

Union Calendar No. 50

110TH CONGRESS
1ST SESSION

H. R. 362

[Report No. 110-85]

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

IN THE HOUSE OF REPRESENTATIVES

JANUARY 10, 2007

Mr. GORDON of Tennessee (for himself and Mr. HALL of Texas) introduced the following bill; which was referred to the Committee on Science and Technology

APRIL 16, 2007

Additional sponsors: Mr. LIPINSKI, Mr. BAIRD, Ms. SLAUGHTER, Mr. HONDA, Mr. CLEAVER, Mr. VAN HOLLEN, Ms. HIRONO, Ms. MCCOLLUM of Minnesota, Mr. DAVIS of Alabama, Ms. JACKSON-LEE of Texas, Mr. WEXLER, Ms. GIFFORDS, Ms. MATSUI, Mr. MCNERNEY, Mr. COSTELLO, Mr. HINOJOSA, Mr. MOORE of Kansas, Mr. ABERCROMBIE, Mr. LAMPSON, Mr. EHLERS, Ms. HOOLEY, Mr. WU, Mr. ROSS, Mr. CARNAHAN, Ms. HERSETH SANDLIN, Ms. EDDIE BERNICE JOHNSON of Texas, Ms. WOOLSEY, Mr. UDALL of Colorado, Mr. BARTLETT of Maryland, Mr. SHAYS, and Mr. CHANDLER

APRIL 16, 2007

Reported with an amendment, committed to the Committee of the Whole House on the State of the Union, and ordered to be printed

[Strike out all after the enacting clause and insert the part printed in italic]

[For text of introduced bill, see copy of bill as introduced on January 10, 2007]

A BILL

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

4 *The table of contents for this Act is as follows:*

Sec. 1. Table of contents.

Sec. 2. Findings.

Sec. 3. Definitions.

TITLE I—SCIENCE SCHOLARSHIPS

Sec. 101. Short title.

Sec. 102. Findings.

Sec. 103. Policy objective.

Sec. 104. Robert Noyce Teacher Scholarship Program.

TITLE II—MATHEMATICS AND SCIENCE EDUCATION IMPROVEMENT

Sec. 201. Mathematics and science education partnerships amendments.

Sec. 202. Teacher institutes.

Sec. 203. Graduate degree program.

Sec. 204. Curricular materials.

Sec. 205. Science, Technology, Engineering, and Mathematics Talent Expansion Program.

Sec. 206. High-need local educational agency definition.

Sec. 207. Teacher leaders.

Sec. 208. Laboratory science pilot program.

Sec. 209. Study on laboratory equipment donations for schools.

5 **SEC. 2. FINDINGS.**

6 *Congress finds the following:*

7 (1) *The National Science Foundation has made*
 8 *significant and valuable contributions to the improve-*
 9 *ment of K–12 and undergraduate science, technology,*

1 *engineering, and mathematics education throughout*
2 *its 56 year history.*

3 (2) *Under section 3 of the National Science*
4 *Foundation Act of 1950 (42 U.S.C. 1862), the Na-*
5 *tional Science Foundation is explicitly required to*
6 *strengthen science, mathematics, and engineering re-*
7 *search potential and education programs at all levels.*

8 **SEC. 3. DEFINITIONS.**

9 *In this Act:*

10 (1) *The term “cost of attendance” has the mean-*
11 *ing given that term in section 472 of the Higher Edu-*
12 *cation Act of 1965 (20 U.S.C. 1087ll).*

13 (2) *The term “Director” means the Director of*
14 *the National Science Foundation.*

15 (3) *The term “institution of higher education”*
16 *has the meaning given that term in section 101(a) of*
17 *the Higher Education Act of 1965 (20 U.S.C.*
18 *1001(a)).*

19 (4) *The term “mathematics and science teacher”*
20 *means a mathematics, science, or technology teacher*
21 *at the elementary school or secondary school level.*

1 **TITLE I—SCIENCE**
2 **SCHOLARSHIPS**

3 **SEC. 101. SHORT TITLE.**

4 *This title may be cited as the “10,000 Teachers, 10*
5 *Million Minds Science and Math Scholarship Act”.*

6 **SEC. 102. FINDINGS.**

7 *Congress finds the following:*

8 (1) *The prosperity the United States enjoys*
9 *today is due in no small part to investments the Na-*
10 *tion has made in research and development over the*
11 *past 50 years.*

12 (2) *Corporate, government, and national sci-*
13 *entific and technical leaders have raised concerns that*
14 *current trends affecting the science and technology en-*
15 *terprise of the Nation could result in erosion of this*
16 *past success and jeopardize future prosperity.*

17 (3) *The National Academy of Sciences, the Na-*
18 *tional Academy of Engineering, and the Institute of*
19 *Medicine were tasked in a congressional request to*
20 *recommend actions that the Federal Government*
21 *could take to enhance the science and technology en-*
22 *terprise so that the United States can successfully*
23 *compete, prosper, and be secure in the global commu-*
24 *nity of the 21st century.*

1 (4) *The Academies’ highest priority recommenda-*
2 *tion in its report, “Rising Above the Gathering*
3 *Storm: Energizing and Employing America for a*
4 *Brighter Economic Future”, is to improve K–12*
5 *mathematics and science education, and the Acad-*
6 *emies’ first recommended action item is to institute a*
7 *major scholarship program to recruit and educate an-*
8 *nually 10,000 mathematics and science teachers.*

9 **SEC. 103. POLICY OBJECTIVE.**

10 *In carrying out the program under section 104, the*
11 *National Science Foundation shall seek to increase by up*
12 *to 10,000 per year the number of elementary and secondary*
13 *mathematics and science teachers in the Nation’s schools*
14 *having both exemplary subject knowledge and pedagogical*
15 *skills.*

16 **SEC. 104. ROBERT NOYCE TEACHER SCHOLARSHIP PRO-**
17 **GRAM.**

18 (a) *PROGRAM AMENDMENTS.—Section 10 of the Na-*
19 *tional Science Foundation Authorization Act of 2002 (42*
20 *U.S.C. 1862n–1) is amended—*

21 (1) *by inserting “TEACHER” after “NOYCE” in*
22 *the section heading;*

23 (2) *in subsection (a)(1)—*

24 (A) *by striking “to provide scholarships, sti-*
25 *pends, and programming designed”;*

1 (B) by inserting “and to provide scholar-
2 ships and stipends to students participating in
3 the program” after “science teachers”; and

4 (C) by inserting “Teacher” after “Noyce”;
5 (3) in subsection (a)(3)(A)—

6 (A) by striking “encourage top college jun-
7 iors and seniors” and inserting “recruit and
8 prepare undergraduate students”; and

9 (B) by inserting “qualified as” after “to be-
10 come”;

11 (4) in subsection (a)(3)(A)(ii)—

12 (A) by striking “programs to help scholar-
13 ship recipients” and inserting “academic courses
14 and early field teaching experiences designed to
15 prepare students participating in the program”;

16 (B) by striking “programs that will result
17 in” and inserting “such preparation as is nec-
18 essary to meet requirements for”; and

19 (C) by striking “licensing; and” and insert-
20 ing “licensing”;

21 (5) in subsection (a)(3)(A)(iii)—

22 (A) by striking “scholarship recipients” and
23 inserting “students participating in the pro-
24 gram”;

1 (B) by striking “enable the recipients” and
2 inserting “enable the students”; and

3 (C) by striking “; or” and inserting “;
4 and”;

5 (6) in subsection (a)(3)(A) by inserting at the
6 end the following new clause:

7 “(iv) providing summer internships for
8 freshman students participating in the pro-
9 gram; or”;

10 (7) in subsection (a)(3)(B)—

11 (A) by striking “encourage” and inserting
12 “recruit and prepare”; and

13 (B) by inserting “qualified as” after “to be-
14 come”;

15 (8) by amending clause (ii) of subsection
16 (a)(3)(B) to read as follows:

17 “(ii) offering academic courses and
18 field teaching experiences designed to pre-
19 pare stipend recipients to teach in elemen-
20 tary schools and secondary schools, includ-
21 ing such preparation as is necessary to meet
22 requirements for teacher certification or li-
23 censing; and”;

24 (9) in subsection (a) by inserting at the end the
25 following new paragraph:

1 “(4) *ELIGIBILITY REQUIREMENT.*—*To be eligible*
2 *for an award under this section, an institution of*
3 *higher education (or consortia of such institutions)*
4 *shall ensure that specific faculty members and staff*
5 *from the institution’s mathematics, science, or engi-*
6 *neering departments and specific education faculty*
7 *are designated to carry out the development and im-*
8 *plementation of the program. An institution of higher*
9 *education may also include teacher leaders to partici-*
10 *pate in developing the pedagogical content of the pro-*
11 *gram and to supervise students participating in the*
12 *program in their field teaching experiences. No insti-*
13 *tution of higher education shall be eligible for an*
14 *award unless faculty from the institution’s mathe-*
15 *matics, science, or engineering departments are active*
16 *participants in the program.”;*

17 (10) *in subsection (b)(1)(A)—*

18 (A) *by striking “scholarship or stipend”;*

19 (B) *by inserting “and summer internships”*
20 *after “number of scholarships”; and*

21 (C) *by inserting “the type of activities pro-*
22 *posed for the recruitment of students to the pro-*
23 *gram,” after “intends to award,”;*

24 (11) *in subsection (b)(1)(B)—*

1 (A) by striking “scholarship or stipend”;
2 and

3 (B) by striking “; and” and inserting “,
4 which may include a description of any existing
5 programs at the applicant’s institution that are
6 targeted to the education of mathematics and
7 science teachers and the number of teachers grad-
8 uated annually from such programs;”;

9 (12) in subsection (b)(1), by striking subpara-
10 graph (C) and inserting the following:

11 “(C) a description of the academic courses
12 and field teaching experiences required under
13 subsection (a)(3)(A)(ii) and (B)(ii), including—

14 “(i) a description of the undergraduate
15 program that will enable a student to grad-
16 uate within 5 years with a major in mathe-
17 matics, science, or engineering and to ob-
18 tain teacher certification or licensing;

19 “(ii) a description of the field teaching
20 experiences proposed; and

21 “(iii) evidence of agreements between
22 the applicant and the schools or school dis-
23 tricts that are identified as the locations at
24 which field teaching experiences will occur;

1 “(D) a description of the programs required
2 under subsection (a)(3)(A)(iii) and (B)(iii), in-
3 cluding activities to assist new teachers in ful-
4 filling their service requirements under this sec-
5 tion; and

6 “(E) an identification of the applicant’s
7 mathematics, science, or engineering faculty and
8 its education faculty who will carry out the de-
9 velopment and implementation of the program
10 as required under subsection (a)(4).”;

11 (13) in subsection (b)(2)—

12 (A) by redesignating subparagraphs (B),
13 (C), (D), and (E) as subparagraphs (C), (D),
14 (E) and (F), respectively;

15 (B) by inserting after subparagraph (A) a
16 new subparagraph as follows:

17 “(B) the extent to which the applicant’s
18 mathematics, science, or engineering faculty and
19 its education faculty have worked or will work
20 collaboratively to design new or revised curricula
21 that recognizes the specialized pedagogy required
22 to teach mathematics, science, and technology ef-
23 fectively in elementary and secondary schools;”;
24 and

1 (C) by amending subparagraph (F), as so
2 redesignated by subparagraph (A) of this para-
3 graph, to read as follows:

4 “(F) the ability of the applicant to recruit
5 students who are individuals identified in sec-
6 tion 33 or 34 of the Science and Engineering
7 Equal Opportunities Act (42 U.S.C. 1885a or
8 1885b).”;

9 (14) in subsection (c)(1)(B), by striking “2
10 years” and inserting “3 years”;

11 (15) in subsection (c)(3)—

12 (A) by striking “\$7,500” and inserting
13 “\$10,000”; and

14 (B) by striking “2 years of scholarship sup-
15 port” and inserting “3 years of scholarship sup-
16 port, unless the Director establishes a policy by
17 which part-time students may receive additional
18 years of support”;

19 (16) in subsection (c)(4)—

20 (A) by striking “6 years” and inserting “8
21 years”;

22 (B) by inserting “, with a maximum service
23 requirement of 6 years” after “was received”;
24 and

1 (C) by striking “Service required under this
2 paragraph shall be performed in a high-need
3 local educational agency.”;

4 (17) in subsection (c), by adding at the end a
5 new paragraph as follows:

6 “(5) *EXCEPTION.*—The period of service obliga-
7 tion under paragraph (4) is reduced by 1 year for
8 scholarship recipients whose service is performed in a
9 high-need local educational agency.”;

10 (18) in subsection (d)(1), by striking “to receive
11 certification or licensing to teach” and inserting “es-
12 tablished under subsection (a)(3)(B)”;

13 (19) in subsection (d)(2), by inserting “and pro-
14 fessional achievement” after “academic merit”;

15 (20) in subsection (d)(3), by striking “1 year”
16 and inserting “16 months”;

17 (21) in subsection (d)(4)—

18 (A) by striking “6 years” and inserting “4
19 years”; and

20 (B) by striking “for each year a stipend
21 was received”;

22 (22) in subsection (g)(2)(A)—

23 (A) by striking “Treasurer of the United
24 States,” and inserting “Treasurer of the United
25 States.”; and

1 (B) by striking “multiplied by 2.”;

2 (23) in subsection (i)(3), by inserting “or had a
3 career in” after “is working in”;

4 (24) in subsection (i)—

5 (A) by striking “and” at the end of para-
6 graph (4);

7 (B) by striking the period at the end of
8 paragraph (5) and inserting “; and”; and

9 (C) by adding at the end the following:

10 “(6) the term ‘teacher leader’ means a mathe-
11 matics or science teacher who works to improve the
12 instruction of mathematics or science in kindergarten
13 through grade 12 through—

14 “(A) participating in the development or
15 revision of science, mathematics, engineering, or
16 technology curricula;

17 “(B) serving as a mentor to mathematics or
18 science teachers;

19 “(C) coordinating and assisting teachers in
20 the use of hands-on inquiry materials, equip-
21 ment, and supplies, and when appropriate, su-
22 pervising acquisition and repair of such mate-
23 rials;

24 “(D) providing in-classroom teaching assist-
25 ance to mathematics or science teachers; and

1 “(E) providing professional development,
2 for the purposes of training other teacher leaders,
3 to mathematics and science teachers.”; and
4 (25) by adding at the end the following:

5 “(j) *MATHEMATICS AND SCIENCE SCHOLARSHIP GIFT*
6 *FUND.*—In accordance with section 11(f) of the National
7 *Science Foundation Act of 1950*, the Director is authorized
8 *to accept donations from the private sector to support schol-*
9 *arships, stipends, or internships associated with programs*
10 *under this section.*

11 “(k) *ASSESSMENT OF TEACHER SERVICE AND RETEN-*
12 *TION.*—Not later than 4 years after the date of enactment
13 *of this subsection*, the Director shall transmit to Congress
14 *a report on the effectiveness of the program carried out*
15 *under this section. The report shall include the proportion*
16 *of individuals receiving scholarships or stipends under the*
17 *program who —*

18 “(1) *fulfill their service obligation required*
19 *under this section in a high-need local educational*
20 *agency;*

21 “(2) *elect to fulfill their service obligation in a*
22 *high-need local educational agency but fail to com-*
23 *plete it, as defined in subsection (g);*

24 “(3) *remain in the teaching profession beyond*
25 *their service obligation; and*

1 “(4) remain in the teaching profession in a high-
2 need local educational agency beyond their service ob-
3 ligation.

4 “(l) *AUTHORIZATION OF APPROPRIATIONS.*—There are
5 authorized to be appropriated to the Director for the Robert
6 Noyce Teacher Scholarship Program—

7 “(1) \$70,000,000 for fiscal year 2008;

8 “(2) \$101,000,000 for fiscal year 2009;

9 “(3) \$133,000,000 for fiscal year 2010;

10 “(4) \$164,000,000 for fiscal year 2011; and

11 “(5) \$196,000,000 for fiscal year 2012.”.

12 (b) *CONFORMING AMENDMENT.*—Section 8(6) of the
13 National Science Foundation Authorization Act of 2002 is
14 amended—

15 (1) in the paragraph heading by inserting
16 “TEACHER” after “NOYCE”; and

17 (2) by inserting “Teacher” after “Noyce”.

18 **TITLE II—MATHEMATICS AND**
19 **SCIENCE EDUCATION IM-**
20 **PROVEMENT**

21 **SEC. 201. MATHEMATICS AND SCIENCE EDUCATION PART-**
22 **NEERSHIPS AMENDMENTS.**

23 Section 9 of the National Science Foundation Author-
24 ization Act of 2002 (42 U.S.C. 1862n) is amended—

25 (1) in subsection (a)(2)—

1 (A) by striking “(A)”;

2 (B) by striking subparagraph (B);

3 (C) by inserting “, through 1 or more of its
4 departments in science, mathematics, or engi-
5 neering,” after “institution of higher education”;
6 and

7 (D) by striking “a State educational agen-
8 cy” and inserting “education faculty from the
9 participating institution or institutions of high-
10 er education, a State educational agency,”;

11 (2) in subsection (a)(3)(B)—

12 (A) by inserting “content-specific” before
13 “professional development programs”;

14 (B) by inserting “which are” before “de-
15 signed”; and

16 (C) by inserting “and which may include
17 teacher training activities to prepare mathe-
18 matics and science teachers to teach challenging
19 mathematics, science, and technology college-pre-
20 paratory courses, including Advanced Placement
21 and International Baccalaureate courses” after
22 “and science teachers”;

23 (3) in subsection (a)(3)(C)—

24 (A) by inserting “and laboratory experi-
25 ences” after “technology”; and

1 (B) by inserting “and laboratory” after
2 “provide technical”;

3 (4) in subsection (a)(3)(I) by inserting “includ-
4 ing model induction programs for teachers in their
5 first 2 years of teaching,” after “and science,”;

6 (5) in subsection (a)(3)(K) by striking “devel-
7 oping and offering mathematics or science enrichment
8 programs for students, including after-school and
9 summer programs;” and inserting “developing edu-
10 cational programs and materials and conducting
11 mathematics, science, and technology enrichment pro-
12 grams for students, including after-school programs
13 and summer camps for students described in sub-
14 section (b)(2)(G);”;

15 (6) in subsection (a) by inserting at the end the
16 following:

17 “(8) *MASTER’S DEGREE PROGRAMS.*—Activities
18 carried out in accordance with paragraph (3)(B)
19 shall include the development and offering of master’s
20 degree programs for in-service mathematics and
21 science teachers that will strengthen their subject area
22 knowledge and pedagogical skills, as described in sec-
23 tion 203 of the Act enacting this paragraph. Grants
24 provided under this section may be used to develop
25 and implement courses of instruction for the master’s

1 *degree programs, which may involve online learning,*
2 *and develop related educational materials.*

3 “(9) *MENTORS FOR TEACHERS AND STUDENTS*
4 *OF CHALLENGING COURSES.—Partnerships carrying*
5 *out activities to prepare mathematics and science*
6 *teachers to teach challenging mathematics, science,*
7 *and technology college-preparatory courses, including*
8 *Advanced Placement and International Baccalaureate*
9 *courses, in accordance with paragraph (3)(B) shall*
10 *encourage companies employing scientists, mathe-*
11 *maticians, or engineers to provide mentors to teachers*
12 *and students and provide for the coordination of such*
13 *mentoring activities.*

14 “(10) *INVENTIVENESS.—Activities carried out in*
15 *accordance with paragraph (3)(H) may include the*
16 *development and dissemination of curriculum tools*
17 *that will help foster inventiveness and innovation.”;*

18 (7) *in subsection (b)(2) by redesignating sub-*
19 *paragraphs (E) and (F) as subparagraphs (F) and*
20 *(G), respectively, and inserting after subparagraph*
21 *(D) the following new subparagraph:*

22 “(E) *the extent to which the evaluation de-*
23 *scribed in paragraph (1)(E) will be independent*
24 *and based on objective measures;”;*

1 (8) *in subsection (b) by inserting at the end the*
2 *following:*

3 “(4) *MINIMUM AND MAXIMUM GRANT SIZE.—A*
4 *grant awarded under this section shall be not less*
5 *than \$75,000 or greater than \$2,000,000 for any fis-*
6 *cal year.”;*

7 (9) *in subsection (c)—*

8 (A) *by striking paragraph (2);*

9 (B) *by redesignating paragraphs (3), (4),*
10 *and (5) as paragraphs (4), (5), and (6), respec-*
11 *tively; and*

12 (C) *by inserting after paragraph (1) the fol-*
13 *lowing new paragraphs:*

14 “(2) *REPORT ON MODEL PROJECTS.—The Direc-*
15 *tor shall determine which completed projects funded*
16 *through the program under this section should be seen*
17 *as models to be replicated on a more expansive basis*
18 *at the State or national levels. Not later than 1 year*
19 *after the date of enactment of this paragraph, the Di-*
20 *rector shall transmit a report describing the results of*
21 *this study to the Committee on Science and Tech-*
22 *nology and the Committee on Education and Labor*
23 *of the House of Representatives and to the Committee*
24 *on Commerce, Science, and Transportation and the*

1 *Committee on Health, Education, Labor, and Pen-*
2 *sions of the Senate.*

3 “(3) *REPORT ON EVALUATIONS.*—Not later than
4 *4 years after the date of enactment of this paragraph,*
5 *the Director shall transmit a report summarizing the*
6 *evaluations required under subsection (b)(1)(E) of*
7 *grants received under this program and describing*
8 *any changes to the program recommended as a result*
9 *of these evaluations to the Committee on Science and*
10 *Technology and the Committee on Education and*
11 *Labor of the House of Representatives and to the*
12 *Committee on Commerce, Science, and Transpor-*
13 *tation and the Committee on Health, Education,*
14 *Labor, and Pensions of the Senate. Such report shall*
15 *be made widely available to the public.”; and*

16 (10) *by adding at the end the following new sub-*
17 *section:*

18 “(d) *DEFINITIONS.*—*In this section—*

19 “(1) *the term ‘mathematics and science teacher’*
20 *means a mathematics, science, or technology teacher*
21 *at the elementary school or secondary school level; and*

22 “(2) *the term ‘science’, in the context of elemen-*
23 *tary and secondary education, includes technology*
24 *and pre-engineering.”.*

1 **SEC. 202. TEACHER INSTITUTES.**

2 (a) NATIONAL SCIENCE FOUNDATION INSTITUTES.—

3 (1) IN GENERAL.—*The Director shall establish a*
4 *grant program to provide for summer or academic*
5 *year teacher institutes or workshops authorized by*
6 *section 9(a)(3)(B) of the National Science Foundation*
7 *Authorization Act of 2002 (42 U.S.C. 1862n(a)(3)(B))*
8 *and shall allow grantees under the Teacher Institutes*
9 *for the 21st Century program to operate 1 to 2 week*
10 *summer teacher institutes with the goal of reaching*
11 *the maximum number of in-service mathematics and*
12 *science teachers, particularly elementary and middle*
13 *school teachers, to improve their content knowledge*
14 *and pedagogical skills.*

15 (2) PREPARATION TO TEACH CHALLENGING
16 COURSES.—*The Director shall ensure that activities*
17 *supported for awards under paragraph (1) include*
18 *the development and implementation of teacher train-*
19 *ing activities to prepare mathematics and science*
20 *teachers to teach challenging mathematics, science,*
21 *and technology college-preparatory courses, including*
22 *Advanced Placement and International Baccalaureate*
23 *courses.*

24 (3) AWARDS.—*In awarding grants under this*
25 *section, the Director shall give priority to applica-*
26 *tions that propose programs that will attract mathe-*

1 *matics and science teachers from local educational*
2 *agencies that—*

3 *(A) are receiving grants under title I of the*
4 *Elementary and Secondary Education Act of*
5 *1965 (20 U.S.C. 6301 et seq) as a result of hav-*
6 *ing within their jurisdictions concentrations of*
7 *children from low income families; and*

8 *(B) are experiencing a shortage of highly*
9 *qualified teachers, as defined in section 9101 of*
10 *the Elementary and Secondary Education Act of*
11 *1965 (20 U.S.C. 7801), in the fields of science,*
12 *mathematics, or technology.*

13 *(4) AUTHORIZATION OF APPROPRIATIONS.—*
14 *There are authorized to be appropriated to the Na-*
15 *tional Science Foundation for the purposes of this sec-*
16 *tion, \$32,000,000 for fiscal year 2008, \$35,200,000 for*
17 *fiscal year 2009, \$38,700,000 for fiscal year 2010,*
18 *\$42,600,000 for fiscal year 2011, and \$46,800,000 for*
19 *fiscal year 2012.*

20 *(b) LABORATORY SCIENCE TEACHER PROFESSIONAL*
21 *DEVELOPMENT.—There are authorized to be appropriated*
22 *to the Secretary of Energy for the Laboratory Science*
23 *Teacher Professional Development program, \$3,000,000 for*
24 *fiscal year 2008, \$8,000,000 for fiscal year 2009,*

1 \$10,000,000 for fiscal year 2010, \$10,000,000 for fiscal year
2 2011, and \$10,000,000 for fiscal year 2012.

3 **SEC. 203. GRADUATE DEGREE PROGRAM.**

4 (a) *IN GENERAL.*—The Director shall ensure that mas-
5 ter's degree programs for in-service mathematics and
6 science teachers that will strengthen their subject area
7 knowledge and pedagogical skills are instituted in accord-
8 ance with section 9(a)(8) of the National Science Founda-
9 tion Authorization Act of 2002 (42 U.S.C. 1862n(a)(8)).
10 The degree programs shall be designed for current teachers,
11 who will enroll as part-time students, and to allow partici-
12 pants to obtain master's degrees within a period of 3 years.

13 (b) *DISTRIBUTION OF AWARDS.*—The Director shall,
14 in awarding grants to carry out subsection (a), consider
15 the distribution of awards among institutions of higher edu-
16 cation of different sizes and geographic locations.

17 (c) *PROGRAM ACTIVITIES.*—Activities supported
18 through master's degree programs established under sub-
19 section (a) may include—

20 (1) development of courses of instruction and re-
21 lated educational materials;

22 (2) stipends to defray the cost of attendance for
23 students in the degree program; and

1 (3) *acquisition of computer and networking*
2 *equipment needed for online instruction under the de-*
3 *gree program.*

4 (d) *AUTHORIZATION OF APPROPRIATIONS.—There are*
5 *authorized to be appropriated to the National Science*
6 *Foundation for the purposes of this section \$46,000,000 for*
7 *fiscal year 2008, \$50,600,000 for fiscal year 2009,*
8 *\$55,700,000 for fiscal year 2010, \$61,200,000 for fiscal year*
9 *2011, and \$67,300,000 for fiscal year 2012.*

10 **SEC. 204. CURRICULAR MATERIALS.**

11 *The Director, in consultation with the Secretary of*
12 *Education, shall convene a national panel of experts on*
13 *mathematics and science education to identify and collect*
14 *K–12 mathematics, science, and technology teaching mate-*
15 *rials that have been demonstrated to be effective and to rec-*
16 *ommend the development of new materials in areas where*
17 *effective materials do not exist. The Director and Secretary*
18 *shall develop ways to disseminate effective materials and*
19 *support efforts to develop new materials, in accordance with*
20 *the recommendations of the national panel. Recommenda-*
21 *tions made under this section shall not be considered a*
22 *mandate of specific K–12 curricula.*

1 **SEC. 205. SCIENCE, TECHNOLOGY, ENGINEERING, AND**
2 **MATHEMATICS TALENT EXPANSION PRO-**
3 **GRAM.**

4 (a) *AMENDMENTS.*—Section 8(7) of the National
5 Science Foundation Authorization Act of 2002 is amend-
6 ed—

7 (1) in subparagraph (A) by striking “competi-
8 tive, merit-based” and all that follows through “in re-
9 cent years.” and inserting “competitive, merit-re-
10 viewed multiyear grants for eligible applicants to im-
11 prove undergraduate education in science, mathe-
12 matics, engineering, and technology through—

13 “(i) the creation of programs to increase the
14 number of students studying toward and com-
15 pleting associate’s or bachelor’s degrees in
16 science, technology, engineering, and mathe-
17 matics, particularly in fields that have faced de-
18 clining enrollment in recent years; and

19 “(ii) the creation of centers (in this para-
20 graph referred to as ‘Centers’) to develop under-
21 graduate curriculum, teaching methods for un-
22 dergraduate courses, and methods to better train
23 professors and teaching assistants who teach un-
24 dergraduate courses to increase the number of
25 students completing undergraduate courses in
26 science, technology, engineering, and mathe-

1 *matics, including the number of nonmajors, and*
2 *to improve student academic achievement in*
3 *those courses.*

4 *Grants made under clause (ii) shall be awarded joint-*
5 *ly through the Education and Human Resources Di-*
6 *rectorate and at least 1 research directorate of the*
7 *Foundation.”;*

8 *(2) by amending subparagraph (B) to read as*
9 *follows:*

10 *“(B) In selecting projects under subparagraph*
11 *(A)(i), the Director shall strive to increase the number*
12 *of students studying toward and completing bacca-*
13 *laureate degrees, concentrations, or certificates in*
14 *science, mathematics, engineering, or technology who*
15 *are—*

16 *“(i) individuals identified in section 33 or*
17 *34 of the Science and Engineering Equal Oppor-*
18 *tunities Act (42 U.S.C. 1885a or 1885b); or*

19 *“(ii) graduates of a secondary school that is*
20 *administered by a local educational agency that*
21 *is receiving grants under title I of the Elemen-*
22 *tary and Secondary Education Act of 1965 (20*
23 *U.S.C. 6301 et seq) as a result of having within*
24 *its jurisdiction concentrations of children from*
25 *low income families.”;*

1 (3) *in subparagraph (C)—*

2 (A) *by inserting “(i)” before “The types of”;*

3 (B) *by redesignating clauses (i) through (vi)*

4 *as subclauses (I) through (VI), respectively;*

5 (C) *by striking “under this paragraph” and*

6 *inserting “under subparagraph (A)(i)”;* and

7 (D) *by adding at the end the following new*

8 *clause:*

9 “(ii) *The types of activities the Foundation may*
10 *support under subparagraph (A)(i) include—*

11 “(I) *creating model curricula and labora-*
12 *tory programs;*

13 “(II) *developing and demonstrating re-*
14 *search-based instructional methods and tech-*
15 *nologies;*

16 “(III) *developing methods to train graduate*
17 *students and faculty to be more effective teachers*
18 *of undergraduates;*

19 “(IV) *conducting programs to disseminate*
20 *curricula, instructional methods, or training*
21 *methods to faculty at the grantee institutions*
22 *and at other institutions;*

23 “(V) *conducting assessments of the effective-*
24 *ness of the Center at accomplishing the goals de-*
25 *scribed in subparagraph (A)(i); and*

1 “(VI) conducting any other activities the
2 Director determines will accomplish the goals de-
3 scribed in subparagraph (A)(ii).”;

4 (4) in subparagraph (D)(i), by striking “under
5 this paragraph” and inserting “under subparagraph
6 (A)(i)”;

7 (5) in subparagraph (D)(ii), by striking “under
8 this paragraph” and inserting “under subparagraph
9 (A)(i)”;

10 (6) after subparagraph (D)(iii), by adding at the
11 end the following new clause:

12 “(iv) A grant under subparagraph (A)(ii) shall
13 be awarded for 5 years, and the Director may extend
14 such a grant for up to 2 additional 3 year periods.”;

15 (7) in subparagraph (E), by striking “under this
16 paragraph” both places it appears and inserting
17 “under subparagraph (A)(i)”;

18 (8) by redesignating subparagraph (F) as sub-
19 paragraph (J); and

20 (9) by inserting after subparagraph (E) the fol-
21 lowing new subparagraphs:

22 “(F) Grants awarded under subparagraph
23 (A)(ii) shall be carried out by a department or de-
24 partments of science, mathematics, or engineering at
25 institutions of higher education (or a consortia there-

1 of), which may partner with education faculty. Appli-
2 cations for awards under subparagraph (A)(ii) shall
3 be submitted to the Director at such time, in such
4 manner, and containing such information as the Di-
5 rector may require. At a minimum, the application
6 shall include—

7 “(i) a description of the activities to be car-
8 ried out by the Center;

9 “(ii) a plan for disseminating programs re-
10 lated to the activities carried out by the Center
11 to faculty at the grantee institution and at other
12 institutions;

13 “(iii) an estimate of the number of faculty,
14 graduate students (if any), and undergraduate
15 students who will be affected by the activities
16 carried out by the Center; and

17 “(iv) a plan for assessing the effectiveness of
18 the Center at accomplishing the goals described
19 in subparagraph (A)(ii).

20 “(G) In evaluating the applications submitted
21 under subparagraph (F), the Director shall consider,
22 at a minimum—

23 “(i) the ability of the applicant to effec-
24 tively carry out the proposed activities, includ-

1 *ing the dissemination activities described in sub-*
2 *paragraph (C)(ii)(IV); and*

3 *“(i) the extent to which the faculty, staff,*
4 *and administrators of the applicant institution*
5 *are committed to improving undergraduate*
6 *science, mathematics, and engineering education.*

7 *“(H) In awarding grants under subparagraph*
8 *(A)(ii), the Director shall endeavor to ensure that a*
9 *wide variety of science, technology, engineering, and*
10 *mathematics fields and types of institutions of higher*
11 *education, including 2-year colleges and minority-*
12 *serving institutions, are covered, and that—*

13 *“(i) at least 1 Center is housed at a Doc-*
14 *toral/Research University as defined by the Car-*
15 *negie Foundation for the Advancement of Teach-*
16 *ing; and*

17 *“(ii) at least 1 Center is focused on improv-*
18 *ing undergraduate education in an interdiscipli-*
19 *nary area.*

20 *“(I) The Director shall convene an annual meet-*
21 *ing of the awardees under this paragraph to foster*
22 *collaboration and to disseminate the results of the*
23 *Centers and the other activities funded under this*
24 *paragraph.”.*

1 (b) *REPORT ON DATA COLLECTION.*—Not later than
2 180 days after the date of enactment of this Act, the Direc-
3 tor shall transmit to Congress a report on how the Director
4 is determining whether current grant recipients in the
5 Science, Technology, Engineering, and Mathematics Talent
6 Expansion Program are making satisfactory progress as re-
7 quired by section 8(7)(D)(ii) of the National Science Foun-
8 dation Authorization Act of 2002 and what funding actions
9 have been taken as a result of the Director’s determinations.

10 (c) *AUTHORIZATION OF APPROPRIATIONS.*—There are
11 authorized to be appropriated to the National Science
12 Foundation for the program described in paragraph (7) of
13 section 8 of the National Science Foundation Authorization
14 Act of 2002—

15 (1) \$44,000,000 for fiscal year 2008, of which
16 \$4,000,000 shall be for the grants described in sub-
17 paragraph (A)(ii) of that paragraph;

18 (2) \$55,000,000 for fiscal year 2009, of which
19 \$10,000,000 shall be for the grants described in sub-
20 paragraph (A)(ii) of that paragraph;

21 (3) \$60,000,000 for fiscal year 2010, of which
22 \$10,000,000 shall be for the grants described in sub-
23 paragraph (A)(ii) of that paragraph;

1 (4) \$60,000,000 for fiscal year 2011, of which
2 \$10,000,000 shall be for the grants described in sub-
3 paragraph (A)(ii) of that paragraph; and

4 (5) \$60,000,000 for fiscal year 2012, of which
5 \$10,000,000 shall be for the grants described in sub-
6 paragraph (A)(ii) of that paragraph.

7 **SEC. 206. HIGH-NEED LOCAL EDUCATIONAL AGENCY DEFINITION.**
8

9 Section 4(8) of the National Science Foundation Au-
10 thorization Act of 2002 (42 U.S.C. 1862n note) is amended
11 to read as follows:

12 “(8) *HIGH-NEED LOCAL EDUCATIONAL AGEN-*
13 *CY.—The term ‘high-need local educational agency’*
14 *means a local educational agency that—*

15 “(A) *is receiving grants under title I of the*
16 *Elementary and Secondary Education Act of*
17 *1965 (20 U.S.C. 6301 et seq) as a result of hav-*
18 *ing within its jurisdiction concentrations of chil-*
19 *dren from low income families; and*

20 “(B) *is experiencing a shortage of highly*
21 *qualified teachers, as defined in section 9101 of*
22 *the Elementary and Secondary Education Act of*
23 *1965 (20 U.S.C. 7801), in the fields of science,*
24 *mathematics, or engineering.”.*

1 **SEC. 207. TEACHER LEADERS.**

2 *The National Science Foundation Authorization Act*
3 *of 2002 is amended—*

4 (1) *in section 4(11)—*

5 (A) *by striking “MASTER TEACHER” and in-*
6 *serting “TEACHER LEADER”;*

7 (B) *by striking “master teacher” and in-*
8 *serting “teacher leader”; and*

9 (C) *in subparagraph (E), by striking “mas-*
10 *ter teachers” and inserting “teacher leaders”;*
11 *and*

12 (2) *in section 9—*

13 (A) *in subsection (a)(3)(E), by striking*
14 *“master teachers” and inserting “teacher lead-*
15 *ers”; and*

16 (B) *in subsection (a)(4)—*

17 (i) *by striking “MASTER TEACHERS”*
18 *and inserting “TEACHER LEADERS”; and*

19 (ii) *by striking “master teachers” each*
20 *place it appears and inserting “teacher*
21 *leaders”.*

22 **SEC. 208. LABORATORY SCIENCE PILOT PROGRAM.**

23 (a) *FINDINGS.—The Congress finds the following:*

24 (1) *To remain competitive in science and tech-*
25 *nology in the global economy, the United States must*
26 *increase the number of students graduating from high*

1 *school prepared to pursue postsecondary education in*
2 *science, technology, engineering, and mathematics.*

3 (2) *There is broad agreement in the scientific*
4 *community that learning science requires direct in-*
5 *volvement by students in scientific inquiry and that*
6 *laboratory experience is so integral to the nature of*
7 *science that it must be included in every science pro-*
8 *gram for every science student.*

9 (3) *In America's Lab Report, the National Re-*
10 *search Council concluded that the current quality of*
11 *laboratory experiences is poor for most students and*
12 *that educators and researchers do not agree on how to*
13 *define high school science laboratories or on their pur-*
14 *pose, hampering the accumulation of research on how*
15 *to improve labs.*

16 (4) *The National Research Council found that*
17 *schools with higher concentrations of non-Asian mi-*
18 *norities and schools with higher concentrations of*
19 *poor students are less likely to have adequate labora-*
20 *tory facilities than other schools.*

21 (5) *The Government Accountability Office re-*
22 *ported that 49.1 percent of schools where the minority*
23 *student population is greater than 50.5 percent re-*
24 *ported not meeting functional requirements for lab-*
25 *oratory science well or at all.*

1 (6) 40 percent of those college students who left
2 the science fields reported some problems related to
3 high school science preparation, including lack of lab-
4 oratory experience and no introduction to theoretical
5 or to analytical modes of thought.

6 (7) It is in the national interest for the Federal
7 Government to invest in research and demonstration
8 projects to improve the teaching of laboratory science
9 in the Nation's high schools.

10 (b) GRANT PROGRAM.—Section 8(8) of the National
11 Science Foundation Authorization Act of 2002 is amend-
12 ed—

13 (1) by redesignating subparagraphs (A) through
14 (F) as clauses (i) through (vi), respectively;

15 (2) by inserting “(A)” before “A program of
16 competitive”; and

17 (3) by inserting at the end the following new
18 subparagraphs:

19 “(B) In accordance with subparagraph (A)(v),
20 the Director shall establish a research pilot program
21 designated as ‘Partnerships for Access to Laboratory
22 Science’ to award grants to partnerships to improve
23 laboratories and provide instrumentation as part of a
24 comprehensive program to enhance the quality of
25 mathematics, science, engineering, and technology in-

1 *struction at the secondary school level. Grants under*
2 *this subparagraph may be used for—*

3 *“(i) purchase, rental, or leasing of equip-*
4 *ment, instrumentation, and other scientific edu-*
5 *cational materials;*

6 *“(ii) maintenance, renovation, and im-*
7 *provement of laboratory facilities;*

8 *“(iii) development of instructional pro-*
9 *grams designed to integrate the laboratory expe-*
10 *rience with classroom instruction and to be con-*
11 *sistent with State mathematics and science aca-*
12 *demic achievement standards;*

13 *“(iv) training in laboratory safety for*
14 *school personnel;*

15 *“(v) design and implementation of hands-on*
16 *laboratory experiences to encourage the interest*
17 *of individuals identified in section 33 or 34 of*
18 *the Science and Engineering Equal Opportuni-*
19 *ties Act (42 U.S.C. 1885a or 1885b) in mathe-*
20 *matics, science, engineering, and technology and*
21 *help prepare such individuals to pursue postsec-*
22 *ondary studies in these fields; and*

23 *“(vi) assessment of the activities funded*
24 *under this subparagraph.*

1 “(C) Grants may be made under subparagraph
2 (B) only to a partnership—

3 “(i) for a project that includes significant
4 teacher training and professional development
5 components; or

6 “(ii) that establishes that appropriate teach-
7 er training and professional development is
8 being addressed, or has been addressed, through
9 other means.

10 “(D) Grants awarded under subparagraph (B)
11 shall be to a partnership that—

12 “(i) includes an institution of higher edu-
13 cation or a community college;

14 “(ii) includes a high-need local educational
15 agency;

16 “(iii) includes a business or eligible non-
17 profit organization; and

18 “(iv) may include a State educational agen-
19 cy, other public agency, National Laboratory, or
20 community-based organization.

21 “(E) The Federal share of the cost of activities
22 carried out using amounts from a grant under sub-
23 paragraph (B) shall not exceed 50 percent.

1 “(F) *The Director shall require grant recipients*
2 *to submit a report to the Director on the results of the*
3 *project supported by the grant.*”.

4 (c) *REPORT.—The Director shall evaluate the effective-*
5 *ness of activities carried out under the research pilot*
6 *projects funded by the grant program established pursuant*
7 *to the amendment made by subsection (b) in improving stu-*
8 *dent performance in mathematics, science, engineering, and*
9 *technology. A report documenting the results of that evalua-*
10 *tion shall be submitted to the Committee on Science and*
11 *Technology of the House of Representatives and the Com-*
12 *mittees on Commerce, Science, and Transportation and on*
13 *Health, Education, Labor, and Pensions of the Senate not*
14 *later than 5 years after the date of enactment of this Act.*
15 *The report shall identify best practices and materials devel-*
16 *oped and demonstrated by grant awardees.*

17 (d) *AUTHORIZATION OF APPROPRIATIONS.—There are*
18 *authorized to be appropriated to the National Science*
19 *Foundation to carry out this section and the amendments*
20 *made by this section \$5,000,000 for fiscal year 2008, and*
21 *such sums as may be necessary for each of the 3 succeeding*
22 *fiscal years.*

1 **SEC. 209. STUDY ON LABORATORY EQUIPMENT DONATIONS**
2 **FOR SCHOOLS.**

3 *Not later than 2 years after the date of enactment of*
4 *this Act, the Director shall transmit a report to the Congress*
5 *examining the extent to which institutions of higher edu-*
6 *cation are donating used laboratory equipment to elemen-*
7 *tary and secondary schools. The Director, in consultation*
8 *with the Secretary of Education, shall survey institutions*
9 *of higher education to determine—*

10 *(1) how often, how much, and what type of*
11 *equipment is donated;*

12 *(2) what criteria or guidelines the institutions*
13 *are using to determine what types of equipment can*
14 *be donated, what condition the equipment should be*
15 *in, and which schools receive the equipment;*

16 *(3) whether the institutions provide any support*
17 *to, or follow-up with the schools; and*

18 *(4) how appropriate donations can be encour-*
19 *aged.*

Union Calendar No. 50

110TH CONGRESS
1ST Session

H. R. 362

[Report No. 110-85]

A BILL

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

APRIL 16, 2007

Reported with an amendment, committed to the Committee of the Whole House on the State of the Union, and ordered to be printed