I

109TH CONGRESS
1ST SESSION

H. R. 4434

To authorize science scholarships for educating mathematics and science teachers, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

DECEMBER 6, 2005

Mr. GORDON (for himself, Ms. PELOSI, Mr. HONDA, Mr. EMANUEL, Mr. INSLEE, Mr. LIPINSKI, Ms. ZOE LOFGREN of California, Mr. BAIRD, Mr. COSTELLO, Mr. MENENDEZ, Mr. GEORGE MILLER of California, Mr. PRICE of North Carolina, Mr. MILLER of North Carolina, Mr. TIERNEY, Mr. COSTA, Mr. DAVIS of Tennessee, Mr. CARNAHAN, Mr. MOORE of Kansas, Ms. ESHOO, Mr. SMITH of Washington, and Mr. UDALL of Colorado) introduced the following bill; which was referred to the Committee on Science

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A BILL

To authorize science scholarships for educating mathematics and science teachers, 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. TABLE OF CONTENTS.

The table of contents for this Act is as follows:

SEC. 2. DEFINITIONS.

In this Act:

(1) The term ''cost of attendance'' has the meaning given that term in section 472 of the Higher Education Act of 1965 (20 U.S.C. 1087ll).

(2) The term ''Director'' means the Director of the National Science Foundation.

(3) The term ''high-need local educational agency'' means a local educational agency that meets one or more of the following criteria:

(A) It has at least one school in which 50 percent or more of the enrolled students are eligible for participation in the free and reduced price lunch program established by the Richard B. Russell National School Lunch Act (42 U.S.C. 1751 et seq.).

(B) It has at least one school in which more than 34 percent of the academic classroom teachers at the secondary level who teach science and mathematics do not have an under-

graduate degree with a major or minor in, or a graduate degree in, the academic field in which they teach the largest percentage of their classes.

(4) The term ''institution of higher education'' has the meaning given that term in section 101(a) of the Higher Education Act of 1965 (20 U.S.C. 1001(a)).

(5) The term ''mathematics and science teacher'' means a mathematics, science, or technology teacher at the elementary school or secondary school level.

(6) The term ''scholarship'' means an award under section 104.

TITLE I—SCIENCE SCHOLARSHIPS

SEC. 101. SHORT TITLE.

This title may be cited as the ''10,000 Teachers, 10 Million Minds Science and Math Scholarship Act''.

SEC. 102. FINDINGS.

Congress finds the following:

(1) The prosperity the United States enjoys today is due in no small part to investments the Nation has made in research and development over the past 50 years.

(2) Corporate, government, and national scientific and technical leaders have raised concerns that current trends affecting the science and technology enterprise of the Nation could result in erosion of this past success and jeopardize future prosperity.

(3) The National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine were tasked in a congressional request to recommend actions that the Federal Government could take to enhance the science and technology enterprise so the United States can successfully compete, prosper, and be secure in the global community of the 21st century.

(4) The Academies' highest priority recommendation in its report, ''Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Economic Future'', is to improve K–12 science and mathematics education, and the Academies' first recommended action item is to institute a major scholarship program to recruit and educate annually 10,000 mathematics and science teachers.

SEC. 103. POLICY OBJECTIVE.

In allocating the resources made available under section 106, the National Science Foundation shall seek to

increase by up to 10,000 per year the number of elementary and secondary mathematics and science teachers in the Nation's schools having both exemplary subject knowledge and pedagogical skills.

SEC. 104. SCIENCE SCHOLARSHIP PROGRAM.

(a) PROGRAM.—

(1) IN GENERAL.—The Director shall carry out a program to award grants to eligible institutions of higher education (or consortia of such institutions) to provide scholarships and to develop and implement academic programs designed to recruit and educate mathematics and science teachers.

(2) DISTRIBUTION OF AWARDS.—The Director shall, in awarding grants under this section, consider the distribution of awards among institutions of different sizes and geographic locations.

(3) MERIT REVIEW.—Grants shall be provided under this section on a competitive, merit-reviewed basis.

(4) USE OF GRANTS.—Grants provided under this section shall be used by eligible institutions of higher education or consortia to develop and implement a program to encourage and prepare undergraduate students majoring in mathematics, science,

and engineering at the grantee's institution to become mathematics and science teachers, through—

(A) administering scholarships in accordance with subsection (c);

(B) developing and offering undergraduate academic degree programs in one or more fields of science, mathematics, and engineering that will also prepare graduates to become certified and licensed to teach in elementary schools and secondary schools; and

(C) providing professional development programs and mentoring activities to scholarship recipients, both before and after they receive their baccalaureate degree, to enable the recipients to become better mathematics and science teachers, to fulfill the service requirements of this section, and to exchange ideas with others in their fields.

(5) ELIGIBLE INSTITUTION OF HIGHER EDUCATION.—For purposes of this section, an eligible institution of higher education under paragraph (1) is an institution of higher education (or consortia of such institutions) that—

(A) in its application for a grant under the program, identifies faculty from the institu-

tion's mathematics, science, or engineering departments and from its college or school of education who will participate in the development and implementation of the program; and

(B) has entered into a partnership with one or more private sector entities, which—

(i) pledge to provide paid summer internships for scholarship recipients; and

(ii) may make other financial or in-kind contributions to provide additional scholarship support and to assist in the development of the program.

(6) MENTORING.—Grantees shall include among the activities under paragraph (4)(C) mentoring for individuals carrying out their service obligation in accordance with subsection (c)(5). Such mentoring shall be provided through regularly scheduled activities during the school year and through summer institutes at the grantees' institutions. Summer institutes may also enroll mathematics and science teachers who have not received scholarships under the program.

(b) SELECTION PROCESS.—

(1) APPLICATION.—An eligible institution of higher education or consortium seeking funding

under this section shall submit an application to the Director at such time, in such manner, and containing such information as the Director may require. The application shall include, at a minimum—

(A) a description of the scholarship program that the applicant intends to operate, including the number of scholarships and the scholarship amount the applicant intends to award, and the selection process that will be used in awarding the scholarships;

(B) evidence that the applicant has the capability to administer the scholarship program in accordance with the provisions of this section;

(C) a description of the academic program or programs that will be offered to scholarship recipients, and identification of the faculty that will be involved;

(D) a description of the professional development and mentoring activities that will be provided to scholarship recipients during and after their matriculation in the program for which the scholarship is received; and

(E) evidence that the requirement of subsection (a)(4)(B) has been satisfied, including a

description of the characteristics and the total number of internships that will be made available.

(2) REVIEW OF APPLICATIONS.—In evaluating the applications submitted under paragraph (1), the Director shall consider, at a minimum—

(A) the ability of the applicant to effectively carry out the program;

(B) the degree and quality of interdepartmental faculty involvement to which the applicant is committed;

(C) the degree to which the proposed academic program, or programs, and associated student support activities will enable scholarship recipients to become successful mathematics and science teachers;

(D) the number and quality of the students that will be served by the program;

(E) the ability of the applicant to recruit students who would otherwise not pursue a career in teaching; and

(F) the extent to which the applicant has demonstrated the active participation and financial support of private sector entities, in-

cluding the number and characteristics of summer internships offered.

(3) SPECIAL AWARD CRITERIA.—Criteria for an award under this section shall include the impact of an award on the overall geographic distribution of awards made under the program, with the objective of avoiding undue concentration of awards.

(c) SCHOLARSHIP REQUIREMENTS.—

(1) IN GENERAL.—Scholarships under this section shall be available only to undergraduate students who are majoring in science, mathematics, or engineering.

(2) SELECTION.—Individuals shall be selected to receive scholarships primarily on the basis of academic merit, with consideration given to financial need and to the goal of promoting the participation of individuals identified in section 33 or 34 of the Science and Engineering Equal Opportunities Act (42 U.S.C. 1885a or 1885b).

(3) AMOUNT.—The amount to be awarded for a scholarship under this section shall not exceed $20,000 per year, except that no individual shall receive for any year more than the cost of attendance at that individual's institution. Individuals may receive a maximum of 4 years of scholarship support.

(4) ACADEMIC PERFORMANCE.—Scholarships shall be terminated for individuals who fail to maintain an acceptable level of academic standing in the educational institution in which the individual is enrolled, as determined by the Director.

(5) SERVICE OBLIGATION.—If an individual receives a scholarship, that individual shall be required to complete, within 6 years after graduation from the baccalaureate degree program for which the scholarship was awarded, the following number of years of service as a mathematics or science teacher—

(A) 5 years of service for scholarship recipients receiving 3 or 4 years of scholarship support; or

(B) 3 years of service for scholarship recipients receiving 1 or 2 years of scholarship support.

(6) EXCEPTION.—The period of service obligation under paragraph (5) is reduced by 1 year for scholarship recipients who teach in a high-need local educational agency.

(d) CONDITIONS OF SUPPORT.—As a condition of acceptance of a scholarship under this section, a recipient

shall enter into an agreement with the institution of higher education—

(1) accepting the terms of the scholarship pursuant to subsections (c) and (f);

(2) agreeing to provide the awarding institution of higher education with annual certification of employment and up to-date contact information and to participate in surveys provided by the institution of higher education as part of an ongoing assessment program; and

(3) establishing that any scholarship recipient shall be liable to the United States for any amount that is required to be repaid in accordance with subsection (f).

(e) COLLECTION FOR NONCOMPLIANCE.—

(1) MONITORING COMPLIANCE.—An eligible institution of higher education (or consortium thereof) receiving a grant under this section shall, as a condition of participating in the program, enter into an agreement with the Director to monitor the compliance of scholarship recipients with their respective service requirements.

(2) COLLECTION OF REPAYMENT.—(A) In the event that a scholarship recipient is required to repay the scholarship under subsection (f), the insti-

tution shall be responsible for collecting the repayment amounts.

(B) Except as provided in subparagraph (C), any such repayment shall be returned to the Treasury of the United States.

(C) A grantee may retain a percentage of any repayment it collects to defray administrative costs associated with the collection. The Director shall establish a single, fixed percentage that will apply to all grantees.

(f) FAILURE TO COMPLETE SERVICE OBLIGATION.—

(1) GENERAL RULE.—If an individual who has received a scholarship under this section—

(A) withdraws from the baccalaureate degree program for which the award was made before the completion of such program;

(B) declares that the individual does not intend to fulfill the service obligation under this section; or

(C) fails to fulfill the service obligation of the individual under this section,

such individual shall be liable to the United States as provided in paragraph (2).

(2) AMOUNT OF REPAYMENT.—(A) If a circumstance described in paragraph (1) occurs before

the completion of one year of a service obligation under this section, the United States shall be entitled to recover from the individual, within one year after the date of the occurrence of such circumstance, an amount equal to—

(i) the total amount of awards received by such individual under this section; plus

(ii) the interest on the amounts of such awards which would be payable if at the time the awards were received they were loans bearing interest at the prevailing rate for student loans.

(B) If a circumstance described in paragraph (1)(B) or (C) occurs—

(i) after the completion of one year of a service obligation under this section and for an individual who received either 3 or 4 years of scholarship support, the United States shall be entitled to recover from the individual, within one year after the date of the occurrence of such circumstance, an amount equal to the total amount of awards received by such individual under this section minus ⅕ of the amount of the award received per year for each full year of service completed, plus the interest on such

amounts which would be payable if at the time the amounts were received they were loans bearing interest at the prevailing rate for student loans; or

(ii) after the completion of one year of a service obligation under this section and for an individual who received either 1 or 2 years of scholarship support, the United States shall be entitled to recover from the individual, within one year after the date of the occurrence of such circumstance, an amount equal to the total amount of awards received by such individual under this section minus ⅓ of the amount of the award received per year for each full year of service completed, plus the interest on such amounts which would be payable if at the time the amounts were received they were loans bearing interest at the prevailing rate for student loans.

(3) EXCEPTIONS.—The Director may provide for the partial or total waiver or suspension of any service or payment obligation by an individual under this section whenever compliance by the individual with the obligation is impossible or would involve extreme hardship to the individual, or if enforcement

of such obligation with respect to the individual would be unconscionable.

(g) DATA COLLECTION.—Institutions or consortia receiving grants under this section shall supply to the Director any relevant statistical and demographic data on scholarship recipients the Director may request, including information on employment required by subsection (c)(5).

SEC. 105. SCIENCE AND MATH SCHOLARSHIP TRUST FUND.

(a) ESTABLISHMENT.—There is established in the Treasury of the United States a trust fund to be known as the ''National Science Foundation Science and Math Teacher Scholarship Trust Fund'' (hereafter in this section referred to as the ''Trust Fund''). The Trust Fund shall consist of gifts and donations accepted by the National Science Foundation.

(b) INVESTMENT OF TRUST FUND.—The Director shall direct the Secretary of the Treasury to invest and reinvest funds in the Trust Fund in public debt securities with maturities suitable for the needs of the Trust Fund, and bearing interest at rates determined by the Secretary of the Treasury, taking into consideration the current average market yield on outstanding marketable obligations of the United States of comparable maturities. Interest earned shall be credited to the Trust Fund.

(c) PURPOSE.—Principal and income accruing from the Trust Fund principal shall be used to contribute to the funding of scholarships awarded pursuant to section 104, to the extent provided in advance in appropriation Acts.

SEC. 106. AUTHORIZATION OF APPROPRIATIONS.

There are authorized to be appropriated to the National Science Foundation for the purposes of this title, $85,000,000 for fiscal year 2007, $220,000,000 for fiscal year 2008, $400,000,000 for fiscal year 2009, $590,000,000 for fiscal year 2010, and $690,000,000 for fiscal year 2011.

TITLE II—SCIENCE AND MATH TEACHER PROGRAMS

SEC. 201. SUMMER INSTITUTES.

(a) NATIONAL SCIENCE FOUNDATION INSTITUTES.—

(1) IN GENERAL.—The Director shall increase the number of awards under the Teacher Institutes for the 21st Century program and shall expand the program to allow grantees to operate 1 to 2 week summer teacher institutes with the goal of reaching the maximum number of in-service science and mathematics teachers, particularly elementary and middle school teachers, to improve their content knowledge and pedagogical skills.

(2) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the National Science Foundation for the Teacher Institutes for the 21st Century program, $37,000,000 for fiscal year 2007, $92,000,000 for fiscal year 2008, $110,000,000 for fiscal year 2009, $110,000,000 for fiscal year 2010, and $110,000,000 for fiscal year 2011.

(b) LABORATORY SCIENCE TEACHER PROFESSIONAL DEVELOPMENT.—There are authorized to be appropriated to the Department of Energy for the Laboratory Science Teacher Professional Development program, $3,000,000 for fiscal year 2007, $8,000,000 for fiscal year 2008, $10,000,000 for fiscal year 2009, $10,000,000 for fiscal year 2010, and $10,000,000 for fiscal year 2011.

SEC. 202. GRADUATE DEGREE PROGRAM.

(a) PROGRAM.—

(1) IN GENERAL.—The Director shall carry out a program to award grants to institutions of higher education to develop and implement master's degree programs for in-service mathematics and science teachers that will strengthen their subject area knowledge and pedagogical skills. The degree program shall be designed for current teachers, who will enroll as part-time students, and to allow partici-

pants to obtain master's degrees within a period of 2 years.

(2) DISTRIBUTION OF AWARDS.—The Director shall, in awarding grants under this section, consider the distribution of awards among institutions of different sizes and geographic locations.

(3) MERIT REVIEW.—Grants shall be provided under this section on a competitive, merit-reviewed basis.

(4) USE OF GRANTS.—Grants provided under this section shall be used by institutions of higher education to develop and implement a program of instruction, which may involve online learning, leading to the master's degree in science and mathematics education. Grant funds may be used to—

(A) develop courses of instruction and related educational materials;

(B) cover the cost of attendance for students in the degree program; and

(C) acquire computer and networking equipment needed for implementing the program.

(b) SELECTION PROCESS.—

(1) APPLICATION.—An institution of higher education seeking funding under this section shall

submit an application to the Director at such time, in such manner, and containing such information as the Director may require. The application shall include, at a minimum—

(A) a description of the master's degree program that the applicant intends to operate, including the number of students who can be accommodated in the program and identification of the faculty who will be involved in designing and implementing the program; and

(B) a description of the sequence of courses that will be offered to students in the academic program, including how the program will fit within a 2-year timeframe and how it will be tailored to the needs of part-time students.

(2) REVIEW OF APPLICATIONS.—In evaluating the applications submitted under paragraph (1), the Director shall consider, at a minimum—

(A) the ability of the applicant to effectively carry out the program;

(B) the degree and quality of interdepartmental involvement by science, mathematics, and education faculty members in developing and implementing the program;

(C) the number and quality of the students that will be served by the program; and

(D) the extent to which the program is tailored to the needs of in-service teachers, who will be participating in the program as part-time students.

(3) SPECIAL AWARD CRITERIA.—Criteria for an award under this section shall include the impact of an award on the overall geographic distribution of awards made under the program, with the objective of avoiding undue concentration of awards.

(c) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the National Science Foundation for the purposes of this section $200,000,000 for fiscal year 2007, $400,000,000 for fiscal year 2008, $600,000,000 for fiscal year 2009, $600,000,000 for fiscal year 2010, and $600,000,000 for fiscal year 2011.

SEC. 203. ADVANCED PLACEMENT PREPARATION.

(a) NATIONAL SCIENCE FOUNDATION PROGRAM.—

(1) IN GENERAL.—The Director shall add a component to the Teacher Professional Continuum Program to award grants to institutions of higher education, or to supplement existing grants, to develop and implement teacher training activities to prepare science and mathematics teachers to teach

Advanced Placement and International Baccalaureate science and mathematics courses.

(2) DISTRIBUTION OF AWARDS.—The Director shall, in awarding grants under this section, consider the distribution of awards among institutions of different sizes and geographic locations with the goal of reaching science and mathematics teachers in all parts of the Nation, and in particular, teachers from schools where few or no Advanced Placement or International Baccalaureate science or mathematics courses are now offered.

(3) MERIT REVIEW.—Grants shall be provided under this section on a competitive, merit-reviewed basis.

(4) USE OF GRANTS.—Grants provided under this section shall be used by institutions of higher education to—

(A) develop training programs, which may involve online learning, in accordance with paragraph (1), including related educational materials and equipment; and

(B) cover cost of attendance for teachers participating in the training program.

(b) SELECTION PROCESS.—

(1) APPLICATION.—An institution of higher education seeking funding under this section shall submit an application to the Director at such time, in such manner, and containing such information as the Director may require. The application shall include, at a minimum—

(A) a description of the training program that the applicant intends to operate, including the number of teachers that can be accommodated in the program; and

(B) evidence of the intention of private sector companies or foundations to offer to teachers who complete the training program bonuses for each student they teach who passes an Advanced Placement or International Baccalaureate science or mathematics course.

(2) REVIEW OF APPLICATIONS.—In evaluating the applications submitted under paragraph (1), the Director shall consider, at a minimum—

(A) the ability of the applicant to effectively carry out the program;

(B) the number of teachers who will be served by the program; and

(C) the level of support to be provided under paragraph (1)(B).

(3) SPECIAL AWARD CRITERIA.—Criteria for an award under this section shall include the impact of an award on teachers from schools where few or no Advanced Placement or International Baccalaureate science or mathematics courses are now offered.

(c) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the National Science Foundation for the purposes of this section, $92,000,000 for fiscal year 2007, $153,000,000 for fiscal year 2008, $219,000,000 for fiscal year 2009, $296,000,000 for fiscal year 2010, and $357,000,000 for fiscal year 2011.

SEC. 204. CURRICULAR MATERIALS.

(a) INSTRUCTIONAL MATERIALS DEVELOPMENT.—There are authorized to be appropriated to the National Science Foundation for the Instructional Materials Development activity, $30,000,000 for fiscal year 2007, $31,000,000 for fiscal year 2008, $32,000,000 for fiscal year 2009, $33,000,000 for fiscal year 2010, and $34,000,000 for fiscal year 2011.

(b) ASSESSMENT PANEL.—The Director, in consultation with the Secretary of Education, shall convene a national panel of experts on science and mathematics education to identify and collect K–12 science and mathematics teaching materials that have been demonstrated to be effective and to recommend the development of new ma-

terials in areas where effective materials do not exist. The Director and Secretary shall develop ways to disseminate effective materials and support efforts to develop new materials, in accordance with the recommendations of the national panel.

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