

WOMEN IN AEROSPACE EDUCATION ACT

DECEMBER 18, 2017.—Committed to the Committee of the Whole House on the State of the Union and ordered to be printed

Mr. SMITH of Texas, from the Committee on Science, Space, and Technology, submitted the following

R E P O R T

[To accompany H.R. 4254]

[Including cost estimate of the Congressional Budget Office]

The Committee on Science, Space, and Technology, to whom was referred the bill (H.R. 4254) to amend the National Science Foundation Authorization Act of 2002 to strengthen the aerospace workforce pipeline by the promotion of Robert Noyce Teacher Scholarship Program and National Aeronautics and Space Administration internship and fellowship opportunities to women, and for other purposes, having considered the same, report favorably thereon with an amendment and recommend that the bill as amended do pass.

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The amendment is as follows:  
Strike all after the enacting clause and insert the following:

**SECTION 1. SHORT TITLE.**

This Act may be cited as the “Women in Aerospace Education Act”.

**SEC. 2. ROBERT NOYCE TEACHER SCHOLARSHIP PROGRAM FELLOWSHIP OPPORTUNITIES.**

(a) IN GENERAL.—The National Science Foundation Authorization Act of 2002 (Public Law 107–368; 42 U.S.C. 1862n et seq.) is amended—

(1) in section 10(a)(3)(A)(iv), by inserting “, including research experiences at national laboratories and NASA centers” before the semicolon; and

(2) in section 10A(c)(4)—

(A) in subparagraph (A), by striking “and” at the end;

(B) in subparagraph (B), by striking the period at the end and inserting “, and”; and

(C) by adding at the end the following:

“(C) providing internship opportunities for fellows, including research experiences at national laboratories and NASA Centers.”.

(b) EFFECTIVE DATE.—The amendments made by subsection (a) shall apply with respect to grants awarded on or after October 1, 2018.

**SEC. 3. NASA INTERNSHIP AND FELLOWSHIP OPPORTUNITIES.**

Not later than October 1, 2018, the Administrator of the National Aeronautics and Space Administration (in this section referred to as “NASA”) shall institute a process to prioritize the recruitment of qualified candidates who are women or individuals who are historically underrepresented in the fields of science, technology, engineering, and mathematics (STEM) and computer science for internships and fellowships at NASA with relevance to the aerospace sector and related fields.

COMMITTEE STATEMENT AND VIEWS

PURPOSE AND SUMMARY

H.R. 4254, the “Women in Aerospace Education Act”, is sponsored by Rep. Stephen Knight and Rep. Elizabeth Esty. The purpose of H.R. 4254 is to strengthen the aerospace workforce pipeline through the promotion of the Robert Noyce Teacher Scholarship Program and NASA internship and fellowship opportunities to women.

BACKGROUND AND NEED FOR LEGISLATION

A fifth of U.S. aerospace engineers are of retirement age and are beginning to exit the workforce, which will create a shortfall in the aerospace workforce, affecting national security preparedness.

Women represent only about one-quarter of all science, technology, engineering, and mathematics (STEM) workers and represent approximately 15 percent of all aerospace engineers. In order to improve the STEM education pipeline, more young American students, including women, must pursue STEM education all the way through completion of their degree. Mentorship plays an important role in encouraging young women to pursue STEM careers.

The Robert Noyce Teacher Scholarship Program, which helps give STEM majors and professionals financial stipends and training assistance from the National Science Foundation (NSF) in return for teaching service, on a limited basis, is providing scholars an opportunity to gain research experience in NASA Centers and national laboratories. Once scholars become certified and go on to teach K–12 in underserved schools, they can draw upon the work they did on public initiatives in science and technology.

H.R. 4254, as amended, directs NSF to allow Noyce Scholars and Noyce Fellowship recipient institutions to use awarded funds to en-

courage internship experiences for bachelors and masters students at national laboratories and NASA centers. The bill also encourages NASA to more actively promote its internship and fellowship opportunities to women and individuals from historically underrepresented groups.

#### LEGISLATIVE HISTORY

On November 15, the full Committee amended and approved by voice vote H.R. 4254, the Women in Aerospace Education Act.

#### COMMITTEE VIEWS

The Committee encourages the NSF Director, when implementing the Robert Noyce Teacher Scholarship Program, to prioritize outreach to women and other individuals from groups historically underrepresented in aerospace engineering and related fields.

#### SECTION-BY-SECTION

##### *Sec. 1. Short title*

Women in Aerospace Education Act.

##### *Sec. 2. Robert Noyce Teacher Scholarship Program fellowship opportunities*

This section amends section 10 and section 10A of the National Science Foundation Authorization Act of 2002 to include providing research experiences at national laboratories and NASA centers.

##### *Sec. 3. NASA internship and fellowship opportunities*

This section requires the NASA Administrator to prioritize the recruitment of female candidates or other underrepresented individuals in STEM fields for computer science and aerospace internships and fellowships at NASA.

#### EXPLANATION OF AMENDMENTS

An amendment offered by Representative Stephen Knight was adopted by the Committee. The amendment replaced subsection 2(a) to authorize the Noyce Program to provide its fellows and scholars research and internship experiences at national laboratories and NASA centers.

#### COMMITTEE CONSIDERATION

On November 15, 2017, the Committee met in open session and ordered reported favorably the bill, H.R. 4254, as amended, by voice vote, a quorum being present.

#### APPLICATION OF LAW TO THE LEGISLATIVE BRANCH

Section 102(b)(3) of Public Law 104–1 requires a description of the application of this bill to the legislative branch where the bill relates to the terms and conditions of employment or access to public services and accommodations. This bill would strengthen the aerospace workforce pipeline through the promotion of the Robert Noyce Teacher Scholarship Program and NASA internship and fel-

lowship opportunities to women. As such, this bill does not relate to employment or access to public services and accommodations.

#### STATEMENT OF OVERSIGHT FINDINGS AND RECOMMENDATIONS OF THE COMMITTEE

In compliance with clause 3(c)(1) of rule XIII and clause (2)(b)(1) of rule X of the Rules of the House of Representatives, the Committee's oversight findings and recommendations are reflected in the descriptive portions of this report.

#### STATEMENT OF GENERAL PERFORMANCE GOALS AND OBJECTIVES

H.R. 4254 would strengthen the aerospace workforce pipeline by the promotion of the Robert Noyce Teacher Scholarship Program and NASA internship and fellowship opportunities to women.

#### DUPLICATION OF FEDERAL PROGRAMS

No provision of H.R. 4254 establishes or reauthorizes a program of the Federal Government known to be duplicative of another Federal program, a program that was included in any report from the Government Accountability Office to Congress pursuant to section 21 of Public Law 111-139, or a program related to a program identified in the most recent Catalog of Federal Domestic Assistance.

#### DISCLOSURE OF DIRECTED RULE MAKINGS

The Committee estimates that enacting H.R. 4254 does not direct the completion of any specific rule makings within the meaning of 5 U.S.C. 551.

#### FEDERAL ADVISORY COMMITTEE ACT

The Committee finds that the legislation does not establish or authorize the establishment of an advisory committee within the definition of 5 U.S.C. App., Section 5(b).

#### UNFUNDED MANDATE STATEMENT

Section 423 of the Congressional Budget and Impoundment Control Act (as amended by Section 101(a)(2) of the Unfunded Mandates Reform Act, P.L. 104-4) requires a statement as to whether the provisions of the reported include unfunded mandates. In compliance with this requirement the Committee has received a letter from the Congressional Budget Office included herein.

#### EARMARK IDENTIFICATION

H.R. 4254 does not include any congressional earmarks, limited tax benefits, or limited tariff benefits as defined in clause 9 of rule XXI.

#### COMMITTEE ESTIMATE

Clause 3(d)(2) of rule XIII of the Rules of the House of Representatives requires an estimate and a comparison by the Committee of the costs that would be incurred in carrying out H.R. 4254. However, clause 3(d)(3)(B) of that rule provides that this requirement does not apply when the Committee has included in its

report a timely submitted cost estimate of the bill prepared by the Director of the Congressional Budget Office under section 402 of the Congressional Budget Act.

BUDGET AUTHORITY AND CONGRESSIONAL BUDGET OFFICE COST  
ESTIMATE

With respect to the requirements of clause 3(c)(2) of rule XIII of the Rules of the House of Representatives and section 308(a) of the Congressional Budget Act of 1974 and with respect to requirements of clause (3)(c)(3) of rule XIII of the Rules of the House of Representatives and section 402 of the Congressional Budget Act of 1974, the Committee has received the following cost estimate for H.R. 4254 from the Director of Congressional Budget Office:

U.S. CONGRESS,  
CONGRESSIONAL BUDGET OFFICE,  
*Washington, DC, December 5, 2017.*

Hon. LAMAR SMITH,  
*Chairman, Committee on Science, Space, and Technology,  
House of Representatives, Washington, DC.*

DEAR MR. CHAIRMAN: The Congressional Budget Office has prepared the enclosed cost estimate for H.R. 4254, the Women in Aerospace Education Act.

If you wish further details on this estimate, we will be pleased to provide them. The CBO staff contact is Janani Shankaran.

Sincerely,

KEITH HALL,  
*Director.*

Enclosure.

*H.R. 4254—Women in Aerospace Education Act*

H.R. 4254 would modify the requirements of certain National Science Foundation (NSF) programs that promote wider participation by women in internships and fellowships with the National Aeronautics and Space Administration (NASA) and the Department of Energy's national laboratories. Those changes would apply to NSF grants awarded on or after October 1, 2018. The bill also would require NASA to prioritize the recruitment of qualified women and people in other historically underrepresented groups in science, technology, engineering, and mathematics and in computer science internships and fellowships.

CBO expects that implementing H.R. 4254 could lead to a small increase in the administrative work of the NSF and NASA to modify program requirements and to ensure compliance. Using information from those agencies, CBO estimates that implementing the bill would cost less than \$500,000 over the 2018–2022 period; any such spending would be subject to the availability of appropriated funds.

Enacting H.R. 4254 would not affect direct spending or revenues; therefore, pay-as-you-go procedures do not apply.

CBO estimates that enacting H.R. 4254 would not increase net direct spending or on-budget deficits in any of the four consecutive 10-year periods beginning in 2028.

H.R. 4254 contains no intergovernmental or private-sector mandates as defined in the Unfunded Mandates Reform Act.

The CBO staff contact for this estimate is Janani Shankaran. The estimate was approved by H. Samuel Papenfuss, Deputy Assistant Director for Budget Analysis.

CHANGES IN EXISTING LAW MADE BY THE BILL, AS REPORTED

In compliance with clause 3(e) of rule XIII of the Rules of the House of Representatives, changes in existing law made by the bill, as reported, are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new matter is printed in italic, and existing law in which no change is proposed is shown in roman):

**NATIONAL SCIENCE FOUNDATION AUTHORIZATION ACT  
OF 2002**

\* \* \* \* \*

**SEC. 10. ROBERT NOYCE TEACHER SCHOLARSHIP PROGRAM.**

(a) SCHOLARSHIP PROGRAM.—

(1) IN GENERAL.—The Director shall carry out a program to award grants to eligible entities to recruit and train mathematics and science teachers and to provide scholarships and stipends to individuals participating in the program. Such program shall be known as the “Robert Noyce Teacher Scholarship Program”.

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

(3) USE OF GRANTS.—A grant provided under this section shall be used by the eligible entity—

(A) to develop and implement a program to recruit and prepare undergraduate students majoring in science, technology, engineering, and mathematics at the eligible entity (and participating institutions of higher education of the consortium, if applicable) to become qualified as mathematics and science teachers, through—

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

(ii) offering academic courses and early clinical teaching experiences designed to prepare students participating in the program to teach in elementary schools and secondary schools, including such preparation as is necessary to meet requirements for teacher certification or licensing;

(iii) offering programs to students participating in the program, both before and after the students receive their baccalaureate degree, to enable the students to become better mathematics and science teachers, to fulfill the service requirements of this section, and to exchange ideas with others in the students’ fields; and

(iv) providing summer internships for freshman and sophomore students participating in the program, *in-*

*cluding research experiences at national laboratories and NASA centers; or*

(B) to develop and implement a program to recruit and prepare science, technology, engineering, or mathematics professionals to become qualified as mathematics and science teachers, through—

(i) administering stipends in accordance with subsection (d);

(ii) offering academic courses and clinical teaching experiences designed to prepare stipend recipients to teach in elementary schools and secondary schools served by a high need local educational agency, including such preparation as is necessary to meet requirements for teacher certification or licensing; and

(iii) offering programs to stipend recipients, both during and after matriculation in the program for which the stipend is received, to enable recipients to become better mathematics and science teachers, to fulfill the service requirements of this section, and to exchange ideas with others in the students' fields.

(4) ELIGIBILITY REQUIREMENT.—

(A) IN GENERAL.—To be eligible to receive a grant under this section, an eligible entity shall ensure that specific faculty members and staff from the science, technology, engineering, and mathematics departments and specific education faculty of the eligible entity (and participating institutions of higher education of the consortium, if applicable) are designated to carry out the development and implementation of the program.

(B) INCLUSION OF MASTER TEACHERS.—An eligible entity (and participating institutions of higher education of the consortium, if applicable) receiving a grant under this section may also include master teachers in the development of the pedagogical content of the program and in the supervision of students participating in the program in their clinical teaching experiences.

(C) ACTIVE PARTICIPANTS.—No eligible entity (or participating institution of higher education of the consortium, if applicable) shall be eligible for a grant under this section unless faculty from the science, technology, engineering, and mathematics departments of the eligible entity (and participating institutions of higher education of the consortium, if applicable) are active participants in the program.

(5) AWARDS.—In awarding grants under this section, the Director shall ensure that the eligible entities (and participating institutions of higher education of the consortia, if applicable) represent a variety of types of institutions of higher education. In support of this goal, the Director shall broadly disseminate information about when and how to apply for grants under this section, including by conducting outreach to—

(A) historically Black colleges and universities that are part B institutions, as defined in section 322(2) of the Higher Education Act of 1965 (20 U.S.C. 1061(2)); and

(B) minority institutions, as defined in section 365(3) of the Higher Education Act of 1965 (20 U.S.C. 1067k(3)).

(6) SUPPLEMENT NOT SUPPLANT.—Grant funds provided under this section shall be used to supplement, and not supplant, other Federal or State funds available for the type of activities supported by the grant.

(b) SELECTION PROCESS.—

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

(A) in the case of an applicant that is submitting an application on behalf of a consortium of institutions of higher education, a description of the participating institutions of higher education and the roles and responsibilities of each such institution;

(B) a description of the program that the applicant intends to operate, including the number of scholarships and summer internships or the size and number of stipends the applicant intends to award, the type of activities proposed for the recruitment of students to the program, and the selection process that will be used in awarding the scholarships or stipends;

(C) evidence that the applicant has the capability to administer the program in accordance with the provisions of this section, which may include a description of any existing programs at the applicant eligible entity (and participating institutions of higher education of the consortium, if applicable) that are targeted to the education of mathematics and science teachers and the number of teachers graduated annually from such programs;

(D) a description of the academic courses and clinical teaching experiences required under subparagraphs (A)(ii) and (B)(ii) of subsection (a)(3), as applicable, including—

(i) a description of the undergraduate program that will enable a student to graduate within 5 years with a major in science, technology, engineering, or mathematics and to obtain teacher certification or licensing;

(ii) a description of the clinical teaching experiences proposed; and

(iii) evidence of agreements between the applicant and the schools or local educational agencies that are identified as the locations at which clinical teaching experiences will occur;

(E) a description of the programs required under subparagraphs (A)(iii) and (B)(iii) of subsection (a)(3), including activities to assist new teachers in fulfilling the teachers' service requirements under this section;

(F) an identification of the applicant eligible entity's science, technology, engineering, and mathematics faculty and its education faculty (and such faculty of participating institutions of higher education of the consortium, if applicable) who will carry out the development and implementation of the program as required under subsection (a)(4); and



(G) a description of the process the applicant will use to fulfill the requirements of subsection (f).

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

(A) the ability of the applicant (and the participating institutions of higher education of the consortium, if applicable) to effectively carry out the program;

(B) the extent to which the applicant's science, technology, engineering, and mathematics faculty and its education faculty (and such faculty of participating institutions of higher education of the consortium, if applicable) have worked or will work collaboratively to design new or revised curricula that recognize the specialized pedagogy required to teach science, technology, engineering, and mathematics effectively in elementary schools and secondary schools;

(C) the extent to which the applicant (and the participating institutions of higher education of the consortium, if applicable) is committed to making the program a central organizational focus;

(D) the degree to which the proposed programming will enable scholarship or stipend recipients to become successful mathematics and science teachers;

(E) the number and academic qualifications of the students who will be served by the program; and

(F) the ability of the applicant (and the participating institutions of higher education of the consortium, if applicable) to recruit students who would otherwise not pursue a career in teaching in elementary schools or secondary schools and students who are individuals identified in section 33 or 34 of the Science and Engineering Equal Opportunities Act (42 U.S.C. 1885a or 1885b).

(c) SCHOLARSHIP REQUIREMENTS.—

(1) IN GENERAL.—Scholarships under this section shall be available only to students who—

(A) are majoring in science, technology, engineering, or mathematics; and

(B) have attained at least junior status in a baccalaureate degree program.

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

(3) AMOUNT.—The Director shall establish for each year the amount to be awarded for scholarships under this section for that year, which shall be not less than \$10,000 per year, except that no individual shall receive for any year more than the cost of attendance at that individual's institution. Full-time students may receive annual scholarships through the completion of a baccalaureate degree program, not to exceed a maximum of 3 years. Part-time students may receive scholarships that

are prorated according to such students' enrollment status, not to exceed 6 years of scholarship support.

(4) SERVICE OBLIGATION.—If an individual receives a scholarship under this section, such individual shall be required to complete, within 8 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 full scholarship award received, with a maximum service requirement of 6 years. Service required under this paragraph shall be performed in a high need local educational agency.

(d) STIPENDS.—

(1) IN GENERAL.—Stipends under this section shall be available only to science, technology, engineering, or mathematics professionals who, while receiving the stipend, are enrolled in a program established under subsection (a)(3)(B).

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

(3) AMOUNT AND DURATION.—Stipends under this section shall be not less than \$10,000 per year, except that no individual shall receive for any year more than the cost of attendance at such individual's institution. Individuals may receive a maximum of 1 year of stipend support, except that if an individual is enrolled in a part-time program, such amount shall be prorated according to the length of the program.

(4) SERVICE OBLIGATION.—If an individual receives a stipend under this section, such individual shall be required to complete, within 4 years after graduation from the program for which the stipend was awarded, 2 years of service as a mathematics or science teacher. Service required under this paragraph shall be performed in a high need local educational agency.

(e) CONDITIONS OF SUPPORT.—As a condition of acceptance of a scholarship or stipend under this section, a recipient of a scholarship or stipend shall enter into an agreement with the eligible entity—

(1) accepting the terms of the scholarship or stipend pursuant to subsection (c) or subsection (d);

(2) agreeing to provide the eligible entity with annual certification of employment and up-to-date contact information and to participate in surveys conducted by the eligible entity as part of an ongoing assessment program; and

(3) establishing that if the service obligation required under this section is not completed, all or a portion of the scholarship or stipend received under this section shall be repaid in accordance with subsection (g).

(f) COLLECTION FOR NONCOMPLIANCE.—

(1) MONITORING COMPLIANCE.—An eligible entity receiving a grant under this section shall, as a condition of participating in the program, enter into an agreement with the Director to

monitor the compliance of scholarship or stipend recipients with their respective service requirements.

(2) COLLECTION OF REPAYMENT.—

(A) IN GENERAL.—In the event that a scholarship or stipend recipient is required to repay the scholarship or stipend under subsection (g), the eligible entity shall—

(i) be responsible for determining the repayment amounts and for notifying the recipient and the Director of the amount owed; and

(ii) collect such repayment amount within a period of time as determined under the agreement described in paragraph (1), or the repayment amount shall be treated as a loan in accordance with subparagraph (C).

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

(C) RETAIN PERCENTAGE.—An eligible entity may retain a percentage of any repayment the eligible entity collects to defray administrative costs associated with the collection. The Director shall establish a single, fixed percentage that will apply to all eligible entities.

(g) FAILURE TO COMPLETE SERVICE OBLIGATION.—

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

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

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

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

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

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

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

(2) AMOUNT OF REPAYMENT.—

(A) LESS THAN ONE YEAR OF SERVICE.—If a circumstance described in paragraph (1) occurs before the completion of 1 year of a service obligation under this section, the total amount of awards received by the individual under this section shall be repaid or such amount shall be treated as a loan to be repaid in accordance with subparagraph (C).

(B) MORE THAN ONE YEAR OF SERVICE.—If a circumstance described in subparagraph (D) or (E) of paragraph (1) occurs after the completion of 1 year of a service obligation under this section—

(i) for a scholarship recipient, the total amount of scholarship awards received by the individual under this section, reduced by the ratio of the number of years of service completed divided by the number of years of service required, shall be repaid or such amount shall be treated as a loan to be repaid in accordance with subparagraph (C); and

(ii) for a stipend recipient, one-half of the total amount of stipends received by the individual under this section shall be repaid or such amount shall be treated as a loan to be repaid in accordance with subparagraph (C).

(C) REPAYMENTS.—The loans described under subparagraphs (A) and (B) shall be payable to the Federal Government, consistent with the provisions of part B or D of title IV of the Higher Education Act of 1965, and shall be subject to repayment in accordance with terms and conditions specified by the Director (in consultation with the Secretary of Education) in regulations promulgated to carry out this paragraph.

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

(h) DATA COLLECTION.—An eligible entity receiving a grant under this section shall supply to the Director any relevant statistical and demographic data on scholarship and stipend recipients the Director may request, including information on employment required under this section.

(i) DEFINITIONS.—In this section—

(1) 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);

(2) the term “eligible entity” means—

(A) an institution of higher education; or

(B) an institution of higher education that receives grant funds on behalf of a consortium of institutions of higher education;

(3) the term “fellowship” means an award to an individual under section 10A;

(4) the term “high need local educational agency” has the meaning given such term in section 201 of the Higher Education Act of 1965 (20 U.S.C. 1021);

(5) the term “mathematics and science teacher” means a science, computer science, technology, engineering, or mathematics teacher at the elementary school or secondary school level;

(6) the term “scholarship” means an award under subsection (c);

(7) the term “science, technology, engineering, or mathematics professional” means a person who holds a baccalaureate, master’s, or doctoral degree in science, technology, engineering, or mathematics, and is working in or had a career in such field or a related area; and

(8) the term “stipend” means an award under subsection (d).

(j) MATHEMATICS AND SCIENCE SCHOLARSHIP GIFT FUND.—In accordance with section 11(f) of the National Science Foundation Act of 1950 (42 U.S.C. 1870(f)), the Director is authorized to accept donations from the private sector to supplement but not supplant

scholarships, stipends, internships, or fellowships associated with programs under this section or section 10A.

(k) **ASSESSMENT OF TEACHER SERVICE AND RETENTION.**—Not later than 4 years after the date of enactment of the America COMPETES Act, the Director shall transmit to the Committee on Health, Education, Labor, and Pensions of the Senate and the Committee on Science and Technology of the House of Representatives a report on the effectiveness of the programs carried out under this section and section 10A. The report shall include the proportion of individuals receiving scholarships, stipends, or fellowships under the program who—

(1) fulfill the individuals' service obligation required under this section or section 10A;

(2) remain in the teaching profession beyond the individuals' service obligation; and

(3) remain in the teaching profession in a high need local educational agency beyond the individuals' service obligation.

(l) **EVALUATION.**—Not less than 2 years after the date of enactment of the America COMPETES Act, the Director, in consultation with the Secretary of Education, shall conduct an evaluation to determine whether the scholarships, stipends, and fellowships authorized under this section and section 10A have been effective in increasing the numbers of high-quality mathematics and science teachers teaching in high need local educational agencies and whether there continue to exist significant shortages of such teachers in high need local educational agencies.

**SEC. 10A. NATIONAL SCIENCE FOUNDATION TEACHING FELLOWSHIPS AND MASTER TEACHING FELLOWSHIPS.**

(a) **IN GENERAL.**—

(1) **GRANTS.**—

(A) **IN GENERAL.**—As part of the Robert Noyce Teacher Scholarship Program established under section 10, the Director shall establish a separate program to award grants to eligible entities to enable such entities to administer fellowships in accordance with this section.

(B) **DEFINITIONS.**—The terms used in this section have the meanings given the terms in section 10.

(2) **FELLOWSHIPS.**—Fellowships under this section shall be available only to—

(A) science, technology, engineering, or mathematics professionals, including retiring professionals in those fields, who shall be referred to as “National Science Foundation Teaching Fellows” and who, in the first year of the fellowship, are enrolled in a master's degree program leading to teacher certification or licensing; and

(B) mathematics and science teachers, who shall be referred to as “National Science Foundation Master Teaching Fellows” and who possess a master's or bachelor's degree in their field.

(b) **ELIGIBILITY.**—In order to be eligible to receive a grant under this section, an eligible entity shall enter into a partnership that shall include—

(1) a department within an institution of higher education participating in the partnership that provides an advanced program of study in mathematics and science;

(2)(A) a school or department within an institution of higher education participating in the partnership that provides a teacher preparation program; or

(B) a 2-year institution of higher education that has a teacher preparation offering or a dual enrollment program with an institution of higher education participating in the partnership;

(3) not less than 1 high need local educational agency and a public school or a consortium of public schools served by the agency; and

(4) 1 or more nonprofit organizations that have a demonstrated record of capacity to provide expertise or support to meet the purposes of this section.

(c) USE OF GRANTS.—Grants awarded under this section shall be used by the eligible entity (and participating institutions of higher education of the consortium, if applicable) to develop and implement a program for National Science Foundation Teaching Fellows or National Science Foundation Master Teaching Fellows, through—

(1) administering fellowships in accordance with this section, including providing the teaching fellowship salary supplements described in subsection (f);

(2) in the case of National Science Foundation Teaching Fellowships—

(A) offering academic courses and clinical teaching experiences leading to a master's degree and designed to prepare individuals to teach in elementary schools and secondary schools, including such preparation as is necessary to meet the requirements for certification or licensing; and

(B) offering programs both during and after matriculation in the program for which the fellowship is received to enable fellows to become highly effective mathematics and science teachers, including mentoring, training, induction, and professional development activities, to fulfill the service requirements of this section, including the requirements of subsection (e), and to exchange ideas with others in their fields;

(3) in the case of National Science Foundation Master Teaching Fellowships for teachers with master's degrees in their field—

(A) offering academic courses and leadership training to prepare individuals to become master teachers in elementary schools and secondary schools; and

(B) offering programs both during and after matriculation in the program for which the fellowship is received to enable fellows to become highly effective mathematics and science teachers, including mentoring, training, induction, and professional development activities, to fulfill the service requirements of this section, including the requirements of subsection (e), and to exchange ideas with others in their fields; and

(4) in the case of National Science Foundation Master Teaching Fellowships for teachers with bachelor's degrees in their field and working toward a master's degree—

(A) offering academic courses leading to a master's degree and leadership training to prepare individuals to be

come master teachers in elementary and secondary schools; **[and]**

(B) offering programs both during and after matriculation in the program for which the fellowship is received to enable fellows to become highly effective mathematics and science teachers, including mentoring, training, induction, and professional development activities, to fulfill the service requirements of this section, including the requirements of subsection (e), and to exchange ideas with others in their fields**[.]**; *and*

(C) *providing internship opportunities for fellows, including research experiences at national laboratories and NASA Centers.*

(d) SELECTION PROCESS.—

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

(2) APPLICATIONS.—An eligible entity desiring a grant under this section shall submit an application to the Director at such time, in such manner, and containing such information as the Director may require. The application shall include, at a minimum—

(A) in the case of an applicant that is submitting an application on behalf of a consortium of institutions of higher education, a description of the participating institutions of higher education and the roles and responsibilities of each such institution;

(B) a description of the program that the applicant intends to operate, including the number of fellowships the applicant intends to award, the type of activities proposed for the recruitment of students to the program, and the amount of the teaching fellowship salary supplements to be provided in accordance with subsection (f);

(C) evidence that the applicant has the capability to administer the program in accordance with the provisions of this section, which may include a description of any existing programs at the applicant eligible entity (and participating institutions of higher education of the consortium, if applicable) that are targeted to the education of mathematics and science teachers and the number of teachers graduated annually from such programs;

(D) in the case of National Science Foundation Teaching Fellowships, a description of—

(i) the selection process that will be used in awarding fellowships, including a description of the rigorous measures to be used, including the rigorous, nationally recognized assessments to be used, in order to determine whether individuals applying for fellowships have advanced content knowledge of science, technology, engineering, or mathematics;

(ii) the academic courses and clinical teaching experiences described in subsection (c)(2)(A), including—

(I) a description of an educational program that will enable a student to obtain a master's degree and teacher certification or licensing within 1 year; and

(II) evidence of agreements between the applicant and the schools or local educational agencies that are identified as the locations at which clinical teaching experiences will occur;

(iii) a description of the programs described in subsection (c)(2)(B), including activities to assist individuals in fulfilling their service requirements under this section;

(E) evidence that the eligible entity will provide the teaching supplements required under subsection (f); and

(F) a description of the process the applicant will use to fulfill the requirements of section 10(f).

(3) CRITERIA.—In evaluating the applications submitted under paragraph (2), the Director shall consider, at a minimum—

(A) the ability of the applicant (and participating institutions of higher education of the consortium, if applicable) to effectively carry out the program and to meet the requirements of subsection (f);

(B) the extent to which the mathematics, science, or engineering faculty and the education faculty at the eligible entity (and participating institutions of higher education of the consortium, if applicable) have worked or will work collaboratively to design new or revised curricula that recognizes the specialized pedagogy required to teach science, technology, engineering, and mathematics effectively in elementary schools and secondary schools;

(C) the extent to which the applicant (and participating institutions of higher education of the consortium, if applicable) is committed to making the program a central organizational focus;

(D) the degree to which the proposed programming will enable participants to become highly effective mathematics and science teachers and prepare such participants to assume leadership roles in their schools, in addition to their regular classroom duties, including serving as mentor or master teachers, developing curriculum, and assisting in the development and implementation of professional development activities;

(E) the number and quality of the individuals that will be served by the program; and

(F) in the case of the National Science Foundation Teaching Fellowship, the ability of the applicant (and participating institutions of higher education of the consortium, if applicable) to recruit individuals who would otherwise not pursue a career in teaching and individuals identified in section 33 or 34 of the Science and Engineering Equal Opportunities Act (42 U.S.C. 1855a or 1855b).

(4) SELECTION OF FELLOWS.—

(A) IN GENERAL.—Individuals shall be selected to receive fellowships under this section primarily on the basis of—

(i) professional achievement;

(ii) academic merit;

(iii) content knowledge of science, technology, engineering, or mathematics, as demonstrated by their



performance on an assessment in accordance with paragraph (2)(D)(i); and

(iv) in the case of National Science Foundation Master Teaching Fellows, demonstrated success in improving student academic achievement in science, technology, engineering, or mathematics.

(B) PROMOTING PARTICIPATION OF CERTAIN INDIVIDUALS.—Among individuals demonstrating equivalent qualifications, consideration may be given to the goal of promoting the participation of individuals identified in section 33 or 34 of the Science and Engineering Equal Opportunities Act (42 U.S.C. 1885a or 1885b).

(e) DUTIES OF NATIONAL SCIENCE FOUNDATION TEACHING FELLOWS AND MASTER TEACHING FELLOWS.—A National Science Foundation Teaching Fellow or a National Science Foundation Master Teaching Fellow, while fulfilling the service obligation under subsection (h) and in addition to regular classroom activities, shall take on a leadership role within the school or local educational agency in which the fellow is employed, as defined by the partnership according to such fellow's expertise, including serving as a mentor or master teacher, developing curricula, and assisting in the development and implementation of professional development activities.

(f) TEACHING FELLOWSHIP SALARY SUPPLEMENTS.—

(1) IN GENERAL.—An eligible entity receiving a grant under this section shall provide salary supplements to individuals who participate in the program under this section during the period of their service obligation under subsection (h). A local educational agency through which the service obligation is fulfilled shall agree not to reduce the base salary normally paid to an individual solely because such individual receives a salary supplement under this subsection.

(2) AMOUNT AND DURATION.—

(A) AMOUNT.—Salary supplements provided under paragraph (1) shall be not less than \$10,000 per year, except that, in the case of a National Science Foundation Teaching Fellow, while enrolled in the master's degree program as described in subsection (c)(2)(A), such fellow shall receive not more than the cost of attendance at such fellow's institution.

(B) SUPPORT WHILE ENROLLED IN MASTER'S DEGREE PROGRAM.—A National Science Foundation Teaching Fellow may receive a maximum of 1 year of fellowship support while enrolled in a master's degree program as described in subsection (c)(2)(A), except that if such fellow is enrolled in a part-time program, such amount shall be prorated according to the length of the program.

(C) DURATION OF SUPPORT.—An eligible entity receiving a grant under this section shall provide teaching fellowship salary supplements through the period of the fellow's service obligation under subsection (h).

(g) SUPPORT FOR MASTER TEACHING FELLOWS WHILE ENROLLED IN A MASTER'S DEGREE PROGRAM.—A National Science Foundation Master Teacher Fellow may receive a maximum of 1 year of fellowship support while enrolled in a master's degree program as de-

scribed in subsection (c)(4)(A), except that if such fellow is enrolled in a part-time program, such amount shall be prorated according to the length of the program.

(h) **SERVICE OBLIGATION.**—An individual awarded a fellowship under this section shall serve as a mathematics or science teacher in an elementary school or secondary school served by a high need local educational agency for—

(1) in the case of a National Science Foundation Teaching Fellow, 4 years, to be fulfilled within 6 years of completing the master's program described in subsection (c)(2)(A); and

(2) in the case of a National Science Foundation Master Teaching Fellow, 5 years, to be fulfilled within 7 years of the start of participation in the program under subsection (c)(3).

(i) **MATCHING REQUIREMENT.**—

(1) **IN GENERAL.**—An eligible entity receiving a grant under this section shall provide, from non-Federal sources, to carry out the activities supported by the grant—

(A) in the case of grants in an amount of less than \$1,500,000, an amount equal to at least 30 percent of the amount of the grant, at least one half of which shall be in cash; and

(B) in the case of grants in an amount of \$1,500,000 or more, an amount equal to at least 50 percent of the amount of the grant, at least one half of which shall be in cash.

(2) **WAIVER.**—The Director may waive all or part of the matching requirement described in paragraph (1) for any fiscal year for an eligible entity receiving a grant under this section, if the Director determines that applying the matching requirement would result in serious hardship or inability to carry out the authorized activities described in this section.

(j) **CONDITIONS OF SUPPORT; COLLECTION FOR NONCOMPLIANCE; FAILURE TO COMPLETE SERVICE OBLIGATION; DATA COLLECTION.**—

(1) **IN GENERAL.**—Except as provided in paragraph (2), subsections (e), (f), (g), and (h) of section 10 shall apply to eligible entities and recipients of fellowships under this section, as applicable, in the same manner as such subsections apply to eligible entities and recipients of scholarships and stipends under section 10, as applicable.

(2) **AMOUNT OF REPAYMENT.**—If a circumstance described in subparagraph (D) or (E) of section 10(g)(1) occurs after the completion of 1 year of a service obligation under this section—

(A) for a National Science Foundation Teaching Fellow, the total amount of fellowship award received by the individual under this section while enrolled in the master's degree program, reduced by one-fourth of the total amount for each year of service completed, plus one-half of the total teaching fellowship salary supplements received by such individual under this section, shall be repaid or such amount shall be treated as a loan to be repaid in accordance with section 10(g)(1)(C); and

(B) for a National Science Foundation Master Teaching Fellow, the total amount of teaching fellowship salary supplements received by the individual under this section, reduced by one-half, shall be repaid or such amount shall be

treated as a loan to be repaid in accordance with section 10(g)(1)(C).

(k) STEM TEACHER SERVICE AND RETENTION.—

(1) IN GENERAL.—The Director shall develop and implement practices for increasing the proportion of individuals receiving fellowships under this section who—

(A) fulfill the service obligation required under subsection (h); and

(B) remain in the teaching profession in a high need local educational agency beyond the service obligation.

(2) PRACTICES.—The practices described under paragraph (1) may include—

(A) partnering with nonprofit or professional associations or with other government entities to provide individuals receiving fellowships under this section with opportunities for professional development, including mentorship programs that pair those individuals with currently employed and recently retired science, technology, engineering, mathematics, or computer science professionals;

(B) increasing recruitment from high need districts;

(C) establishing a system to better collect, track, and respond to data on the career decisions of individuals receiving fellowships under this section;

(D) conducting research to better understand factors relevant to teacher service and retention, including factors specifically impacting the retention of teachers who are individuals identified in sections 33 and 34 of the Science and Engineering Equal Opportunities Act (42 U.S.C. 1885a, 1885b); and

(E) conducting pilot programs to improve teacher service and retention.

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