To improve national competitiveness through enhanced education initiatives.

IN THE SENATE OF THE UNITED STATES

JUNE 8, 2006

Mr. ENSIGN (for himself and Mr. LIEBERMAN) introduced the following bill; which was read twice and referred to the Committee on Health, Education, Labor, and Pensions

A BILL

To improve national competitiveness through enhanced education initiatives.

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. SHORT TITLE.

4 This Act may be cited as the “National Innovation

5 Education Act”.

6 SEC. 2. TABLE OF CONTENTS.

7 The table of contents for this Act is as follows:

Sec. 1. Short title.
Sec. 2. Table of contents.

TITLE I—IMPROVING PREKINDERGARTEN THROUGH GRADE 16 EDUCATION

Sec. 101. Short title.
TITLE I—IMPROVING PRE-KINDERGARTEN THROUGH GRADE 16 EDUCATION

SEC. 101. SHORT TITLE.

This title may be cited as the “College Pathway Act of 2006”.

SEC. 102. PURPOSES.

The purposes of this title are the following:

(1) To broaden the focus of Federal, State, and local higher education programs to promote academic success in postsecondary education, particu-
larly with respect to mathematics, science, engineering, and technology.

(2) To increase the percentage of low-income and minority students who are academically prepared to enter and successfully complete postsecondary-level general education coursework.

(3) To decrease the percentage of students requiring developmental coursework through grants that enable States to coordinate the public prekindergarten through grade 12 education system and the postsecondary education system—

(A) to ensure that covered institutions articulate and publicize the prerequisite skills and knowledge expected of incoming postsecondary students attending covered institutions, in order to provide students and other interested parties with accurate information pertaining to the students’ necessary preparations for postsecondary education;

(B) to establish and implement middle school and secondary school course enrollment guidelines while ensuring rigorous content standards—

(i) to ensure that public secondary school students, in all major racial and
ethnic groups, and income levels, complete academic courses linked with academic success in mathematics, science, engineering, and technology at the postsecondary level; and

(ii) to increase the percentage of students in each major racial group, ethnic group, and income level who graduate from secondary school and enter postsecondary education with the academic preparation necessary to successfully complete postsecondary-level general education coursework, particularly with respect to mathematics, science, engineering, and technology;

(C) to implement programs and policies that increase secondary school graduation rates while ensuring rigorous content standards; and

(D) to collect and analyze disaggregated longitudinal student data throughout P–16 education in order to—

(i) understand and improve students’ progress throughout P–16 education;

(ii) understand problems and needs throughout P–16 education; and
(iii) align prekindergarten through grade 12 academic standards and higher education standards so that more students are prepared to successfully complete post-secondary-level general education coursework.

SEC. 103. DEFINITIONS.

In this title:

(1) IN GENERAL.—The terms “local educational agency”, “parent”, “secondary school”, and “State” have the meanings given the terms in section 9101 of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 7801).

(2) ACADEMIC ASSESSMENTS.—The term “academic assessments” means the academic assessments implemented by a State educational agency pursuant to section 1111(b)(3) of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 6311(b)(3)).

(3) ACADEMIC STANDARDS.—The term “academic standards” means the challenging academic content standards and challenging student academic achievement standards adopted by a State pursuant to section 1111(b)(1) of the Elementary and Sec-
(4) COVERED INSTITUTION.—The term “covered institution” means an institution of higher education that participates in a program under title IV of the Higher Education Act of 1965 (20 U.S.C. 1070 et seq.).

(5) DEVELOPMENTAL COURSEWORK.—The term “developmental coursework” means coursework that a student is required to complete in order to attain prerequisite knowledge or skills necessary for entrance into a postsecondary degree or certification program.

(6) INSTITUTION OF HIGHER EDUCATION.—The term “institution of higher education” has the meaning given the term in section 102 of the Higher Education Act of 1965 (20 U.S.C. 1002).

(7) P–16 EDUCATION.—The term “P–16 education” means the educational system from pre-kindergarten through the conferring of a baccalaureate degree.

(8) P–16 EDUCATOR.—The term “P–16 educator” means an individual teaching in P–16 education.
(9) SECRETARY.—The term “Secretary” means the Secretary of Education.

(10) STUDENT.—The term “student” means any student enrolled in a public school.

SEC. 104. P–16 EDUCATION STEWARDSHIP SYSTEM GRANTS.

(a) PROGRAM AUTHORIZED.—From amounts appropriated under section 109 for a fiscal year, and subject to subsection (b), the Secretary shall award grants, on a competitive basis, to States to enable the States—

(1) to establish—

(A) P–16 education stewardship commissions in accordance with section 106; or

(B) P–16 education stewardship systems consisting of—

(i) a P–16 education stewardship commission in accordance with section 106; and

(ii) a P–16 education data system in accordance with section 107; and

(2) to carry out the activities and programs described in the State application and plan submitted under section 105.

(b) AWARD BASIS.—In determining the approval and amount of a grant under subsection (a), the Secretary shall give priority to an application from a State that de-
sires the grant to establish a P–16 education stewardship system described in subsection (a)(1)(B).

(c) Period of Grants.—

(1) States establishing P–16 education stewardship systems.—Each grant made under this section to a State to establish a P–16 education stewardship system described in subsection (a)(1)(B) shall be awarded for a period of 5 years.

(2) States establishing P–16 education stewardship commissions.—Each grant made under this section to a State to establish a P–16 education stewardship commission described in subsection (a)(1)(A) shall be awarded for a period of 3 years.

SEC. 105. STATE APPLICATION AND PLAN.

(a) In General.—A State desiring a grant under section 104 shall submit an application to the Secretary at such time, in such manner, and containing such information as the Secretary may reasonably require.

(b) Contents.—Each application submitted under this section shall include, at a minimum, the following:

(1) A demonstration that the State, not later than 5 months after receiving grant funds under this title, will establish a P–16 education stewardship commission described in section 106.
(2) For a state applying for a grant under section 104(a)(1)(B), a demonstration that the State, not later than 2 years after receiving grant funds under this title, will implement, expand, or improve a P–16 education data system described in section 107.

(3) A demonstration that the State will work with the State P–16 education stewardship commission and others as necessary to examine the relationship among the content of postsecondary education admission and placement exams, the prerequisite skills and knowledge required to successfully take postsecondary-level general education coursework, the prekindergarten through grade 12 courses and academic factors associated with academic success at the postsecondary level, particularly with respect to mathematics, science, engineering, and technology, and existing academic standards and aligned academic assessments.

(4) A description of how the State will, using the information from the State P–16 education stewardship commission, increase the percentage of students taking courses that have the highest correlation of academic success at the postsecondary level, for each of the following groups of students:
(A) Economically disadvantaged students.

(B) Students from each major racial and ethnic group.

(C) Students with disabilities.

(D) Students with limited English proficiency.

(5) A description of how the State will distribute the information in the P–16 education stewardship commission’s report under section 106(c)(4) to the public in the State, including public secondary schools, local educational agencies, school counselors, P–16 educators, institutions of higher education, students, and parents.

(6) An assurance that the State will continue to pursue effective P–16 education alignment strategies after the end of the grant period.

SEC. 106. P–16 EDUCATION STEWARDSHIP COMMISSION.

(a) P–16 Education Stewardship Commission.—

(1) In general.—Each State receiving a grant under section 104 shall establish a P–16 education stewardship commission that has the policymaking ability to meet the requirements of this section.

(2) Existing Commission.—The State may designate an existing coordinating body or commission as the State P–16 education stewardship com-
mission for purposes of this title, if the body or com-
mission meets, or is amended to meet, the basic re-
quirements of this section.

(b) MEMBERSHIP.—

(1) COMPOSITION.—Each P–16 education steward-
ship commission shall be composed of the Gov-
ernor of the State, or the designee of the Governor,
and the stakeholders of the statewide education com-
munity, as determined by the Governor or the des-
ignee of the Governor, such as—

(A) the chief State official responsible for
administering prekindergarten through grade
12 education in the State;

(B) the chief State official of the entity
primarily responsible for the supervision of in-
stitutions of higher education in the State;

(C) bipartisan representation from the
State legislative committee with jurisdiction
over prekindergarten through grade 12 edu-
cation and higher education;

(D) representatives of 2- and 4-year insti-
tutions of higher education in the State;

(E) representatives of the business commu-
ity; and
(F) at the discretion of the Governor, or
the designee of the Governor, representatives
from prekindergarten through grade 12 and
higher education governing boards and other
organizations.

(2) Chairperson; Meetings.—The Governor
of the State, or the designee of the Governor, shall
serve as chairperson of the P–16 education steward-
ship commission and shall convene regular meetings
of the commission.

(c) Duties of the Commission.—

(1) Meetings of Covered Institutions.—

(A) In general.—Each State P–16 edu-
cation stewardship commission shall convene
regular meetings of the covered institutions in
the State for the purpose of assessing and
reaching consensus regarding—

(i) the prerequisite skills and knowl-
edge expected of incoming freshmen to suc-
cessfully engage in and complete postsec-
ondary-level general education coursework
without the prior need to enroll in develop-
mental coursework; and

(ii) patterns of coursework and other
academic factors that demonstrate the
highest correlation with success in completing postsecondary-level general education coursework and degree or certification programs, particularly with respect to mathematics, science, engineering, and technology.

(B) FINDINGS OF COVERED INSTITUTIONS.—The covered institutions shall communicate to the P–16 education stewardship commission the findings of the covered institutions, which—

(i) shall include the consensus on the prerequisite skills and knowledge, patterns of coursework, and other academic factors described in subparagraph (A);

(ii) shall address, at minimum, the subjects of reading or language arts, history, mathematics, science, technology, and engineering, and may cover additional academic content areas;

(iii) shall be descriptive of content and purpose, and shall not be limited to a simple listing of secondary course names; and

(iv) may be different for 2- and 4-year institutions of higher education.
(2) Commission recommendations.—Not later than 18 months after a State receives a grant under section 104, and annually thereafter for each year in the grant period, the State P–16 education stewardship commission shall—

(A) develop recommendations regarding the prerequisite skills and knowledge, patterns of coursework, and other academic factors described in paragraph (1)(A); and

(B) develop recommendations and enact policies to increase the success rate of students in the students’ transition from secondary school to postsecondary education, including policies to increase success rates for—

(i) students of economic disadvantage;

(ii) students of racial and ethnic minorities;

(iii) students with disabilities; and

(iv) students with limited English proficiency.

(3) Commission findings.—Not later than 3 years after a State receives a grant under section 104(a)(1)(B), the State P–16 education stewardship commission shall—
(A) compile and interpret the findings from the P–16 education data system; and

(B) include the compilation and interpretation of the findings in the report described in paragraph (4)(A).

(4) REPORTS.—

(A) IN GENERAL.—Not later than 18 months after a State receives a grant under section 104, and annually thereafter for each year in the grant period, the State P–16 education stewardship commission shall prepare and submit to the Secretary a clear and concise report that shall include the recommendations described in subparagraphs (A) and (B) of paragraph (2).

(B) DISTRIBUTION TO THE PUBLIC.—Not later than 60 days after the submission of a report under subparagraph (A), each State P–16 education stewardship commission shall publish and widely distribute the information in the report to the public in the State, including—

(i) all public secondary schools and local educational agencies;

(ii) school counselors;

(iii) P–16 educators;
(iv) institutions of higher education;

and

(v) students and parents, especially

students and parents of students listed in

clauses (i) through (iv) of paragraph

(2)(B) and those entering grade 9 in the

next academic year, to assist students and

parents in making informed and strategic

course enrollment decisions.

SEC. 107. P–16 EDUCATION DATA SYSTEM.

(a) Establishment.—Not later than 2 years after

a State receives a grant under section 104(a)(1)(B), the

State shall establish a Statewide longitudinal data system

that provides each student, upon enrollment in a public

school or in a covered institution in the State, with a

unique identifier that is retained throughout the student’s

enrollment in P–16 education in the State.

(b) Valid Data and Compliance with FERPA.—

The State, through the implementation of the data system

described in subsection (a), shall—

(1) ensure the implementation and use of valid

and reliable secondary school dropout data; and

(2) ensure that the data system is compliant

with the Family Educational Rights and Privacy Act

(c) Required Elements of a Statewide Data System.—The State shall ensure that the data system described in subsection (a) includes the following elements:

(1) A unique statewide student identifier.
(2) Student-level enrollment, demographic, and program participation information.
(3) Individual students’ yearly test records.
(4) Information on students not tested by grade and subject.
(5) A teacher identifier system with the ability to match teachers to students.
(6) Student-level transcript information, including information on courses completed and grades earned.
(7) Student-level college readiness test scores.
(8) Student-level information about the points at which students exit, transfer in, transfer out, drop out, or graduate P–16 education.
(9) The capacity to communicate with higher education data systems.
(10) A State data audit system assessing data quality, validity, and reliability.

(d) Functions of the Statewide Data System.—In implementing the data system described in subsection (a), the State shall—
(1) identify factors that correlate to students’ ability to successfully engage in and complete post-secondary-level general education coursework without the need for prior developmental coursework;

(2) identify factors to increase the percentage of low-income and minority students who are academically prepared to enter and successfully complete postsecondary-level general education coursework; and

(3) use data to otherwise inform education policy and practice.

(c) Existing Data Systems.—A State may employ, coordinate, or revise an existing data system for purposes of this section if such data system produces valid and reliable information that satisfies the requirements of subsections (b) through (d).

SEC. 108. REPORTS; TECHNICAL ASSISTANCE.

(a) State Reports.—

(1) Annual report.—Each State that receives a grant under section 104 shall submit an annual report to the Secretary for each year of the grant period that shall include a description of the activities undertaken under the grant to improve academic readiness for postsecondary-level general education coursework and course completion.
(2) DISSEMINATION.—Each State shall prepare and widely disseminate the report described in paragraph (1) to the public in the State, including secondary schools, local educational agencies, school counselors, P–16 educators, institutions of higher education, students, and parents.

(b) SECRETARY REPORTS.—

(1) ANNUAL REPORT.—The Secretary shall submit an annual report to Congress that includes—

(A) findings from the State reports submitted under subsection (a)(1);

(B) a description of the actions taken by the Department of Education to assist States with creating P–16 education stewardship commissions and P–16 education data systems;

(C) a description of the actions and incentives planned by the States’ P–16 education stewardship commissions—

(i) to help States align academic standards, courses, and academic assessments with postsecondary academic expectations, courses, and assessments;

(ii) to help States increase the percentage of minority and low-income stu-
students prepared to enter and succeed at the postsecondary level; and

(iii) to decrease postsecondary developmental coursework enrollment rates of minority and low-income students;

(D) a description of the actions and incentives planned to help States reduce postsecondary developmental coursework enrollment rates;

(E) an assessment of the effectiveness of P–16 education stewardship commissions in improving college readiness and eliminating the need for developmental coursework; and

(F) recommendations regarding how to make the P–16 education stewardship commissions more effective, and whether the establishment of such commissions should be encouraged throughout the United States.

(2) AVAILABILITY.—The Secretary shall make the annual report described in paragraph (1) available to the public and to each State and institution of higher education.

(e) TECHNICAL ASSISTANCE.—The Secretary shall provide, to the extent practicable, technical assistance to
States and institutions of higher education seeking technical assistance under this title.

SEC. 109. AUTHORIZATION OF APPROPRIATIONS.

There are authorized to be appropriated to carry out this title $55,000,000 for fiscal year 2007 and such sums as may be necessary for each of fiscal years 2008 through 2011.

TITLE II—NATIONAL SCIENCE FOUNDATION MAGNET SCHOOLS AND INNOVATION-BASED LEARNING

SEC. 201. GENERAL DEFINITIONS.

Except as otherwise provided, the terms used in this title have the meanings given the terms in section 9101 of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 7801).

SEC. 202. MAGNET SCHOOLS.

(a) PURPOSE.—The purpose of this section is to assist in the promotion of innovation and competitiveness by providing financial assistance to eligible local educational agencies for—

(1) the development and implementation of magnet school programs that will assist eligible local educational agencies in achieving systemic reforms and providing all students the opportunity to meet
challenging State academic content standards and student academic achievement standards;

(2) the development and design of innovative educational methods, practices, and curriculum that promote student achievement in science, mathematics, and technology courses;

(3) improving the capacity of eligible local educational agencies, including through professional development, to continue operating magnet schools after Federal funding for the magnet schools is terminated; and

(4) ensuring that students enrolled in such schools have access to a high quality education that will enable such students to succeed academically and enroll in postsecondary education at a high level.

(b) DEFINITIONS.—In this section:

(1) DIRECTOR.—The term “Director” means the Director of the National Science Foundation.

(2) ELIGIBLE LOCAL EDUCATIONAL AGENCY.—The term “eligible local educational agency” means a local educational agency described in section 5304 of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 7231c).
(3) Magnet School.—The term “magnet school” means a public elementary school or public secondary school that—

(A) offers a curriculum focused on science, mathematics, and technology; and

(B) attracts a substantial number of students from different racial backgrounds.

(c) Program Authorized.—The Director, in accordance with this section, is authorized to award grants to eligible local educational agencies, and consortia of such agencies where appropriate, to carry out the purpose of this section for magnet schools.

(d) Applications and Requirements.—

(1) Applications.—An eligible local educational agency, or consortium of such agencies, desiring to receive a grant under this section shall submit an application to the Director at such time, in such manner, and containing such information and assurances as the Director may reasonably require.

(2) Information and Assurances.—Each application submitted under paragraph (1) shall include—

(A) a description of—
(i) how a grant awarded under this section will be used to promote instruction in science, mathematics, and technology;

(ii) the manner and extent to which the magnet school program will increase student academic achievement in the instructional areas offered by the school;

(iii) how the applicant will continue the magnet school program after assistance under this section is no longer available;

(iv) how grant funds under this section will be used—

(I) to improve student academic achievement for all students attending the magnet school programs; and

(II) to implement services and activities that are consistent with programs under part A of title I of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 6311 et seq.); and

(v) the criteria to be used in selecting students to attend the proposed magnet school program; and
(B) assurances that the applicant will—

(i) use grant funds under this section for the purpose specified in subsection (a);

(ii) employ highly qualified teachers in the courses of instruction assisted under this section; and

(iii) carry out a high-quality education program that will encourage greater parental involvement in decision making.

(e) PRIORITY.—In awarding grants under this section, the Director shall give priority to applicants that propose to carry out new magnet school programs or significantly revise existing magnet school programs.

(f) USE OF FUNDS.—

(1) IN GENERAL.—Grant funds made available under this section may be used by an eligible local educational agency or consortium of such agencies—

(A) for planning and promotional activities directly related to the development, expansion, continuation, or enhancement of academic programs and services offered at magnet schools;

(B) for the acquisition of books, materials, and equipment (including computers), and the maintenance and operation of materials, equip-
ment, and computers, necessary to conduct programs in magnet schools;

(C) for the compensation, or subsidization of the compensation, of elementary school and secondary school teachers who are highly qualified, and instructional staff where applicable, who are necessary to conduct programs in magnet schools;

(D) for activities, which may include professional development, that will build the capacity of the eligible local educational agency, or consortium of such agencies, to operate magnet school programs once the grant period has ended;

(E) to enable the eligible local educational agency, or consortium of such agencies, to have more flexibility in the administration of a magnet school program in order to serve students attending a school who are not enrolled in a magnet school program; and

(F) to enable the eligible local educational agency, or consortium of such agencies, to have flexibility in designing magnet schools for students in all elementary school and secondary school grades.
(2) **SPECIAL RULE.**—Grant funds under this section may be used for activities described in paragraphs (2) and (3) of subsection (a) only if the activities are directly related to improving—

(A) student academic achievement based on the State’s challenging academic content standards and student academic achievement standards; or

(B) student skills in or knowledge of mathematics, science, and technology as well as other core academic subjects.

(g) **PROHIBITION.**—Grants under this section may not be used for transportation or any activity that does not augment academic improvement.

(h) **LIMITATION.**—

(1) **DURATION OF AWARDS.**—A grant under this section shall be awarded for a period that shall not exceed 3 fiscal years.

(2) **LIMITATION ON PLANNING FUNDS.**—An eligible local educational agency, or consortium of agencies, may expend for planning (professional development shall not be considered to be planning for the purposes of this subsection) not more than 50 percent of the grant funds received under this section for the first year of the program and not more
than 15 percent of such funds for each of the second
and third such years.

(3) AMOUNT.—No eligible local educational
agency, or consortium of such agencies, awarded a
grant under this section shall receive more than
$4,000,000 under this section for any one fiscal
year.

(4) TIMING.—To the extent practicable, the
Secretary shall award grants for any fiscal year
under this section not later than July 1 of the appli-
cable fiscal year.

(i) EVALUATIONS.—

(1) RESERVATION.—The Director may reserve
not more than 2 percent of the funds appropriated
to carry out this section for any fiscal year to carry
out evaluations, provide technical assistance, and
carry out dissemination projects with respect to
magnet school programs assisted under this section.

(2) CONTENTS.—Each evaluation described in
paragraph (1) at a minimum shall address—

(A) how and the extent to which magnet
school programs lead to educational quality and
improvement;
(B) the extent to which magnet school pro-
grams enhance student access to high quality
education; and

(C) the extent to which magnet school pro-
grams differ from other school programs in
terms of the organizational characteristics and
resource allocation of such magnet school pro-
grams.

SEC. 203. INNOVATION-BASED EXPERIENTIAL LEARNING.

(a) PILOT PROGRAM.—

(1) PROGRAM AUTHORIZED.—The Director of
the National Science Foundation shall award grants
to local educational agencies to enable the local edu-
cational agencies to implement innovation-based ex-
periential learning in a total of 500 elementary
schools or middle schools in the United States.

(2) APPLICATION.—A local educational agency
desiring a grant under this section shall submit an
application at such time, in such manner, and ac-
companied by such information as the Director of
the National Science Foundation may require.

(b) AUTHORIZATION OF APPROPRIATIONS.—There
are authorized to be appropriated to carry out this section
$10,000,000 for fiscal year 2007 and $20,000,000 for
each of the fiscal years 2008 and 2009.
TITLE III—TEACHER TRAINING AND PROFESSIONAL DEVELOPMENT

SEC. 301. BACCALAUREATE DEGREES IN MATHEMATICS AND SCIENCE WITH TEACHER CERTIFICATION.

(a) Definitions.—Unless otherwise specified in this section, the terms used in this section have the meanings given the terms in section 9101 of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 7801).

(b) Grants Authorized.—From the amounts authorized under subsection (h), the Secretary shall award grants to eligible recipients to enable the eligible recipients to provide integrated courses of study in mathematics, science, or engineering and teacher education, that lead to a baccalaureate degree in mathematics, science, or engineering with concurrent teacher certification.

(c) Definition of Eligible Recipient.—In this section, the term “eligible recipient” means any department of mathematics, science, or engineering of an institution of higher education.

(d) Award and Duration.—

(1) Award.—The Secretary shall award a grant under this section to each eligible recipient that collaborates with a teacher preparation program...
at an institution of higher education to develop under-graduate degrees in mathematics, science, or engineering with pedagogy education and teacher certification.

(2) DURATION.—The Secretary shall award a grant under this section to each eligible recipient in an amount that is not more than $1,000,000 per year for a period of 5 years.

(e) MATCHING REQUIREMENT.—Each eligible recipient receiving a grant under this section shall provide, from non-Federal sources (provided in cash or in kind), to carry out the activities supported by the grant, an amount that is not less than 25 percent of the amount of the grant for the first year of the grant, not less than 35 percent of the amount of the grant for the second year of the grant, and not less than 50 percent of the amount of the grant for each succeeding fiscal year of the grant.

(f) APPLICATION.—

(1) IN GENERAL.—Each eligible recipient desiring a grant under this section shall submit an application to the Secretary at such time, in such manner, and accompanied by such information as the Secretary may require.

(2) CONTENTS.—Each application submitted pursuant to paragraph (1) shall include—
(A) a description of how the eligible recipient will use grant funds to develop and administer undergraduate degrees in mathematics, science, or engineering with pedagogy education and teacher certification, including a description of proposed high-quality research and laboratory experiences that will be available to students;

(B) a description of how the mathematics, science, or engineering departments will coordinate with a teacher preparation program to carry out the activities authorized under this section;

(C) a resource assessment that describes the resources available to the eligible recipient, the intended use of the grant funds, and the commitment of the resources of the eligible recipient to the activities assisted under this section, including financial support, faculty participation, time commitments, and continuation of the activities assisted under the grant when the grant period ends;

(D) an evaluation plan, including measurable objectives and benchmarks for—

(i) improving student retention;
(ii) increasing the percentage of highly qualified mathematics and science teachers; and

(iii) improving kindergarten through grade 12 student academic performance in mathematics and science;

(E) a description of the activities the eligible recipient will conduct to ensure graduates of the program keep informed of the latest developments in the respective fields;

(F) a description of how the eligible recipient will work with local educational agencies in the area in which the eligible recipient is located and, to the extent practicable, with local educational agencies where graduates of the program authorized under this section are employed, to ensure that the activities required under subsection (g)(3) are carried out; and

(G) a description of efforts to encourage applications to the program from underrepresented groups, including women and minority groups.

(g) AUTHORIZED ACTIVITIES.—An eligible recipient shall use the funds received under this section—
(1) to develop and administer teacher education and certification programs with in-depth content education and subject-specific education in pedagogy, leading to baccalaureate degrees in mathematics, science, or engineering with concurrent teacher certification;

(2) to offer high-quality research experiences and training in the use of educational technology; and

(3) to work with local educational agencies in the area in which the eligible recipient is located and, to the extent practicable, with local educational agencies where graduates of the program authorized under this section are employed, to support the new teachers during the initial years of teaching, which may include—

(A) promoting effective teaching skills;

(B) development of skills in educational interventions based on scientifically-based research;

(C) providing opportunities for high-quality teacher mentoring;

(D) providing opportunities for regular professional development;
(E) interdisciplinary collaboration among exemplary teachers, faculty, researchers, and other staff who prepare new teachers; and

(F) allowing time for joint lesson planning and other constructive collaborative activities.

(h) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to carry out this section $30,000,000 for fiscal year 2007 and such sums as may be necessary for each of the fiscal years 2008 through 2013.

SEC. 302. TEACHERS PROFESSIONAL DEVELOPMENT INSTITUTES.

Title II of the Higher Education Act of 1965 (20 U.S.C. 1021 et seq.) is amended by adding at the end the following:

“PART C—TEACHERS PROFESSIONAL DEVELOPMENT INSTITUTES

“SEC. 241. SHORT TITLE.

“This part may be cited as the ‘Teachers Professional Development Institutes Act’.

“SEC. 242. PURPOSE.

“The purpose of this part is to provide Federal assistance to support the establishment and operation of Teachers Professional Development Institutes for local edu-
cational agencies that serve significant low-income populations in States throughout the Nation—

“(1) to promote innovative and effective approaches to improving teacher quality through the use of the Teacher Institute Model that encourages collaboration between urban school teachers and university faculty;

“(2) to improve student learning; and

“(3) to enhance the quality of teaching by strengthening the subject matter mastery and pedagogical skills of current teachers through continuing teacher preparation, particularly with respect to mathematics, science, technology, and engineering.

“SEC. 243. DEFINITIONS.

“In this part:

“(1) POVERTY LINE.—The term ‘poverty line’ means the poverty line (as defined by the Office of Management and Budget, and revised annually in accordance with section 673(2) of the Community Services Block Grant Act) applicable to a family of the size involved.

“(2) SIGNIFICANT LOW-INCOME POPULATION.—The term ‘significant low-income population’ means a student population of which not less than 25 per-
cent are from families with incomes below the poverty line.

“(3) STATE.—The term ‘State’ means each of the several States of the United States, the District of Columbia, and the Commonwealth of Puerto Rico.

“(4) TEACHERS PROFESSIONAL DEVELOPMENT INSTITUTE.—The term ‘Teachers Professional Development Institute’ means a partnership or joint venture between or among 1 or more institutions of higher education, and 1 or more local educational agencies serving a significant low-income population, which partnership or joint venture—

“(A) is entered into for the purpose of improving the quality of teaching and learning through collaborative seminars designed to enhance both the subject matter and the pedagogical resources of the seminar participants, particularly with respect to mathematics, science, technology, and engineering; and

“(B) works in collaboration to determine the direction and content of the collaborative seminars.

“SEC. 244. GRANT AUTHORITY.

“(a) IN GENERAL.—The Secretary is authorized—
“(1) to award grants to Teachers Professional Development Institutes to encourage the establishment and operation of Teachers Professional Development Institutes where not less than 50 percent of collaborative seminars are targeted to the fields of mathematics, science, technology, and engineering; and

“(2) to provide technical assistance, either directly or through existing Teachers Professional Development Institutes, to assist local educational agencies and institutions of higher education in preparing to establish and in operating Teachers Professional Development Institutes.

“(b) SELECTION CRITERIA.—In selecting a Teachers Professional Development Institute for a grant under this part, the Secretary shall consider—

“(1) the extent to which the proposed Teachers Professional Development Institute will serve a community with a significant low-income population;

“(2) the extent to which the proposed Teachers Professional Development Institute will follow the Understandings and Necessary Procedures that have been developed following the National Demonstration Project;
“(3) the extent to which the local educational agency participating in the proposed Teachers Professional Development Institute has a high percentage of teachers who are unprepared or under prepared to teach the core academic subjects the teachers are assigned to teach, particularly in the areas of mathematics, science, technology, and engineering; and

“(4) the extent to which the proposed Teachers Professional Development Institute will receive a level of support from the community and other sources that will ensure the requisite long-term commitment for the success of a Teachers Professional Development Institute.

“(c) CONSULTATION.—

“(1) IN GENERAL.—In evaluating applications under subsection (b), the Secretary may request the advice and assistance of existing Teachers Professional Development Institutes.

“(2) STATE AGENCIES.—If the Secretary receives 2 or more applications for new Teachers Professional Development Institutes that propose serving the same State, the Secretary shall consult with the State educational agency regarding the applications.
“(d) FISCAL AGENT.—For the purpose of this part, an institution of higher education participating in a Teachers Professional Development Institute shall serve as the fiscal agent for the receipt of grant funds under this part.

“(e) LIMITATIONS.—A grant under this part—

“(1) shall be awarded for a period not to exceed 5 years; and

“(2) shall not exceed 50 percent of the total costs of the eligible activities, as determined by the Secretary.

“SEC. 245. ELIGIBLE ACTIVITIES.

“(a) IN GENERAL.—A Teachers Professional Development Institute that receives a grant under this part may use the grant funds—

“(1) for the planning and development of applications for the establishment of Teachers Professional Development Institutes;

“(2) to provide assistance to existing Teachers Professional Development Institutes established during the National Demonstration Project to enable the Teachers Professional Development Institutes—

“(A) to further develop existing Teachers Professional Development Institutes; or
“(B) to support the planning and development of applications for new Teachers Professional Development Institutes;

“(3) for the salary and necessary expenses of a full-time director to plan and manage such Teachers Professional Development Institute and to act as liaison between the participating local educational agency and institution of higher education;

“(4) to provide staff, equipment, and supplies, and to pay other operating expenses for the development and maintenance of Teachers Professional Development Institutes;

“(5) to provide stipends for teachers participating in collaborative seminars in the sciences and humanities, and to provide remuneration for those members of the higher education faculty who lead the seminars; and

“(6) to provide for the dissemination through print and electronic means of curriculum units prepared in conjunction with Teachers Professional Development Institutes seminars.

“(b) TECHNICAL ASSISTANCE.—The Secretary may use not more than 25 percent of the funds appropriated to carry out this part to provide technical assistance to facilitate the establishment and operation of Teachers
Professional Development Institutes. For the purpose of this subsection, the Secretary may contract with existing Teachers Professional Development Institutes to provide all or a part of the technical assistance under this subsection.

"SEC. 246. APPLICATION, APPROVAL, AND AGREEMENT.

"(a) In General.—To receive a grant under this part, a Teachers Professional Development Institute shall submit an application to the Secretary that—

"(1) meets the requirement of this part and any regulations under this part;

"(2) includes a description of how the Teachers Professional Development Institute intends to use funds provided under the grant;

"(3) includes such information as the Secretary may require to apply the criteria described in section 244(b);

"(4) includes measurable objectives for the use of the funds provided under the grant; and

"(5) contains such other information and assurances as the Secretary may require.

"(b) Approval.—The Secretary shall—

"(1) promptly evaluate an application received for a grant under this part; and
“(2) notify the applicant within 90 days of the receipt of a completed application of the Secretary’s approval or disapproval of the application.

“(c) AGREEMENT.—Upon approval of an application, the Secretary and the Teachers Professional Development Institute shall enter into a comprehensive agreement covering the entire period of the grant.

“SEC. 247. REPORTS AND EVALUATIONS.

“(a) REPORT.—Each Teachers Professional Development Institute receiving a grant under this part shall report annually on the progress of the Teachers Professional Development Institute in achieving the purpose of this part and the purposes of the grant.

“(b) EVALUATION AND DISSEMINATION.—

“(1) EVALUATION.—The Secretary shall evaluate the activities funded under this part and submit an annual report regarding the activities to the Committee on Health, Education, Labor, and Pensions of the Senate and the Committee on Education and the Workforce of the House of Representatives.

“(2) DISSEMINATION.—The Secretary shall broadly disseminate successful practices developed by Teachers Professional Development Institutes.

“(c) REVOCATION.—If the Secretary determines that a Teachers Professional Development Institute is not
making substantial progress in achieving the purpose of this part and the purposes of the grant by the end of the second year of the grant under this part, the Secretary may take appropriate action, including revocation of further payments under the grant, to ensure that the funds available under this part are used in the most effective manner.

"SEC. 248. AUTHORIZATION OF APPROPRIATIONS.

"There are authorized to be appropriated to carry out this part—

"(1) $4,000,000 for fiscal year 2007;
"(2) $5,000,000 for fiscal year 2008;
"(3) $6,000,000 for fiscal year 2009;
"(4) $7,000,000 for fiscal year 2010; and
"(5) $8,000,000 for fiscal year 2011."

TITLE IV—STEM EDUCATION AND RESEARCH

SEC. 401. DEFINITIONS.

In this title:

(1) INSTITUTION OF HIGHER EDUCATION.—The term “institution of higher education” has the meaning given the term in section 101(a) of the Higher Education Act of 1965 (20 U.S.C. 1001(a)).

(2) PROFESSIONAL SCIENCE MASTER’S DEGREE PROGRAM.—The term “professional science master’s
degree program” means a graduate degree program in science and mathematics that extends science training to strategic planning and business management and focuses on multidisciplinary specialties such as business and information technology (IT), biology and IT (bioinformatics), and computational chemistry.

(3) **SERVICE SCIENCE.**—The term “service science” means curriculums, research programs, and training regimens, including service sciences, management, and engineering (SSME) programs, that exist or that are being developed to teach individuals to apply technology, organizational process management, and industry-specific knowledge to solve complex problems.

(4) **SSME.**—The term “SSME” means the discipline known as service sciences, management, and engineering that—

(A) applies scientific, engineering, and management disciplines to tasks that one organization performs beneficially for others, generally as part of the services sector of the economy; and

(B) integrates computer science, operations research, industrial engineering, business strat-
egy, management sciences, and social and legal sciences, in order to encourage innovation in how organizations create value for customers and shareholders that could not be achieved through such disciplines working in isolation.

**SEC. 402. GRADUATE FELLOWSHIPS AND GRADUATE TRAINEESHIPS.**

(a) **Graduate Research Fellowship Program.**—

(1) **In general.**—During the 5-year period beginning on the date of the enactment of this Act, the Director of the National Science Foundation shall expand the Graduate Research Fellowship Program of the Foundation so that an additional 1250 fellowships are awarded to United States citizens under such Program during such period.

(2) **Extension of fellowship period.**—The Director of the National Science Foundation is authorized to award fellowships under the Graduate Research Fellowship Program for a period of 5 years, subject to funds being made available for such purpose.

(3) **Authorization of appropriations.**—In addition to any other amounts authorized to be appropriated, there are authorized to be appropriated...
$51,000,000 for each of the fiscal years 2007 through 2011 to provide an additional 250 fellowships under the Graduate Research Fellowship Program during each such fiscal year.

(b) **INTEGRATIVE GRADUATE EDUCATION AND RESEARCH TRAINEESHIP PROGRAM.** —

(1) **IN GENERAL.** — During the 5-year period beginning on the date of the enactment of this Act, the Director of the National Science Foundation shall expand the Integrative Graduate Education and Research Traineeship program of the Foundation so that an additional 1,250 United States citizens are awarded grants under such program during such period.

(2) **AUTHORIZATION OF APPROPRIATIONS.** — In addition to any other amounts authorized to be appropriated, there are authorized to be appropriated $51,000,000 for each of the fiscal years 2007 through 2011 to provide grants to an additional 250 individuals under the Integrative Graduate Education and Research Traineeship program during each such fiscal year.

**SEC. 403. PROFESSIONAL SCIENCE MASTER’S DEGREE PROGRAMS.**

(a) **CLEARINGHOUSE.** —
(1) Development.—From amounts appropriated under subsection (c), the Director of the National Science Foundation shall establish a clearinghouse, in collaboration with 4-year institutions of higher education, industries, and Federal agencies that employ science-trained personnel, to share program elements used in successful professional science master’s degree programs.

(2) Availability.—The Director of the National Science Foundation shall make the clearinghouse of program elements developed under paragraph (1) available to institutions of higher education that are developing professional science master’s degree programs.

(b) Pilot Programs.—

(1) Program Authorized.—From amounts appropriated under subsection (c), the Director of the National Science Foundation shall award grants for pilot programs to 4-year institutions of higher education to facilitate the institutions’ creation or improvement of professional science master’s degree programs.

(2) Application.—A 4-year institution of higher education desiring a grant under this section shall submit an application at such time, in such
manner, and accompanied by such information as
the Director of the National Science Foundation
may require. The application shall include—

(A) a description of the professional
science master’s degree program that the insti-
tution of higher education will implement;

(B) the amount of funding from non-Fed-
eral sources, including from private industries,
that the institution of higher education shall
use to support the professional science master’s
degree program; and

(C) an assurance that the institution of
higher education shall encourage students in
the professional science master’s degree pro-
gram to apply for all forms of Federal assist-
ance available to such students, including appli-
cable graduate fellowships and student financial
assistance under title IV of the Higher Edu-
cation Act of 1965 (20 U.S.C. 1070 et seq.).

(3) PREFERENCE FOR ALTERNATIVE FUNDING
sources.—The Director of the National Science
Foundation shall give preference in making awards
to 4-year institutions of higher education seeking
Federal funding to support pilot professional science
master’s degree programs, to those applicants that
secure more than \( \frac{2}{3} \) of the funding for such professional science master’s degree programs from sources other than the Federal Government.

(4) Number of Grants; Time Period of Grants.—

(A) Number of Grants.—Subject to the availability of appropriated funds, the Director of the National Science Foundation shall award grants under paragraph (1) to a maximum of 200 4-year institutions of higher education.

(B) Time Period of Grants.—Grants awarded under this section shall be for one 3-year term. Grants may be renewed only once for a maximum of 2 additional years.

(5) Evaluation and Reports.—

(A) Development of Performance Benchmarks.—Prior to the start of the grant program, the National Science Foundation, in collaboration with 4-year institutions of higher education, shall develop performance benchmarks to evaluate the pilot programs assisted by grants under this section.

(B) Evaluation.—For each year of the grant period, the Director of the National Science Foundation, in consultation with 4-year
institutions of higher education, industry, and Federal agencies that employ science-trained personnel, shall complete an evaluation of each pilot program assisted by grants under this section. Any pilot program that fails to satisfy the performance benchmarks developed under subparagraph (A) shall not be eligible for further funding.

(C) REPORT.—Not later than 180 days after the completion of an evaluation described in subparagraph (B), the Director of the National Science Foundation, in consultation with industries and Federal agencies that employ science-trained personnel, shall submit a report to Congress that includes—

(i) the results of the evaluation described in subparagraph (B); and

(ii) recommendations for administrative and legislative action that could optimize the effectiveness of the pilot programs, as the Director determines to be appropriate.

(e) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated to carry out this section
SEC. 404. INCREASED SUPPORT FOR SCIENCE EDUCATION THROUGH THE NATIONAL SCIENCE FOUNDATION.

There are authorized to be appropriated to carry out the science, mathematics, engineering, and technology talent expansion program under section 8(7) of the National Science Foundation Authorization Act of 2002 (Public Law 107–368, 116 Stat. 3042) the following amounts:

(1) For fiscal year 2007, $35,000,000.
(2) For fiscal year 2008, $50,000,000.
(3) For fiscal year 2009, $100,000,000.
(4) For fiscal year 2010, $150,000,000.

SEC. 405. A NATIONAL COMMITMENT TO BASIC RESEARCH.

(a) Plan for Increased Research.—Not later than 180 days after the date of the enactment of this Act, the Director of the National Science Foundation shall submit to Congress a comprehensive, multiyear plan that describes how the funds authorized in subsection (b) shall be used. Such plan shall be developed with a focus on utilizing basic research in physical science and engineering to optimize the United States economy as a global competitor and leader in productive innovation.
(b) Increased Funding for National Science Foundation.—There are authorized to be appropriated to the National Science Foundation for the purpose of doubling research funding the following amounts:

(1) $6,440,000,000 for fiscal year 2007.
(2) $7,280,000,000 for fiscal year 2008.
(3) $8,120,000,000 for fiscal year 2009.
(4) $8,960,000,000 for fiscal year 2010.
(5) $9,800,000,000 for fiscal year 2011.

(c) Recommendations for Research and Development Funding.—Not later than 1 year after the date of the enactment of this Act, the Director of the Office of Science and Technology Policy shall evaluate and, as appropriate, submit to Congress recommendations for an increase in funding for research and development in physical sciences and engineering in consultation with agencies and departments of the United States with significant research and development budgets.

SEC. 406. Study on Service Science.

(a) Sense of Congress.—It is the sense of Congress that, in order to strengthen the competitiveness of United States enterprises and institutions and to prepare the people of the United States for high-wage, high-skill employment, the Federal Government should better under-
stand and respond strategically to the emerging vocation and learning discipline known as service science.

(b) STUDY.—Not later than 270 days after the date of the enactment of this Act, the Director of the National Science Foundation shall conduct a study and report to Congress regarding how the Federal Government should support, through research, education, and training, the new discipline of service science.

(e) OUTSIDE RESOURCES.—In conducting the study under subsection (b), the Director of the National Science Foundation shall consult with leaders from 2- and 4-year institutions of higher education, leaders from corporations, and other relevant parties.