107TH CONGRESS
1ST SESSION

H. R. 1858

IN THE SENATE OF THE UNITED STATES

JULY 31, 2001

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

AN ACT

To make improvements in mathematics and science education, 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 ''National Mathematics and Science Partnerships Act''.

SEC. 2. FINDINGS.

The Congress finds the following:

(1) 12 years ago the President of the United States convened the Nation's Governors to establish common goals for the improvement of elementary and secondary education.

(2) Among the National Education Goals established was the goal that by the year 2000 United States students would be first in the world in mathematics and science achievement.

(3) Despite these goals, 8th graders in the United States showed just average performance in mathematics and science in the Third International Mathematics and Science Study-Repeat and demonstrated lower relative performance than the cohort of 4th graders 4 years earlier.

(4) The United States must redouble its efforts to provide all of its students with a world-class education in mathematics, science, engineering, and technology.

(5) The American economy has become the most robust in the world, not through state planning and government intervention, but through the hard

work and innovation of its citizens. This success is founded in our constitutional tradition of respect for individual liberty to pursue personal career objectives.

SEC. 3. DEFINITIONS.

In this Act—

(1) the term ''Director'' means the Director of the National Science Foundation;

(2) the term ''institution of higher education'' has the meaning given such term by section 101 of the Higher Education Act of 1965 (20 U.S.C. 1001);

(3) the term ''eligible nonprofit organization'' means a nonprofit research institute or a nonprofit professional association with demonstrated experience delivering mathematics or science education as determined by the Director;

(4) the term ''local educational agency'' has the meaning given such term by section 14101(19) of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 8801(19));

(5) the term ''State educational agency'' has the meaning given such term by section 14101(29) of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 8801(29));

(6) the term ''elementary school'' has the meaning given that term by section 14101(14) of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 8801(14)); and

(7) the term ''secondary school'' has the meaning given that term by section 14101(26) of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 8801(26)).

SEC. 4. DUPLICATION OF PROGRAMS.

(a) IN GENERAL.—The Director of the National Science Foundation shall review the education programs of the National Science Foundation that are in operation as of the date of enactment of this Act to determine whether any of such programs duplicate the programs authorized in this Act.

(b) IMPLEMENTATION.—(1) As programs authorized in this Act are implemented, the Director shall terminate any existing duplicative program or merge the duplicative program into a program authorized in this Act.

(2) The Director shall not establish any new program that duplicates a program that has been implemented pursuant to this Act.

(c) REPORT.—(1) The Director of the Office of Science and Technology Policy shall review the education

programs of the National Science Foundation to ensure compliance with the provisions of this section.

(2) Not later than one year after the date of the enactment of this Act, the Director of the Office of Science and Technology Policy shall complete a report on the review carried out under this subsection and shall submit the report to the Committee on Science, the Committee on Education and the Workforce, and the Committee on Appropriations of the House of Representatives.

(3) Beginning one year after the date of enactment of this Act, the Director of the Office of Science and Technology Policy, shall, as part of the annual budget submission to Congress, submit an updated version of the report required by paragraph (2).

SEC. 5. MATCHING REQUIREMENTS.

The Director may establish matching fund requirements for any programs authorized by this Act except those established in title IV.

SEC. 6. COORDINATION.

In carrying out the activities authorized by this Act, the Director of the National Science Foundation shall consult and coordinate with the Secretary of Education to ensure close cooperation with programs authorized under the Elementary and Secondary Education Act of 1965 (Public Law 89–10).

TITLE I—MATHEMATICS AND SCIENCE EDUCATION PARTNERSHIPS

Subtitle A—Mathematics and Science Education Partnerships

SEC. 101. PROGRAM AUTHORIZED.

(a) IN GENERAL.—(1) The Director shall establish a program to award grants to institutions of higher education or eligible nonprofit organizations (or consortia thereof) to establish mathematics and science education partnership programs to improve the instruction of elementary and secondary science education.

(2) Grants shall be awarded under this section on a merit-reviewed competitive basis.

(b) PARTNERSHIPS.—(1) In order to be eligible to receive a grant under this section, an institution of higher education or eligible nonprofit organization (or consortium thereof) shall enter into a partnership with one or more local educational agencies that may also include a State educational agency or one or more businesses, or both.

(2) A participating institution of higher education shall include mathematics, science, or engineering departments in the programs carried out through a partnership under this subsection.

(c) USES OF FUNDS.—Grants awarded under this section shall be used for activities that draw upon the expertise of the partners to improve elementary or secondary education, or both, in mathematics or science, or both. Such activities may include—

(1) recruiting and preparing students for careers in elementary or secondary mathematics or science education;

(2) offering professional development programs, including summer or academic year institutes or workshops, designed to strengthen the capabilities of existing mathematics and science teachers;

(3) offering innovative programs that instruct teachers on using technology more effectively in teaching mathematics and science, including programs that recruit and train undergraduate and graduate students to provide technical support to teachers;

(4) developing distance learning programs for teachers or students, including developing courses, curricular materials and other resources for the in-service professional development of teachers that are made available to teachers through the Internet;

(5) offering teacher preparation and certification programs for professional mathematicians,

scientists, and engineers who wish to begin a career in teaching;

(6) developing assessment tools to measure student mastery of content and cognitive skills;

(7) developing or adapting elementary and secondary school curricular materials, aligned to State standards, that incorporate contemporary research on the science of learning;

(8) developing undergraduate mathematics and science courses for education majors;

(9) using mathematicians, scientists, and engineers employed by private businesses to help recruit and train mathematics and science teachers;

(10) developing a cadre of master teachers who will promote reform and improvement in schools;

(11) developing and offering mathematics or science enrichment programs for students, including after-school and summer programs;

(12) providing research opportunities in business or academia for students and teachers;

(13) bringing mathematicians, scientists, and engineers from business and academia into elementary and secondary school classrooms; and

(14) any other activities the Director determines will accomplish the goals of this section.

(d) SCIENCE ENRICHMENT PROGRAMS FOR GIRLS.—Activities carried out in accordance with subsections (c)(11) and (12) shall include elementary and secondary school programs to encourage the ongoing interest of girls in science, mathematics, engineering, and technology and to prepare girls to pursue undergraduate and graduate degrees and careers in science, mathematics, engineering, or technology. Funds made available through awards to partnerships for the purposes of this subsection may support programs for—

(1) encouraging girls to pursue studies in science, mathematics, engineering, and technology and to major in such fields in postsecondary education;

(2) tutoring girls in science, mathematics, engineering, and technology;

(3) providing mentors for girls in person and through the Internet to support such girls in pursuing studies in science, mathematics, engineering, and technology;

(4) educating the parents of girls about the difficulties faced by girls to maintain an interest and desire to achieve in science, mathematics, engineering, and technology, and enlisting the help of parents in overcoming these difficulties; and

(5) acquainting girls with careers in science, mathematics, engineering, and technology and encouraging girls to plan for careers in such fields.

(e) RESEARCH IN SECONDARY SCHOOLS.—Activities carried out in accordance with subsection (c)(11) may include support for research projects performed by students at secondary schools. Uses of funds made available through awards to partnerships for purposes of this subsection may include—

(1) training secondary school mathematics and science teachers in the design of research projects for students;

(2) establishing a system for students and teachers involved in research projects funded under this section to exchange information about their projects and research results; and

(3) assessing the educational value of the student research projects by such means as tracking the academic performance and choice of academic majors of students conducting research.

(f) STIPENDS.—Grants awarded under this section may be used to provide stipends for teachers or students participating in training or research activities that would not be part of their typical classroom activities.

SEC. 102. SELECTION PROCESS.

(a) APPLICATION.—An institution of higher education or an eligible nonprofit organization (or a consortium thereof) seeking funding under section 101 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—

(1) a description of the partnership and the role that each member will play in implementing the proposal;

(2) a description of each of the activities to be carried out, including—

(A) how such activities will be aligned with State and local standards and with other activities that promote student achievement in mathematics and science;

(B) how such activities will be based on a review of relevant research;

(C) why such activities are expected to improve student performance and strengthen the quality of mathematics and science instruction; and

(D) in the case of activities carried out in accordance with section 101(d), how such activities will encourage the interest of women

and minorities in mathematics, science, engineering, and technology and will help prepare women and minorities to pursue postsecondary studies in these fields;

(3) a description of the number, size, and nature of any stipends that will be provided to students or teachers and the reasons such stipends are needed;

(4) how the partnership will serve as a catalyst for reform of mathematics and science education programs; and

(5) how the partnership will assess its success.

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

(1) the ability of the partnership to effectively carry out the proposed programs;

(2) the extent to which the members of the partnership are committed to making the partnership a central organizational focus;

(3) the degree to which activities carried out by the partnership are based on relevant research and are likely to result in increased student achievement;

(4) the degree to which such activities are aligned with State or local standards; and

(5) the likelihood that the partnership will demonstrate activities that can be widely implemented as part of larger scale reform efforts.

(c) AWARDS.—(1) The Director shall ensure, to the extent practicable, that partnership grants be awarded under section 101 in a wide range of geographic areas and that the partnership program include rural, suburban, and urban local educational agencies.

(2) Not less than 50 percent of the partnerships funded under section 101 shall include businesses.

(3) The Director shall award grants under this subtitle for a period not to exceed 5 years.

SEC. 103. ACCOUNTABILITY AND DISSEMINATION.

(a) ASSESSMENT REQUIRED.—The Director shall evaluate the partnerships program established under section 101. At a minimum, such evaluations shall—

(1) use a common set of benchmarks and assessment tools to identify best practices and materials developed and demonstrated by the partnerships; and

(2) to the extent practicable, compare the effectiveness of practices and materials developed and demonstrated by the partnerships authorized under this subtitle with those of partnerships funded by other State or Federal agencies.

(b) DISSEMINATION OF RESULTS.—(1) The results of the evaluations required under subsection (a) shall be made available to the public, including through the National Science, Mathematics, Engineering, and Technology Education Digital Library, and shall be provided to the Committee on Science of the House of Representatives and the Committee on Health, Education, Labor, and Pensions and the Committee on Commerce, Science, and Transportation of the Senate.

(2) Materials developed under the program established under section 101 that are demonstrated to be effective shall be made available through the National Science, Mathematics, Engineering, and Technology Education Digital Library.

(c) ANNUAL MEETING.—The Director shall convene an annual meeting of the partnerships participating under this subtitle to foster greater national collaboration.

SEC. 104. AUTHORIZATION OF APPROPRIATIONS.

There are authorized to be appropriated to the National Science Foundation to carry out this subtitle $200,000,000 for each of fiscal years 2002 through 2006.

Subtitle B—Teacher Research Scholarship Program

SEC. 111. PROGRAM AUTHORIZED.

(a) IN GENERAL.—(1) The Director shall establish a program to award grants to institutions of higher education or eligible nonprofit organizations (or consortia thereof) to provide research opportunities in mathematics, science, and engineering for elementary or secondary school teachers of mathematics or science. Such institutions of higher education or eligible nonprofit organizations may include one or more businesses or Federal or State laboratories as partners under the program.

(2) Grants shall be awarded under this section on a merit-reviewed competitive basis.

(b) PROGRAM COMPONENTS.—Grant recipients under this section—

(1) shall recruit and select teachers and provide such teachers with opportunities to conduct research in academic, business, or government laboratories;

(2) shall ensure that the teachers have mentors and other programming support to ensure that their research experience will contribute to their understanding of mathematics, science, and engineering and improve their performance in the classroom;

(3) shall provide teachers with a scholarship stipend; and

(4) may provide room and board for residential programs.

(c) USE OF FUNDS.—(1) Not more than 25 percent of the funds provided under a grant under this section may be used for programming support for teachers.

(2) The Director shall issue guidelines specifying the minimum and maximum amounts of stipends recipients may provide to teachers under this section.

(d) DURATION.—A teacher may participate in research under the program under this section for up to 1 calendar year or 2 sequential summers.

SEC. 112. SELECTION PROCESS.

(a) APPLICATION.—An institution of higher education or an eligible nonprofit organization (or a consortium thereof) seeking funding under section 111 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—

(1) a description of the research opportunities that will be made available to elementary or secondary school teachers, or both, by the applicant;

(2) a description of how the applicant will recruit teachers to participate in the program and the criteria that will be used to select the participants;

(3) a description of the number, types, and amounts of the scholarships that the applicant intends to offer to participating teachers; and

(4) a description of the programming support that will be provided to participating teachers.

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

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

(2) the extent to which the applicant is committed to making the program a central organizational focus; and

(3) the likelihood that the research experiences and programming to be offered by the applicant will improve elementary and secondary education.

(c) AWARDS.—(1) The Director shall ensure, to the extent practicable, that grants be awarded under this subtitle in a wide range of geographic areas and to assist teachers from rural, suburban, and urban local educational agencies.

(2) The Director shall award grants under this subtitle for a period not to exceed 5 years.

SEC. 113. AUTHORIZATION OF APPROPRIATIONS.

There are authorized to be appropriated for the National Science Foundation to carry out this subtitle $15,000,000 for each of fiscal years 2002 through 2006.

TITLE II—NATIONAL SCIENCE, MATHEMATICS, ENGINEERING, AND TECHNOLOGY EDUCATION DIGITAL LIBRARY

SEC. 201. IN GENERAL.

The Director shall establish a program to expand the National Science, Mathematics, Engineering, and Technology Education Digital Library (hereinafter in this Act referred to as the ''Digital Library'') program to enable timely and continuous dissemination of elementary and secondary science, mathematics, engineering, and technology educational resources, materials, practices, and policies through the Internet and other digital technologies. The expanded Digital Library shall—

(1) contain an Internet-based repository of curricular materials, practices, and teaching modules;

(2) contain, to the extent practicable, an Internet-based repository of information about national and regional conferences related to the improvement

of elementary and secondary mathematics, science, engineering, and technology education, including, if appropriate, links to materials generated by those conferences;

(3) provide users of the Digital Library with access to all materials in the Digital Library through a single entry point;

(4) contain only materials that have been peer-reviewed and tested to ensure factual accuracy and effectiveness and that are aligned with recognized State and other widely recognized professional and technical mathematics and science standards;

(5) present materials in a format that is consistent, facilitates ease of comparison and use by classroom teachers, and contains appropriate links to other Federal educational clearinghouses; and

(6) provide materials related to mathematics and science partnership programs, including—

(A) links to all of the programs developed through the mathematics and science partnerships established under subtitle A of title I;

(B) data related to assessment and evaluation and final program reports developed under subtitle A of title I, including both positive and negative outcomes of the program;

(C) materials developed by the partnerships under subtitle A of title I that have been demonstrated to be effective; and

(D) a mechanism for users to make comments or suggestions regarding the use and effectiveness of posted materials.

SEC. 202. GRANTS AND CONTRACT.

(a) GRANTS.—The Director may award grants to institutions of higher education or other qualified entities—

(1) to design all or parts of the Digital Library;

(2) to provide assistance to schools in the selection and adaptation of curricular materials, practices, and teaching methods made available through the Digital Library; or

(3) to carry out the activities described in both paragraphs (1) and (2).

Grants awarded under this subsection may cover the costs of acquiring and reviewing educational materials for dissemination through the Digital Library.

(b) OPERATION.—The Director may contract out the operation and management of the Digital Library.

(c) COMPETITIVE AWARDS.—Grants and contracts shall be awarded under this section on a competitive basis.

SEC. 203. CONSTRUCTION.

Nothing in this Act shall affect the rights, remedies, limitations, or defenses under title 17, United States Code.

SEC. 204. AUTHORIZATION OF APPROPRIATIONS.

There are authorized to be appropriated for the National Science Foundation to carry out this title $20,000,000 for each of fiscal years 2002 through 2006.

TITLE III—STRATEGIC EDUCATION RESEARCH PROGRAM

Subtitle A—Centers

SEC. 301. ESTABLISHMENT OF CENTERS FOR RESEARCH ON LEARNING AND EDUCATION IMPROVEMENT.

(a) IN GENERAL.—(1) The Director shall award grants to institutions of higher education (or consortia thereof) to establish 4 multidisciplinary Centers for Research on Learning and Education Improvement.

(2) Grants shall be awarded under this subsection on a merit-reviewed competitive basis.

(b) PURPOSE.—The purpose of the Centers shall be to conduct and evaluate research in cognitive science, education and related fields and to develop ways in which the results of such research can be applied in elementary and secondary classrooms to improve the teaching of mathematics and science.

(c) FOCUS.—(1) Each Center shall be focused on a different challenge faced by elementary or secondary school teachers of mathematics and science. In determining the research focus of the Centers, the Director shall consult with the National Academy of Sciences and take into account the extent to which other Federal programs support research on similar questions.

(2) The proposal solicitation issued by the Director shall state the focus of each Center and applicants shall apply for designation as a specific Center.

SEC. 302. SELECTION PROCESS.

(a) APPLICATION.—An institution of higher education (or a consortium of such institutions) seeking funding under this title 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 description of—

(1) the initial research projects that will be undertaken by the Center and the process by which new projects will be identified;

(2) how the Center will work with other research institutions and schools to broaden the national research agenda on learning and teaching;

(3) how the Center will promote active collaboration among physical, biological, and social science researchers;

(4) how the Center will promote active participation by elementary and secondary mathematics and science teachers and administrators; and

(5) how the Center will reduce the results of its research to educational practice and assess the success of new practices.

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

(1) the ability of the applicant to effectively carry out the research program and reduce its results to effective educational practice;

(2) the experience of the applicant in conducting research on the science of teaching and learning and the capacity of the applicant to foster new multidisciplinary collaborations;

(3) the capacity of the applicant to attract precollege educators from a diverse array of schools and professional experiences for participation in Center activities; and

(4) the capacity of the applicant to attract and provide adequate support for graduate students to

pursue research at the intersection of educational practice and basic research on human cognition and learning.

(c) AWARDS.—The Director shall ensure, to the extent practicable, that the Centers funded under this section conduct research and develop educational practices designed to improve the educational performance of a broad range of students, including those from groups underrepresented in mathematics, science, and engineering.

SEC. 303. ANNUAL CONFERENCE.

The Director shall convene an annual meeting of the Centers to foster collaboration among the Centers and to further disseminate the results of the Centers' activities.

SEC. 304. AUTHORIZATION OF APPROPRIATIONS.

There are authorized to be appropriated for the National Science Foundation to carry out this title $12,000,000 for each of fiscal years 2002 through 2006.

Subtitle B—Fellowships

SEC. 311. EDUCATION RESEARCH TEACHER FELLOWSHIPS.

(a) ESTABLISHMENT.—(1) The Director shall establish a program to award grants to institutions of higher education or eligible nonprofit entities (or consortia thereof) to provide research opportunities related to the science

of learning to elementary and secondary school teachers of science and mathematics.

(2) Grants shall be awarded under this section on a merit-reviewed competitive basis.

(b) PROGRAM COMPONENTS.—Grant recipients under this section—

(1) shall recruit and select teachers and provide such teachers with opportunities to conduct research in the fields of—

(A) brain research as a foundation for research on human learning;

(B) behavioral, cognitive, affective, and social aspects of human learning;

(C) science and mathematics learning in formal and informal educational settings; or

(D) learning in complex educational systems;

(2) shall ensure that participating teachers have mentors and other programming support to ensure that their research experience will contribute to their understanding of the science of learning;

(3) shall provide programming, guidance, and support to ensure that participating teachers disseminate information about the current state of education research and its implications for classroom

practice to other elementary and secondary educators and can use that information to improve their performance in the classroom;

(4) shall provide participating teachers with a scholarship stipend; and

(5) may provide room and board for residential programs.

(c) USE OF FUNDS.—(1) Not more than 25 percent of the funds provided under a grant under this section may be used for programming support for participating teachers.

(2) The Director shall issue guidelines specifying the minimum or maximum amounts of stipends grant recipients may provide to teachers under this section.

(d) DURATION.—A teacher may participate in research under the program under this section for up to 1 calendar year or 2 sequential summers.

(e) APPLICATION.—An institution of higher education or eligible nonprofit entity (or a consortium thereof) 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—

(1) a description of the research opportunities that will be made available to elementary or secondary school teachers, or both, by the applicant;

(2) a description of how the applicant will recruit teachers to participate in the program, and the criteria that will be used to select the participants;

(3) a description of the number, types, and amounts of the scholarships that the applicant intends to offer to participating teachers; and

(4) a description of the programming support that will be provided to participating teachers to enhance their research experience and to enable them to educate their peers about the value, findings, and implications of education research.

(f) REVIEW OF APPLICANTS.—In evaluating the applications submitted under subsection (e), the Director shall consider, at a minimum—

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

(2) the extent to which the applicant is committed to making the program a central organizational focus; and

(3) the likelihood that the research experiences and programming to be offered by the applicant will improve elementary and secondary education.

(g) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the National Science Foundation for carrying out this section $5,000,000 for each of fiscal years 2002 through 2004.

TITLE IV—ROBERT NOYCE SCHOLARSHIP PROGRAM

SEC. 401. DEFINITIONS.

In this title—

(1) the term ''mathematics and science teacher'' means a mathematics, science, or technology teacher at the elementary or secondary school level;

(2) the term ''mathematics, science, or engineering professional'' means a person who holds a baccalaureate, masters, or doctoral degree in science, mathematics, or engineering and is working in that field or a related area;

(3) the term ''scholarship'' means an award under section 405; and

(4) the term ''scholarship recipient'' means a student receiving a scholarship;

(5) the term ''stipend'' means an award under section 406;

(6) the term ''stipend recipient'' means a science, mathematics, or engineering professional receiving a stipend; and

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

SEC. 402. SCHOLARSHIP PROGRAM.

(a) IN GENERAL.—(1) The Director shall establish a program to award grants to institutions of higher education (or consortia of such institutions) to provide scholarships and programming designed to recruit and train mathematics and science teachers. Such program shall be known as the ''Robert Noyce Scholarship Program''.

(2) Grants shall be provided under this section on a merit-reviewed competitive basis.

(b) USE OF GRANTS.—Grants provided under this title shall be used by institutions of higher education—

(1) to develop and implement a program to encourage top college juniors and seniors majoring in mathematics, science, and engineering at the grantee's institution to become mathematics and science teachers, through—

(A) administering scholarships in accordance with section 405;

(B) offering programs to help scholarship recipients to teach in elementary and secondary schools, including programs that will result in teacher certification; and

(C) offering programs to scholarship recipients, both before and after they receive their baccalaureate degree, to enable the recipients to become better mathematics and science teachers, and to exchange ideas with others in their fields; or

(2) to develop and implement a program to encourage science, mathematics, or engineering professionals to become mathematics and science teachers, through—

(A) administering stipends in accordance with section 406;

(B) offering programs to help stipend recipients obtain teacher certification; and

(C) offering programs to stipend recipients, both during and after matriculation, to enable recipients to become better mathematics and science teachers and exchange ideas with others in their fields; or

(3) for both of the purposes described in paragraphs (1) and (2).

SEC. 403. SELECTION PROCESS.

(a) APPLICATION.—An institution of higher education (or a consortium of such institutions) seeking funding under this title shall submit an application to the Di-

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

(1) a description of the scholarship or stipend program, or both, that the applicant intends to operate, including the number of scholarships or the size and number of stipends the applicant intends to award, and the selection process that will be used in awarding the scholarships or stipends;

(2) evidence that the applicant has the capability to administer the scholarship or stipend program in accordance with the provisions of this title; and

(3) a description of the programming that will be offered to scholarship or stipend recipients during and after their matriculation.

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

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

(2) the extent to which the applicant is committed to making the program a central organizational focus;

(3) the ability of the proposed programming to enable scholarship or stipend recipients to become successful mathematics and science teachers;

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

(5) the ability of the applicant to recruit students who would otherwise not pursue a career in teaching.

SEC. 404. AWARDS.

(a) DESIGNATION.—The Director shall designate institutions awarded grants under this title as ''National Teacher Scholarship Centers''.

(b) DISTRIBUTION.—The Director shall ensure, to the extent practicable, that grants be awarded under this title in a wide range of geographic areas and to prepare students for jobs in rural, suburban, and urban local educational agencies.

(c) DURATION.—Grants awarded under this title shall be for a period of 10 years.

SEC. 405. SCHOLARSHIP REQUIREMENTS.

(a) IN GENERAL.—Scholarships under this title shall be available only to students who are—

(1) majoring in science, mathematics, or engineering; and

(2) in the last 2 years of a baccalaureate degree program.

(b) 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 minorities, women, and people with disabilities.

(c) AMOUNT.—Scholarships under this title shall be in the amount of $7,500 per year, or the cost of attendance, whichever is less. Individuals may receive a maximum of 2 years of scholarship support.

(d) 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, 2 years of service as a mathematics or science teacher for each year a scholarship was received. Service required under this subsection shall be performed at a school receiving assistance under chapter 1 of title I of the Elementary and Secondary Education Act of 1965 (Public Law 89–10).

SEC. 406. STIPENDS.

(a) IN GENERAL.—Stipends under this title shall be available only to mathematics, science, and engineering

professionals who, while receiving the stipend, are enrolled in a program to receive certification to teach.

(b) SELECTION.—Individuals shall be selected to receive stipends under this title primarily on the basis of academic merit, with consideration given to financial need and to the goal of promoting the participation of minorities, women, and people with disabilities.

(c) AMOUNT.—Stipends under this title shall be for an amount of up to $7,500 per year, but in no event more than the cost of attendance. Individuals may receive a maximum of 1 year of stipend support.

(d) SERVICE OBLIGATION.—If an individual receives a stipend under this title, that individual shall be required to complete, within 6 years after graduation from the program for which the stipend was awarded, 2 years of service as a mathematics or science teacher for each year a stipend was received. Service required under this subsection shall be performed at a school receiving assistance under chapter 1 of title I of the Elementary and Secondary Education Act of 1965 (Public Law 89–10).

SEC. 407. CONDITIONS OF SUPPORT.

As a condition of acceptance of a scholarship or stipend under this title, a recipient shall enter into an agreement with the institution of higher education—

(1) accepting the terms of the scholarship or stipend pursuant to sections 405 and 409 or section 406;

(2) agreeing to provide the awarding institution of higher education with annual certification of employment and current 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 the provisions of section 409.

SEC. 408. COLLECTION FOR NONCOMPLIANCE.

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

(b) COLLECTION OF REPAYMENT.—(1) In the event that a scholarship recipient is required to repay the scholarship under section 409, the institution shall be responsible for collecting the repayment amounts.

(2) Except as provided in paragraph (3), any repayment shall be returned to the Treasury of the United States.

(3) 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.

SEC. 409. FAILURE TO COMPLETE SERVICE OBLIGATION.

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

(1) fails to maintain an acceptable level of academic standing in the educational institution in which the individual is enrolled, as determined by the National Science Foundation;

(2) is dismissed from such educational institution for disciplinary reasons;

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

(4) declares that the individual does not intend to fulfill his service obligation under this title; or

(5) fails to fulfill the service obligation of the individual under this title,

such individual shall be liable to the United States as provided in subsection (b).

(b) AMOUNT OF REPAYMENT.—(1) If a circumstance described in subsection (a) occurs before the completion of one year of a service obligation under this title, 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—

(A) the total amount of awards received by such individual under this title; plus

(B) the interest on such amounts which would be payable if at the time the amounts were received they were loans bearing interest at the maximum legal prevailing rate, as determined by the Treasurer of the United States,

multiplied by 2.

(2) If a circumstance described in subsection (a)(4) or (a)(5) occurs after the completion of one year of a service obligation under this title, 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—

(A) the total amount of awards received by such individual under this title minus $3,750 for each full year of service completed; plus

(B) the interest on such amounts which would be payable if at the time the amounts were received

they were loans bearing interest at the maximum legal prevailing rate, as determined by the Treasurer of the United States.

(c) EXCEPTIONS.—(1) The National Science Foundation may provide for the partial or total waiver or suspension of any service obligation or payment by an individual under this title whenever compliance by the individual is impossible or would involve extreme hardship to the individual, or if enforcement of such obligation with respect to the individual would be unconscionable.

(2) Any obligation of an individual under this title for payment under subsection (b) may be released by a discharge in bankruptcy under title 11, United States Code, only if such discharge is granted after the expiration of the 5-year period beginning on the first date that such payment is required.

SEC. 410. REPORT.

(a) DATA COLLECTION.—Institutions receiving grants under this title shall supply to the Director any relevant statistical and demographic data on scholarship recipients and stipend recipients the Director may request, including information on employment required by section 407.

(b) ASSESSMENT.—Not later than 7 years after the date of the enactment of this Act, the Director shall sub-

mit to Congress a report assessing the impact of the implementation of this title on drawing into teaching top mathematics and science students, including students from groups underrepresented in mathematics, science, and engineering.

SEC. 411. AUTHORIZATION OF APPROPRIATIONS.

(a) IN GENERAL.—There are authorized to be appropriated to the National Science Foundation to carry out this title $20,000,000 for each of fiscal years 2002 through 2005.

(b) SPECIFIC APPROPRIATIONS.—There are authorized to be appropriated to the National Science Foundation to support the activities described in subsections (b)(1)(A) and (C) and (b)(2)(A) and (C) of section 402, such sums as may be necessary for each of fiscal years 2006 through 2011.

TITLE V—REQUIREMENTS FOR RESEARCH CENTERS

SEC. 501. REQUIREMENTS FOR RESEARCH CENTERS.

The Director shall ensure that any National Science Foundation program that awards grants for the establishment of research centers at institutions of higher education after the date of the enactment of this Act—

(1) requires that every center offer programs for elementary and secondary mathematics and

science teachers and students to increase their understanding of the field in which the center specializes; and

(2) uses the quality of a center's proposed precollege education programs as a criterion in determining grant awards.

TITLE VI—EDUCATIONAL TECHNOLOGIES

Subtitle A—Research Centers

SEC. 601. EDUCATIONAL TECHNOLOGY RESEARCH CENTERS.

(a) IN GENERAL.—(1) The Director shall establish a program to award grants to institutions of higher education (or consortia thereof) to establish centers to evaluate and improve the effectiveness of information technologies in elementary and secondary mathematics and science education.

(2) Grants shall be awarded under this subtitle on a merit-reviewed competitive basis.

(b) ACTIVITIES.—Centers established under this subtitle shall, at a minimum—

(1) identify educational approaches and techniques that are based on the use of information technology and that have the potential for being effective in classroom settings;

(2) develop methods to measure the effectiveness of various applications of information technology in mathematics and science education, including methods to measure student performance;

(3) evaluate the effectiveness of the use of technology in elementary and secondary mathematics and science education in a variety of classroom settings;

(4) identify the key variables that influence educational effectiveness and the conditions necessary to implement successfully an approach or technique determined to be educationally effective for a particular educational setting;

(5) ensure that the results of such evaluations are widely disseminated; and

(6) develop a program to work with local educational agencies to help them apply the results of the research conducted under this section.

SEC. 602. SELECTION PROCESS.

(a) APPLICATION.—An institution of higher education (or a consortium of such institutions) seeking funding under this subtitle 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 description of—

(1) the approaches to the use of information technology that the center will initially evaluate, how it chose those approaches, how it will seek out any additional approaches, and how assessment procedures would be developed and applied;

(2) how the center will work with local educational agencies to evaluate the approaches in classrooms;

(3) how the center will disseminate the results of its work; and

(4) how the center will develop an outreach program to work with local educational agencies to help them apply the results of its research.

(b) REVIEW OF APPLICATIONS.—In evaluating the applications submitted under subsection (a), the Director shall consider, at a minimum, the ability of the applicant to effectively evaluate information technology approaches and to help local educational agencies apply the results of those evaluations.

(c) AWARDS.—The Director shall ensure, to the extent practicable, that the program established under this subtitle evaluates information technology—

(1) in a wide range of grade levels and geographic areas;

(2) in rural, suburban, and urban schools; and

(3) with a wide variety of students in terms of race, ethnicity, and income.

SEC. 603. DOCUMENTATION AND DISSEMINATION OF RESULTS.

(a) IN GENERAL.—The results of the research and evaluations conducted in accordance with section 601 shall be documented and widely disseminated, including through publication in peer-reviewed scholarly journals.

(b) WORKSHOPS, CONFERENCES, AND WEB SITES.—The Director is authorized to sponsor and support workshops, conferences, and dedicated web sites to disseminate information about the activities of the educational technology research centers established under section 601.

(c) DEPOSIT IN LIBRARY.—Information about effective approaches and techniques, including information and materials necessary for their implementation, shall be deposited in the Digital Library.

SEC. 604. AUTHORIZATION OF APPROPRIATIONS.

There are authorized to be appropriated to the National Science Foundation to carry out the program established under section 601—

(1) $25,000,000 for each of fiscal years 2002 through 2004; and

(2) $30,000,000 for each of fiscal years 2005 and 2006.

Subtitle B—Assistance

SEC. 611. EDUCATIONAL TECHNOLOGY ASSISTANCE.

Section 3 of the Scientific and Advanced Technology Act of 1992 (Public Law 102–476; 42 U.S.C. 1862i) is amended by redesignating subsections (d), (e), (f), and (g) as subsections (e), (f), (g), and (h), respectively, and by inserting after subsection (c) the following new subsection:

''(d) EDUCATIONAL TECHNOLOGY ASSISTANCE.—

''(1) IN GENERAL.—The Director may make awards on a competitive, merit-reviewed basis to associate-degree granting colleges, bachelor-degree granting institutions, or education service agencies (or consortia thereof) to establish centers to assist elementary and secondary schools in the use of information technology for mathematics, science, or technology instruction.

''(2) ACTIVITIES.—Activities of centers funded under this subsection may include—

''(A) helping schools evaluate their need for information technology;

''(B) training teachers on how to best use information technology in instruction; and

''(C) providing other information and training to help schools and teachers ensure that they have access to appropriate informa-

tion technologies and are using them to maximum advantage.

''(3) APPLICATION.—An application to receive funds under this subsection shall include, at a minimum—

''(A) a description of the services that will be provided to schools and teachers;

''(B) a list of the schools expected to be served;

''(C) a description of how the applicant will draw on the expertise of its faculty and students to assist schools and teachers; and

''(D) a description of how the applicant will operate the program after funding made available by this subsection has expired.

''(4) SELECTION.—In evaluating applications submitted under paragraph (3), the Director shall consider, at a minimum—

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

''(B) the number of schools and students who would be served and the their need for assistance;

''(C) the extent to which the applicant has worked with participating schools to ensure that

priority problems would be addressed by the assistance provided under this subsection; and

''(D) the ability of the applicant to continue to provide assistance after funding under this subsection has expired.

''(5) AWARDS.—(A) The Director shall ensure, to the extent practicable, that the program established by this subsection assists schools in rural, suburban, and urban areas.

''(B) No institution shall receive funds under this subsection for more than three years.

''(C) An institution receiving a grant under subtitle A of title VI of the National Mathematics and Science Partnerships Act may participate in the program created by this section.

''(6) REPORT.—Not later than April 1, 2005, the Director shall provide a report to Congress assessing the success of the program funded under this subsection and the need of schools for continued assistance, and, based on the experience with the program, recommending ways information technology assistance to schools could be made more broadly available.

''(7) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the Na-

tional Science Foundation to carry out this subsection $5,000,000 for each of the fiscal years 2002 through 2004.''.

TITLE VII—MISCELLANEOUS PROVISIONS

SEC. 701. MATHEMATICS AND SCIENCE PROFICIENCY SCHOLARSHIPS.

(a) FINDINGS.—Congress finds the following:

(1) Proficiency in mathematics, science, and information technology is necessary to prepare all students in the United States for participation in the 21st century and to guarantee that the United States economy remains vibrant and competitive.

(2) In order to achieve such results, it is important that the Federal Government shows interest in economically disadvantaged students who have not been provided with opportunities that will improve their knowledge of mathematics, science, and technology.

(3) Many economically disadvantaged students in urban and rural America share a common need to receive a quality education, but often the schools of such students lack the needed resources to lift those students into the information age.

(4) The schools and businesses serving urban and rural communities are strategically positioned to form a unique partnership with students that will increase their mathematics, science, and technology proficiency and encourage and support their undergraduate study in those fields for the benefit of the Nation.

(b) IN GENERAL.—The Director shall establish a demonstration project to encourage businesses to offer scholarships to eligible students (to enable them to attend institutions of higher education) by providing grants to improve mathematics, science, or technology education in the schools attended by the eligible students.

(c) USE OF FUNDS.—(1) The Director shall provide grants under this section to local educational agencies on a merit-reviewed, competitive basis.

(2) Funds awarded under this subsection may be used to—

(A) provide teacher professional development in mathematics, science, or technology;

(B) develop or implement mathematics, science, or technology curriculums, and to purchase related equipment; and

(C) to carry out other activities the Director determines would improve mathematics, science, or technology education.

(d) ELIGIBLE LOCAL EDUCATIONAL AGENCIES.—For purposes of this section, a local educational agency is eligible to receive a grant under this section if the agency—

(1) provides assurances that it has executed conditional agreements with representatives of the private sector to provide services and funds described in subsection (e); and

(2) agrees to enter into an agreement with the Director to comply with the requirements of this section.

(e) PRIVATE SECTOR PARTICIPATION.—The conditional agreements referred to in subsection (d)(1) shall describe participation by the private sector, including—

(1) the donation of computer hardware, software, and other technology tools;

(2) the establishment of internship and mentoring opportunities for students who participate in the mathematics, science, and information technology program; and

(3) the donation of higher education scholarship funds for eligible students to continue their study of mathematics, science, and information technology.

(f) APPLICATION.—(1) To apply for a grant under this section, each eligible local educational agency shall submit an application to the Director in accordance with guidelines established by the Director pursuant to paragraph (2).

(2)(A) The guidelines referred to in paragraph (1) shall require, at a minimum, that the application include—

(i) a description of proposed activities consistent with the uses of funds and program requirements under subsection (c);

(ii) a description of the higher education scholarship program, including criteria for selection, duration of scholarship, number of scholarships to be awarded each year, and funding levels for scholarships; and

(iii) evidence of private sector participation and financial support to establish an internship, mentoring, and scholarship program.

(B) The Director shall issue and publish such guidelines not later than 6 months after the date of the enactment of this Act.

(g) PRIORITY.—The Director shall give special priority in awarding grants under this section to eligible local educational agencies that—

(1) demonstrate the greatest ability to obtain commitments from representatives of the private sector to provide services and funds described under subsection (e); and

(2) demonstrate the greatest economic need.

(h) ASSESSMENT.—The Director shall assess the effectiveness of activities carried out under this section.

(i) STUDY AND REPORT.—The Director—

(1) shall initiate an evaluative study of the effectiveness of the activities carried out under this section in improving student performance in mathematics, science, and information technology at the precollege level and in stimulating student interest in pursuing undergraduate studies in those fields; and

(2) shall report the findings of the study to Congress not later than 4 years after the award of the first scholarship.

Such report shall include the number of students graduating from an institution of higher education with a major in mathematics, science, or information technology

and the number of students who find employment in such fields.

(j) DEFINITIONS.—In this section:

(1) The term ''conditional agreement'' means an arrangement between representatives of the private sector and local educational agencies to provide certain services and funds, such as, but not limited to, the donation of computer hardware and software, the establishment of internship and mentoring opportunities for students who participate in mathematics, science, and information technology programs, and the donation of scholarship funds for use at institutions of higher education by eligible students who have participated in the mathematics, science, and information technology programs.

(2) The term ''eligible student'' means a student enrolled in the 12th grade who—

(A) has participated in a mathematics, science, and an information technology program established pursuant to this section;

(B) has demonstrated a commitment to pursue a career in information technology, mathematics, science, or engineering; and

(C) has attained high academic standing and maintains a grade point average of not less

than 2.7 on a 4.0 scale for the period from the beginning of the 10th grade through the time of application for a scholarship.

(k) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the National Science Foundation to carry out this section $5,000,000 for each of fiscal years 2002 through 2004.

(l) MAXIMUM GRANT AWARD.—An award made to an eligible local educational agency under this section may not exceed $300,000.

SEC. 702. ARTICULATION PARTNERSHIPS BETWEEN COMMUNITY COLLEGES AND SECONDARY SCHOOLS.

(a) OUTREACH GRANTS.—In making awards for outreach grants authorized under section 3(c)(2) of the Scientific and Advanced-Technology Act of 1992 (42 U.S.C. 1862i(c)(2)), the Director shall give priority to proposals that involve secondary schools with a majority of students from groups that are underrepresented in the science, mathematics, and engineering workforce. Awards in such cases shall not be subject to the requirement under section 3(f)(3) of such Act for a matching contribution.

(b) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to the National Science

Foundation to carry out this section $5,000,000 for each of fiscal years 2002 through 2004.

SEC. 703. ASSESSMENT OF IN-SERVICE TEACHER PROFESSIONAL DEVELOPMENT PROGRAMS.

(a) ASSESSMENT.—The Director shall review all programs sponsored by the National Science Foundation that support in-service teacher professional development for science teachers to determine—

(1) the level of resources and degree of emphasis placed on training teachers in the effective use of information technology in the classroom; and

(2) the allocation of resources between summer activities and follow-on reinforcement training and support to participating teachers during the school year.

(b) REPORT.—The Director shall submit to Congress, not later than 1 year after the date of the enactment of this Act, a report that—

(1) describes the results of the review and assessment conducted under subsection (a);

(2) summarizes the major categories of in-service teacher professional development activities supported at the time of the review, and the funding levels for such activities; and

(3) describes any proposed changes, including new funding allocations, to strengthen the in-service teacher professional development programs of the National Science Foundation that support activities described in paragraphs (1) and (2) of subsection (a).

SEC. 704. STUDY OF BROADBAND NETWORK ACCESS FOR SCHOOLS AND LIBRARIES.

(a) REPORT TO CONGRESS.—The Director shall conduct a study of the issues described in subsection (c), and not later than 1 year after the date of the enactment of this Act, transmit to Congress a report including recommendations to address those issues. Such report shall be updated annually for 6 additional years.

(b) CONSULTATION.—In preparing the reports under subsection (a), the Director shall consult with the National Aeronautics and Space Administration, the National Institute of Standards and Technology, and such other Federal agencies and educational entities as the Director considers appropriate.

(c) ISSUES TO BE ADDRESSED.—The reports shall—

(1) identify the current status of high-speed, large bandwidth capacity access to all public elementary and secondary schools and libraries in the United States;

(2) identify how the provision of high-speed, large bandwidth capacity access to the Internet to such schools and libraries can be effectively utilized within each school and library;

(3) consider the effect that specific or regional circumstances may have on the ability of such institutions to acquire high-speed, large bandwidth capacity access to achieve universal connectivity as an effective tool in the education process; and

(4) include options and recommendations to address the challenges and issues identified in the reports.

Passed the House of Representatives July 30, 2001.

Attest: JEFF TRANDAHL,

Clerk.