of fiscal years 2008 through 2012.

SEC. 8. RESEARCH ON INNOVATION AND INVENTIVENESS.

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

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