110TH CONGRESS
1ST SESSION

H. R. 363

IN THE SENATE OF THE UNITED STATES

APRIL 25, 2007

Received; read twice and referred to the Committee on Health, Education, Labor, and Pensions

AN ACT

To authorize programs for support of the early career development of science and engineering researchers, 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. 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 organiza-

tion 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))). In awarding grants under this section, the Director shall give special consideration to eligible early-career researchers who have followed alternative career paths such as working part-time or in non-academic settings, or who have taken a significant career break or other leave of absence.

(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, except to the extent that a sufficient number of meritorious grant applications have not been received for a fiscal year.

(h) REPORT.—Not later than 6 months after the date of enactment of this Act, the Director shall transmit to the Committee on Science and Technology 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 and Technology 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. 3. 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, giving priority to grants to expand domestic energy production and use through coal-to-liquids technology and advanced nuclear reprocessing.

(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 and Technology 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, including 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. 4. 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 Integrative 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. 5. 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;

(3) show the potential of such innovation to substantively enhance the economic competitiveness of the United States through development of commercializable intellectual property; and

(4) 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. 6. 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. Such Office shall—

(1) identify and prioritize the deficiencies in research facilities and major instrumentation located at academic institutions and at national laboratories that are available for use by academic researchers; and

(2) institute and coordinate the planning by Federal agencies for the acquisition, refurbishment, and maintenance of research facilities and major instrumentation required to address the deficiencies identified under paragraph (1).

In prioritizing the deficiencies identified under paragraph (1), the Office shall consider research needs in areas relevant to the Nation's economic competitiveness.

(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) 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—

(1) describing the research infrastructure needs identified in accordance with subsection (a);

(2) listing research facilities projects and budget proposals, by agency, for major instrumentation acquisitions that are included in the President's budget proposal; and

(3) explaining how these facilities projects and instrumentation acquisitions relate to the deficiencies and priorities arrived at in accordance with subsection (a).

SEC. 7. 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.

SEC. 8. REPORT ON NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY EFFORTS TO RECRUIT AND RETAIN EARLY CAREER SCIENCE AND ENGINEERING RESEARCHERS.

Not later than 3 months after the date of enactment of this Act, the Director of the National Institute of Standards and Technology shall transmit to the Committee on Science and Technology of the House of Representatives and to the Committee on Commerce, Science, and Transportation of the Senate a report on efforts to recruit and retain young scientists and engineers at the early stages of their careers at the National Institute of Standards and Technology laboratories and joint institutes. The report shall include—

(1) a description of National Institute of Standards and Technology 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 the National Institute of Standards and Technology, and also on the quality of the research at the National Institute of Standards and Technology's laboratories and in the National Institute of Standards and Technology's 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. 9. NASA'S CONTRIBUTION TO INNOVATION.

(a) SENSE OF THE CONGRESS.—It is the sense of the Congress that—

(1) a balanced science program as authorized by section 101(d) of the National Aeronautics and Space Administration Authorization Act of 2005

(Public Law 109–155) contributes significantly to innovation in and the economic competitiveness of the United States; and

(2) a robust National Aeronautics and Space Administration, funded at the levels authorized under sections 202 and 203 of that Act, would offer a balance among science, aeronautics, exploration, and human space flight programs, all of which can attract and employ scientists, engineers, and technicians across a broad range of fields in science, technology, mathematics, and engineering.

(b) PARTICIPATION IN INNOVATION AND COMPETITIVENESS PROGRAMS.—The Administrator of the National Aeronautics and Space Administration shall fully participate in any interagency efforts to promote innovation and economic competitiveness through scientific research and development within the spending levels cited in subsection (a).

SEC. 10. UNDERGRADUATE SCHOLARSHIPS FOR SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS.

(a) ESTABLISHMENT.—The National Science Foundation shall establish a program, to be known as the Undergraduate Scholarships for Science, Technology, Engineering, and Mathematics, or US-STEM, program, for

awarding scholarships to undergraduate scholars in science, technology, engineering, and mathematics.

(b) ELIGIBILITY.—A student is eligible for a scholarship under this section only if the student—

(1) is enrolled at a public, 4-year college or university;

(2) will have completed at least one-half of the credit requirements for an undergraduate degree before beginning studies to be funded by the scholarship;

(3) has maintained a grade point average in undergraduate studies of at least 3.0 on a scale of 4.0, or an equivalent level as calculated by the National Science Foundation, except that if the student's institution appeals this criterion on the basis of undue hardship on the student, the National Science Foundation may waive this paragraph;

(4) has a total family income of less than $75,000 per year, with such amount to be adjusted annually by the National Science Foundation for inflation;

(5) has not been convicted of a felony; and

(6) is a citizen or permanent resident alien of the United States.

(c) SELECTION CRITERIA.—Scholarship recipients shall be selected on the basis of merit and such other criteria as the National Science Foundation shall establish.

(d) AWARDS.—The National Science Foundation shall announce awards before April 1 for each upcoming academic year, and may make up to 2,500 awards per year. Awards may be made for a maximum of 2 academic years for each student, and scholarship amounts shall be paid to the institution.

(e) ADVISORY BOARD.—The Director of the National Science Foundation shall establish an advisory board, which shall make recommendations to the Director for selection criteria for scholarship recipients, and provide guidance and oversight for the program.

(f) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the National Science Foundation for carrying out this section—

(1) $30,000,000 for fiscal year 2009;

(2) $60,000,000 for fiscal year 2010;

(3) $61,800,000 for fiscal year 2011;

(4) $63,600,000 for fiscal year 2012; and

(5) $65,500,000 for fiscal year 2013.

Passed the House of Representatives April 24, 2007.

Attest: LORRAINE C. MILLER,

Clerk.