(1) historically have received relatively little Federal research and development funding; and

(2) have demonstrated a commitment to develop their research bases and improve science and engineering research and education programs at their universities and colleges.

(b) A State which has received an initial award under such Program, whether or not the award was received before or after October 31, 1988, shall be eligible for up to 5 years of additional support under the Program if that State provides assurances of new matching funds and submits an acceptable new plan for using Program funds and matching funds to build the research capabilities of the State.

(Pub. L. 100–570, title I, §113, Oct. 31, 1988, 102 Stat. 2870; Pub. L. 114–329, title I, §103(e)(2), Jan. 6, 2017, 130 Stat. 2975.)

CODIFICATION

Section was enacted as part of the National Science Foundation Authorization Act of 1988, and not as part of the National Science Foundation Act of 1950 which comprises this chapter.

AMENDMENTS

2017—Pub. L. 114–329, §103(e)(2)(A), substituted ''Established'' for ''Experimental'' in section catchline.

Subsec. (a). Pub. L. 114–329, §103(e)(2)(B), substituted ''a program to stimulate competitive research (known as the 'Established Program to Stimulate Competitive Research')'' for ''an Experimental Program to Stimulate Competitive Research'' in introductory provisions.

Subsec. (b). Pub. L. 114–329, §103(e)(2)(C), substituted ''the Program'' for ''the program''.

PLANNING GRANTS

Pub. L. 107–368, §26, Dec. 19, 2002, 116 Stat. 3067, provided that: ''The Director is authorized to accept planning proposals from applicants who are within .075 percentage points of the current eligibility level for the Experimental Program to Stimulate Competitive Research. Such proposals shall be reviewed by the Foundation to determine their merit for support under the Experimental Program to Stimulate Competitive Research or any other appropriate program.''

[For definitions of terms used in section 26 of Pub. L. 107–368, set out above, see section 4 of Pub. L. 107–368, set out as a note under section 1862n of this title.]

§ 1862h. Congressional statement of findings and declaration of purposes respecting scientific and technical education and training

(a) Findings

The Congress finds that—

(1) the position of the United States in the world economy faces great challenges from highly trained foreign competition;

(2) the workforce of the United States must be better prepared for the technologically advanced, competitive, global economy;

(3) the improvement of our work force's productivity and our international economic position depend upon the strengthening of our educational efforts in science, mathematics, and technology, especially at the associate-degree level;

(4) shortages of scientifically and technically trained workers in a wide variety of fields will best be addressed by collaboration among the Nation's associate-degree-granting colleges and private industry to produce skilled, advanced technicians; and

(5) the National Science Foundation's traditional role in developing model curricula, disseminating instructional materials, enhancing faculty development, and stimulating partnerships between educational institutions and industry, makes an enlarged role for the Foundation in scientific and technical education and training particularly appropriate.

(b) Purposes

It is the purpose of sections 1862h to 1862j of this title to—

(1) improve science and technical education at associate-degree-granting colleges;

(2) improve secondary school and postsecondary curricula in mathematics and science;

(3) improve the educational opportunities of postsecondary students by creating comprehensive articulation agreements and planning between 2-year and 4-year institutions; and

(4) promote outreach to secondary schools to improve mathematics and science instruction.

(Pub. L. 102–476, §2, Oct. 23, 1992, 106 Stat. 2297.)

REFERENCES IN TEXT

Sections 1862h to 1862j of this title, referred to in subsec. (b), was in the original ''this Act'', meaning Pub. L. 102–476, Oct. 23, 1992, 106 Stat. 2297, known as the Scientific and Advanced-Technology Act of 1992, which enacted this section and sections 1862i and 1862j of this title and amended section 1862 of this title. For complete classification of this Act to the Code, see Short Title of 1992 Amendment note set out under section 1861 of this title and Tables.

CODIFICATION

Section was enacted as part of the Scientific and Advanced-Technology Act of 1992, and not as part of the National Science Foundation Act of 1950 which comprises this chapter.

§ 1862i. Scientific and technical education

(a) National advanced scientific and technical education program

The Director of the National Science Foundation (hereafter in sections 1862h to 1862j of this title referred to as the ''Director'') shall award grants to associate-degree-granting colleges, and consortia thereof, to assist them in providing education in advanced-technology fields, and to improve the quality of their core education courses in science and mathematics. The grant program shall place emphasis on the needs of students who have been in the workforce (including work in the home), and shall be designed to strengthen and expand the scientific and technical education and training capabilities of associate-degree-granting colleges through such methods as—

(1) the development of model instructional programs in advanced-technology fields and in core science and mathematics courses;

(2) the professional development of faculty and instructors, both full- and part-time, who provide instruction in science, mathematics, and advanced-technology fields;

(3) the establishment of innovative partnership arrangements that—

(A) involve associate-degree-granting colleges and other appropriate public and private sector entities;

(B) provide for private sector donations, faculty opportunities to have short-term assignments with industry, sharing of program costs, equipment loans, and the cooperative use of laboratories, plants, and other facilities, and provision for state-of-the-art work experience opportunities for students enrolled in such programs; and

(C) encourage participation of individuals identified in section 1885a or 1885b of this title;

(4) the acquisition of state-of-the-art instrumentation essential to programs designed to prepare and upgrade students in scientific and advanced-technology fields; and

(5) the development and dissemination of instructional materials in support of improving the advanced scientific and technical education and training capabilities of associate-degree-granting colleges, including programs for students who are not pursuing a science degree.

(b) National centers of scientific and technical education

The Director shall award grants for the establishment of centers of excellence, not to exceed 10 in number, among associate-degree-granting colleges. Centers shall meet one or both of the following criteria:

(1) Exceptional instructional programs in advanced-technology fields.

(2) Excellence in undergraduate education in mathematics and science.

The centers shall serve as national and regional clearinghouses and models for the benefit of both colleges and secondary schools, and shall provide seminars and programs to disseminate model curricula and model teaching methods and instructional materials to other associate-degree-granting colleges in the geographic region served by the center.

(c) Articulation partnerships

(1) Partnership grants

(A) The Director shall make grants to eligible partnerships to encourage students to pursue bachelor degrees in mathematics, science, engineering, or technology, and to assist students pursuing bachelor degrees in mathematics, science, engineering, or technology to make the transition from associate-degree-granting colleges to bachelor-degree-granting institutions, through such means as—

(i) examining curricula to ensure that academic credit earned at the associate-degree-granting college is transferable to bachelor-degree-granting institutions;

(ii) informing teachers from the associate-degree-granting college on the specific requirements of courses at the bachelor-degree-granting institution; and

(iii) providing summer educational programs for students from the associate-degree-granting college to encourage such students' subsequent matriculation at bachelor-degree-granting institutions.

(B) Each eligible partnership receiving a grant under this paragraph shall, at a minimum—

(i) counsel students, including students who have been in the workforce (including work in the home), about the requirements and course offerings of the bachelor-degree-granting institution;

(ii) conduct workshops and orientation sessions to ensure that students are familiar with programs, including laboratories and financial aid programs, at the bachelor-degree-granting institution;

(iii) provide students with research experiences at bachelor's-degree-granting institutions participating in the partnership, including stipend support for students participating in summer programs; and

(iv) provide faculty mentors for students participating in activities under clause (iii), including summer salary support for faculty mentors.

Funds used by eligible partnerships to carry out clauses (i) and (ii) shall be from non-Federal sources. In-cash and in-kind resources used by eligible partnerships to carry out clauses (i) and (ii) shall not be considered to be contributions for purposes of applying subsection (i)(3).

(C) Any institution participating in a partnership that receives a grant under this paragraph shall be ineligible to receive assistance under part B of title I of the Higher Education Act of 1965 [20 U.S.C. 1011 et seq.] for the duration of the grant received under this paragraph.

(2) Outreach grants

The Director shall make grants to associate-degree-granting colleges with outstanding mathematics and science programs to strengthen relationships with secondary schools in the community served by the college by improving mathematics and science education and encouraging the interest and aptitude of secondary school students for careers in science and advanced-technology fields through such means as developing agreements with local educational agencies to enable students to satisfy entrance and course requirements at the associate-degree-granting college.

(3) Mentor training grants

The Director shall—

(A) establish a program to encourage and make grants available to institutions of higher education that award associate degrees to recruit and train individuals from the fields of science, technology, engineering, and mathematics to mentor students who are described in section 1885a or 1885b of this title in order to assist those students in identifying, qualifying for, and entering higher-paying technical jobs in those fields; and

(B) make grants available to associate-degree-granting colleges to carry out the program identified in subsection [1] (A).

[1] So in original. Probably should be ''subparagraph''.

(d) Grants for associate degree programs in STEM fields

(1) In-demand workforce grants

The Director shall award grants to junior or community colleges to develop or improve associate degree or certificate programs in STEM fields, with respect to the region in which the respective college is located, and an in-demand industry sector or occupation.

(2) Applications

In considering applications for grants under paragraph (1), the Director shall prioritize—

(A) applications that consist of a partnership between the applying junior or community college and individual employers or an employer consortia,[2] or industry or sector partnerships, and may include a university or other organization with demonstrated expertise in academic program development;

(B) applications that demonstrate current and future workforce demand in occupations directly related to the proposed associate degree or certificate program;

(C) applications that include commitments by the partnering employers or employer consortia, or industry or sector partnerships, to offer apprenticeships, internships, or other applied learning opportunities to students enrolled in the proposed associate degree or certificate program;

(D) applications that include outreach plans and goals for recruiting and enrolling women and other underrepresented populations in STEM fields in the proposed associate degree or certificate program; and

(E) applications that describe how the applying junior or community college will support the collection of information and data for purposes of evaluation of the proposed associate degree or certificate program.

(e) Grants for STEM degree applied learning opportunities

(1) In general

The Director shall award grants to institutions of higher education partnering with private sector employers or private sector employer consortia, or industry or sector partnerships, that commit to offering apprenticeships, internships, research opportunities, or applied learning experiences to enrolled students in identified STEM baccalaureate degree programs.

(2) Purposes

Awards under this subsection may be used—

(A) to develop curricula and programs for apprenticeship, internships, research opportunities, or applied learning experiences; or

(B) to provide matching funds to incentivize partnership and participation by private sector employers and industry.

(3) Applications

In considering applications for grants under paragraph (1), the Director shall prioritize—

(A) applicants that consist of a partnership between—

(i) the applying institution of higher education; and

(ii) individual employers or an employer consortia,[2] or industry or sector partnerships;

(B) applications that demonstrate current and future workforce demand in occupations directly related to the identified STEM fields;

(C) applications that include outreach plans and goals for recruiting and enrolling women and other underrepresented populations in STEM fields; and

(D) applications that describe how the institution of higher education will support the collection and information of data for purposes of the evaluation of identified STEM degree programs.

(f) Grants for computer-based and online STEM education courses

(1) In general

The Director of the National Science Foundation shall award competitive grants to institutions of higher education or nonprofit organizations to conduct research on student outcomes and determine best practices for STEM education and technical skills education through distance learning or in a simulated work environment.

(2) Research areas

The research areas eligible for funding under this subsection may include—

(A) post-secondary courses for technical skills development for STEM occupations;

(B) improving high-school level career and technical education in STEM subjects;

(C) encouraging and sustaining interest and achievement levels in STEM subjects among women and other populations historically underrepresented in STEM studies and careers; and

(D) combining computer-based and online STEM education and skills development with traditional mentoring and other mentoring arrangements, apprenticeships, internships, and other applied learning opportunities.

(g) Coordination with other Federal departments

In carrying out this section, the Director shall consult, cooperate, and coordinate, to enhance program effectiveness and to avoid duplication, with the programs and policies of other relevant Federal agencies. In carrying out subsection (c), the Director shall coordinate activities with programs receiving assistance under part B of title I of the Higher Education Act of 1965 [20 U.S.C. 1011 et seq.].

(h) Funding

(1) Funding

The Director shall allocate out of amounts made available for the Education and Human Resources Directorate—

(A) up to $5,000,000 to carry out the activities under subsection (d) for each of fiscal years 2019 through 2022, subject to the availability of appropriations;

(B) up to $2,500,000 to carry out the activities under subsection (e) for each of fiscal

[2] So in original.

years 2019 through 2022, subject to the availability of appropriations; and

(C) up to $2,500,000 to carry out the activities under subsection (f) for each of fiscal years 2019 through 2022, subject to the availability of appropriations.

(2) Limitation on funding

Amounts made available to carry out subsections (d), (e), and (f) shall be derived from amounts appropriated or otherwise made available to the National Science Foundation.

(3) Limitation on funding

To qualify for a grant under this section, an associate-degree-granting college, or consortium thereof, shall provide assurances adequate to the Director that it will not decrease its level of spending of funds from non-Federal sources on advanced scientific and technical education and training programs.

(i) Functions of Director

In carrying out sections 1862h to 1862j of this title, the Director shall—

(1) award grants on a competitive, merit basis;

(2) ensure an equitable geographic distribution of grant awards;

(3) ensure that an applicant for a grant awarded under subsection (a), (b), or (c)(1) will make an in-cash or in-kind contribution in an amount equal to at least 25 percent of the cost of the program, and for a grant awarded under subsection (c)(2) will make an in-cash or in-kind contribution in an amount at least equal to the amount of the grant award;

(4) establish and maintain a readily accessible inventory of the programs assisted under sections 1862h to 1862j of this title; and

(5) designate an officer of the National Science Foundation to serve as a liaison with associate-degree-granting institutions for the purpose of enhancing the role of such institutions in the activities of the Foundation.

(j) Definitions

As used in this section—

(1) the term ''advanced-technology'' includes advanced technical activities such as the modernization, miniaturization, integration, and computerization of electronic, hydraulic, pneumatic, laser, nuclear, chemical, telecommunication, fiber optic, robotic, and other technological applications to enhance productivity improvements in manufacturing, communication, transportation, commercial, and similar economic and national security activities;

(2) the term ''associate-degree-granting college'' means an institution of higher education (as determined under section 101 of the Higher Education Act of 1965 [20 U.S.C. 1001]) that—

(A) is a nonprofit institution that offers a 2-year associate-degree program or a 2-year certificate program; or

(B) is a proprietary institution that offers a 2-year associate-degree program;

(3) the term ''bachelor-degree-granting institution'' means an institution of higher education (as determined under section 101 of the Higher Education Act of 1965 [20 U.S.C. 1001]) that offers a baccalaureate degree program;

(4) the term ''eligible partnership'' means one or more associate-degree-granting colleges in partnership with one or more separate bachelor-degree-granting institutions;

(5) the term ''in-demand industry sector or occupation'' has the meaning given the term in section 3102 of title 29;

(6) the term ''junior or community college'' has the meaning given the term in section 312 of the Higher Education Act of 1965 (20 U.S.C. 1058);

(7) the term ''local educational agency'' has the meaning given such term in section 2891(12)[3] of title 20.[4]

(8) the term ''region'' means a labor market area, as that term is defined in section 3102 of title 29; and

(9) the terms ''mathematics, science, engineering, or technology'' or ''STEM'' mean science, technology, engineering, and mathematics, including computer science.

(Pub. L. 102–476, § 3, Oct. 23, 1992, 106 Stat. 2297; Pub. L. 105–244, title I, § 102(a)(13)(B), Oct. 7, 1998, 112 Stat. 1620; Pub. L. 107–368, § 21(a), (b), Dec. 19, 2002, 116 Stat. 3064; Pub. L. 110–69, title VII, § 7031(a), Aug. 9, 2007, 121 Stat. 710; Pub. L. 115–402, § 3, Dec. 31, 2018, 132 Stat. 5344.)

REFERENCES IN TEXT

Sections 1862h to 1862j of this title, referred to in subsecs. (a) and (i), was in the original ''this Act'', meaning Pub. L. 102–476, Oct. 23, 1992, 106 Stat. 2297, known as the Scientific and Advanced-Technology Act of 1992, which enacted this section and sections 1862h and 1862j of this title and amended section 1862 of this title. For complete classification of this Act to the Code, see Short Title of 1992 Amendment note set out under section 1861 of this title and Tables.

The Higher Education Act of 1965, referred to in subsecs. (c)(1)(C) and (g), is Pub. L. 89–329, Nov. 8, 1965, 79 Stat. 1219, as amended. Part B of title I of the Act is classified generally to part B (§ 1011 et seq.) of subchapter I of chapter 28 of Title 20, Education. Pub. L. 105–244, title I, § 101(a), Oct. 7, 1998, 112 Stat. 1585, amended title I of the Act generally and part B, which formerly related to articulation agreements, now relates to additional general provisions. For complete classification of this Act to the Code, see Short Title note set out under section 1001 of Title 20 and Tables.

Section 2891(12) of title 20, referred to in subsec. (j)(7), was in the original ''section 1471(12) of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 2891(12))'', Pub. L. 89–10, and was omitted in the general amendment of that Act by Pub. L. 103–382, title I, § 101, Oct. 20, 1994, 108 Stat. 3519. For provisions relating to definitions, see section 7801 of Title 20, Education.

CODIFICATION

Section was enacted as part of the Scientific and Advanced-Technology Act of 1992, and not as part of the National Science Foundation Act of 1950 which comprises this chapter.

AMENDMENTS

2018—Subsec. (a)(3)(A). Pub. L. 115–402, § 3(3), substituted semicolon for comma at end.

Subsec. (c)(1)(B). Pub. L. 115–402, § 3(4), which directed substitution of ''subsection (i)(3)'' for ''subsection (f)(3)'' in cl. (iv), was executed by making the substitution in concluding provisions of subpar. (B) following cl. (iv), to reflect the probable intent of Congress.

Subsecs. (d) to (f). Pub. L. 115–402, § 3(2), added subsecs. (d) to (f). Former subsecs. (d) to (f) redesignated (g) to (i), respectively.

[3] See References in Text note below.

[4] So in original. The period probably should be a semicolon.

Subsec. (g). Pub. L. 115–402, §3(1), redesignated subsec. (d) as (g). Former subsec. (g) redesignated (j).

Subsec. (h). Pub. L. 115–402, §3(5), substituted ''Funding'' for ''Limitation on funding'' in heading, designated existing provisions as par. (3) and inserted heading, and added pars. (1) and (2).

Pub. L. 115–402, §3(1), redesignated subsec. (e) as (h).

Subsec. (i). Pub. L. 115–402, §3(1), redesignated subsec. (f) as (i).

Subsec. (j). Pub. L. 115–402, §3(1), redesignated subsec. (g) as (j).

Subsec. (j)(5) to (9). Pub. L. 115–402, §3(6), added pars. (5) and (6), redesignated former par. (5) as (7), and added pars. (8) and (9).

2007—Subsec. (a)(3)(A). Pub. L. 110–69, §7031(a)(1)(A), which directed striking out ''and'' after the semicolon, was executed by striking out ''and'' after the comma, to reflect the probable intent of Congress.

Subsec. (a)(3)(B), (C). Pub. L. 110–69, §7031(a)(1)(B), (C), substituted ''; and'' for semicolon in subpar. (B) and added subpar. (C).

Subsec. (c)(3). Pub. L. 110–69, §7031(a)(2), added par. (3).

2002—Subsec. (a). Pub. L. 107–368, §21(a)(1), inserted '', and to improve the quality of their core education courses in science and mathematics'' after ''education in advanced-technology fields'' in introductory provisions.

Subsec. (a)(1). Pub. L. 107–368, §21(a)(2), inserted ''and in core science and mathematics courses'' after ''advanced-technology fields''.

Subsec. (a)(2). Pub. L. 107–368, §21(a)(3), substituted ''who provide instruction in science, mathematics, and advanced-technology fields'' for ''in advanced-technology fields''.

Subsec. (c)(1)(B)(iii), (iv). Pub. L. 107–368, §21(b), added cls. (iii) and (iv).

1998—Subsec. (g)(2), (3). Pub. L. 105–244 substituted ''section 101 of the Higher Education Act of 1965'' for ''section 1201(a) of the Higher Education Act of 1965 (20 U.S.C. 1141(a))''.

EFFECTIVE DATE OF 1998 AMENDMENT

Amendment by Pub. L. 105–244 effective Oct. 1, 1998, except as otherwise provided in Pub. L. 105–244, see section 3 of Pub. L. 105–244, set out as a note under section 1001 of Title 20, Education.

FINDINGS

Pub. L. 115–402, §2, Dec. 31, 2018, 132 Stat. 5343, provided that: ''Congress finds the following:

''(1) To remain competitive in the global economy, foster greater innovation, and provide a foundation for shared prosperity, the United States needs a workforce with the right mix of skills to meet the diverse needs of the economy.

''(2) Evidence indicates that the returns on investments in technical skills in the labor market are strong when students successfully complete their education and gain credentials sought by employers.

''(3) The responsibility for developing and sustaining a skilled technical workforce is fragmented across many groups, including educators, students, workers, employers, Federal, State, and local governments, civic associations, and other stakeholders. Such groups need to be able to coordinate and cooperate successfully with each other.

''(4) Coordination among students, community colleges, secondary and post-secondary institutions, and employers would improve educational outcomes.

''(5) Promising experiments currently underway may guide innovation and reform, but scalability of some of those experiments has not yet been tested.

''(6) Evidence suggests that integration of academic education, technical skills development, and hands-on work experience improves outcomes and return on investment for students in secondary and post-secondary education and for skilled technical workers in different career stages.

''(7) Outcomes show that mentoring can increase STEM student engagement and the rate of completion of STEM post-secondary degrees.''

§ 1862j. Authorization of appropriations

There are authorized to be appropriated, from sums otherwise authorized to be appropriated, to the Director for carrying out sections 1862h to 1862j of this title—

(1) $35,000,000 for fiscal year 1992; and

(2) $35,000,000 for fiscal year 1993.

(Pub. L. 102–476, §5, Oct. 23, 1992, 106 Stat. 2301.)

REFERENCES IN TEXT

Sections 1862h to 1862j of this title, referred to in text, was in the original ''this Act'', meaning Pub. L. 102–476, Oct. 23, 1992, 106 Stat. 2297, known as the Scientific and Advanced-Technology Act of 1992, which enacted this section and sections 1862h and 1862i of this title and amended section 1862 of this title. For complete classification of this Act to the Code, see Short Title of 1992 Amendment note set out under section 1861 of this title and Tables.

CODIFICATION

Section was enacted as part of the Scientific and Advanced-Technology Act of 1992, and not as part of the National Science Foundation Act of 1950 which comprises this chapter.

§ 1862k. Findings; core strategies

(a) Findings

Congress finds the following:

(1) The United States depends upon its scientific and technological capabilities to preserve the military and economic security of the United States.

(2) America's leadership in the global marketplace is dependent upon a strong commitment to education, basic research, and development.

(3) A nation that is not technologically literate cannot compete in the emerging global economy.

(4) A coordinated commitment to mathematics and science instruction at all levels of education is a necessary component of successful efforts to produce technologically literate citizens.

(5) Professional development is a necessary component of efforts to produce system-wide improvements in mathematics, engineering, and science education in secondary, elementary, and postsecondary settings.

(6)(A) The mission of the National Science Foundation is to provide Federal support for basic scientific and engineering research, and to be a primary contributor to mathematics, science, and engineering education at academic institutions in the United States.

(B) In accordance with such mission, the long-term goals of the National Science Foundation include providing leadership to—

(i) enable the United States to maintain a position of world leadership in all aspects of science, mathematics, engineering, and technology;

(ii) promote the discovery, integration, dissemination, and application of new knowledge in service to society; and

(iii) achieve excellence in United States science, mathematics, engineering, and technology education at all levels.