

vate sector internship experiences with the students' STEM coursework. The partnerships may also include industry or professional associations.

**(b) Internship program**

The grants awarded under subsection (a) may include internship programs in the manufacturing sector.

**(c)<sup>1</sup> Use of grant funds**

Grants under this section may be used—

- (1) to develop and implement hands-on learning opportunities;
- (2) to develop curricula and instructional materials related to industry, including the manufacturing sector;
- (3) to perform outreach to secondary schools;
- (4) to develop mentorship programs for students with partner organizations; and
- (5) to conduct activities to support awareness of career opportunities and skill requirements.

**(d)<sup>2</sup> Priority**

In awarding grants under this section, the Director shall give priority to institutions of higher education or consortia thereof that demonstrate significant outreach to and coordination with local or regional private sector entities and Regional Centers for the Transfer of Manufacturing Technology established by section 278k(a)<sup>3</sup> of title 15 in developing academic courses designed to provide students with the skills or certifications necessary for employment in local or regional companies.

**(c)<sup>1</sup> Outreach to rural communities**

The Foundation shall conduct outreach to institutions of higher education and private sector entities in rural areas to encourage those entities to participate in partnerships under this section.

**(d)<sup>2</sup> Cost-share**

The Director shall require a 50 percent non-Federal cost-share from partnerships established or expanded under this section.

**(e) Restriction**

No Federal funds provided under this section may be used—

- (1) for the purpose of providing stipends or compensation to students for private sector internships unless private sector entities match 75 percent of such funding; or
- (2) as payment or reimbursement to private sector entities, except for institutions of higher education.

**(f) Report**

Not less than 3 years after January 4, 2011, the Director shall submit a report to Congress on the number and total value of awards made under this section, the number of students affected by those awards, any evidence of the effect of those awards on workforce preparation and jobs placement for participating students,

and an economic and ethnic breakdown of the participating students.

(Pub. L. 111-358, title V, §515, Jan. 4, 2011, 124 Stat. 4012.)

**Editorial Notes**

REFERENCES IN TEXT

Section 278k of title 15, referred to in subsec. (d), was amended generally by Pub. L. 114-329, title V, §501(b), Jan. 6, 2017, 130 Stat. 3023, and, as so amended, relates to the Hollings Manufacturing Extension Partnership.

CODIFICATION

Section was enacted as part of the America COMPETES Reauthorization Act of 2010, also known as the America Creating Opportunities to Meaningfully Promote Excellence in Technology, Education, and Science Reauthorization Act of 2010, and also as part of the National Science Foundation Authorization Act of 2010, and not as part of the National Science Foundation Act of 1950 which comprises this chapter.

**Statutory Notes and Related Subsidiaries**

DEFINITIONS

For definitions of terms used in this section, see section 2 of Pub. L. 111-358, set out as a note under section 6621 of this title, and section 502 of Pub. L. 111-358, set out as a note under section 1862p of this title.

**§ 1862p-8. Cyber-enabled learning for national challenges**

The Director shall, in consultation with appropriate Federal agencies, identify ways to use cyber-enabled learning to create an innovative STEM workforce and to help retrain and retain our existing STEM workforce to address national challenges, including national security and competitiveness, and use technology to enhance or supplement laboratory based learning.

(Pub. L. 111-358, title V, §516, Jan. 4, 2011, 124 Stat. 4012.)

**Editorial Notes**

CODIFICATION

Section was enacted as part of the America COMPETES Reauthorization Act of 2010, also known as the America Creating Opportunities to Meaningfully Promote Excellence in Technology, Education, and Science Reauthorization Act of 2010, and also as part of the National Science Foundation Authorization Act of 2010, and not as part of the National Science Foundation Act of 1950 which comprises this chapter.

**Statutory Notes and Related Subsidiaries**

DEFINITIONS

For definitions of terms used in this section, see section 2 of Pub. L. 111-358, set out as a note under section 6621 of this title, and section 502 of Pub. L. 111-358, set out as a note under section 1862p of this title.

**§ 1862p-9. Experimental Program to Stimulate Competitive Research**

**(a) Findings**

The Congress finds that—

- (1) the National Science Foundation Act of 1950 [42 U.S.C. 1861 et seq.] stated, “it shall be an objective of the Foundation to strengthen research and education in the sciences and en-

<sup>1</sup> So in original. Two subsecs. (c) have been enacted.

<sup>2</sup> So in original. Two subsecs. (d) have been enacted.

<sup>3</sup> See References in Text note below.

gineering, including independent research by individuals, throughout the United States, and to avoid undue concentration of such research and education”;

(2) National Science Foundation funding remains highly concentrated, with 28 States and jurisdictions, taken together, receiving only about 12 percent of all National Science Foundation research funding;

(3) each of the States described in paragraph (2) receives only a fraction of 1 percent of the Foundation’s research dollars each year;

(4) first established at the National Science Foundation in 1979, the Experimental Program to Stimulate Competitive Research (referred to in this section as “EPSCoR”) assists States and jurisdictions historically underserved by Federal research and development funding in strengthening their research and innovation capabilities;

(5) the EPSCoR structure requires each participating State to develop a science and technology plan suited to State and local research, education, and economic interests and objectives;

(6) EPSCoR has been credited with advancing the research competitiveness of participating States, improving awareness of science, promoting policies that link scientific investment and economic growth, and encouraging partnerships between government, industry, and academia;

(7) EPSCoR proposals are evaluated through a rigorous and competitive merit-review process to ensure that awarded research and development efforts meet high scientific standards; and

(8) according to the National Academy of Sciences, EPSCoR has strengthened the national research infrastructure and enhanced the educational opportunities needed to develop the science and engineering workforce.

**(b) Continuation of program**

The Director shall continue to carry out EPSCoR, with the objective of helping the eligible States to develop the research infrastructure that will make them more competitive for Foundation and other Federal research funding. The program shall continue to increase as the National Science Foundation funding increases.

**(c) Coordination of EPSCoR and similar Federal programs**

**(1) Another finding**

The Congress finds that a number of Federal agencies have programs, such as EPSCoR and the National Institutes of Health Institutional Development Award program, designed to increase the capacity for and quality of science and technology research and training at academic institutions in States that historically have received relatively little Federal research and development funding.

**(2) Coordination required**

The EPSCoR Interagency Coordinating Committee, chaired by the National Science Foundation, shall—

(A) coordinate each EPSCoR to maximize the impact of Federal support for building competitive research infrastructure, and in

order to achieve an integrated Federal effort;

(B) coordinate agency objectives with State and institutional goals, to obtain continued non-Federal support of science and technology research and training;

(C) develop metrics to assess gains in academic research quality and competitiveness, and in science and technology human resource development;

(D) conduct a cross-agency evaluation of each EPSCoR and accomplishments, including management, investment, and metric-measuring strategies implemented by the different agencies aimed to increase the number of new investigators receiving peer-reviewed funding, broaden participation, and empower knowledge generation, dissemination, application, and national research and development competitiveness;

(E) coordinate the development and implementation of new, novel workshops, outreach activities, and follow-up mentoring activities among each EPSCoR for colleges and universities in EPSCoR States and territories in order to increase the number of proposals submitted and successfully funded and to enhance statewide coordination of each EPSCoR;

(F) coordinate the development of new, innovative solicitations and programs to facilitate collaborations, partnerships, and mentoring activities among faculty at all levels in non-EPSCoR and EPSCoR States and jurisdictions;

(G) conduct an evaluation of the roles, responsibilities and degree of autonomy that program officers or managers (or the equivalent position) have in executing each EPSCoR at the different Federal agencies and the impacts these differences have on the number of EPSCoR State and jurisdiction faculty participating in the peer review process and the percentage of successful awards by individual EPSCoR State jurisdiction and individual researcher; and

(H) conduct a survey of colleges and university faculty at all levels regarding their knowledge and understanding of EPSCoR, and their level of interaction with and knowledge about their respective State or Jurisdictional EPSCoR Committee.

**(3) Meetings and reports**

The Committee shall meet at least twice each fiscal year and shall submit an annual report to the appropriate committees of Congress describing progress made in carrying out paragraph (2).

**(d) Federal agency reports**

Each Federal agency that administers an EPSCoR shall submit to Congress, as part of its Federal budget submission—

(1) a description of the program strategy and objectives;

(2) a description of the awards made in the previous fiscal year, including—

(A) the total amount made available, by State, under EPSCoR;

(B) the total amount of agency funding made available to all institutions and entities within each EPSCoR State;

(C) the efforts and accomplishments to more fully integrate the EPSCoR States in major agency activities and initiatives;

(D) the percentage of EPSCoR reviewers from EPSCoR States; and

(E) the number of programs or large collaborator awards involving a partnership of organizations and institutions from EPSCoR and non-EPSCoR States; and

(3) an analysis of the gains in academic research quality and competitiveness, and in science and technology human resource development, achieved by the program over the last 5 fiscal years.

**(e) National Academy of Sciences study**

**(1) In general**

The Director shall contract with the National Academy of Sciences to conduct a study on all Federal agencies that administer an EPSCoR.

**(2) Matters to be addressed**

The study conducted under paragraph (1) shall include the following:

(A) A delineation of the policies of each Federal agency with respect to the awarding of grants to EPSCoR States.

(B) The effectiveness of each program.

(C) Recommendations for improvements for each agency to achieve EPSCoR goals.

(D) An assessment of the effectiveness of EPSCoR States in using awards to develop science and engineering research and education, and science and engineering infrastructure within their States.

(E) Such other issues that address the effectiveness of EPSCoR as the National Academy of Sciences considers appropriate.

**(f) Award structure updates**

In implementing the mandate to maximize the impact of Federal EPSCoR support on building competitive research infrastructure, and based on the inputs and recommendations of previous EPSCoR reviews, the head of each Federal agency administering an EPSCoR program shall—

(1) consider modifications to EPSCoR proposal solicitation, award type, and project evaluation—

(A) to more closely align with current agency priorities and initiatives;

(B) to focus EPSCoR funding on achieving critical scientific, infrastructure, and educational needs of that agency;

(C) to encourage collaboration between EPSCoR-eligible institutions and researchers, including with institutions and researchers in other States and jurisdictions;

(D) to improve communication between State and Federal agency proposal reviewers; and

(E) to continue to reduce administrative burdens associated with EPSCoR;

(2) consider modifications to EPSCoR award structures—

(A) to emphasize long-term investments in building research capacity, potentially through the use of larger, renewable funding opportunities; and

(B) to allow the agency, States, and jurisdictions to experiment with new research and development funding models; and

(3) consider modifications to the mechanisms used to monitor and evaluate EPSCoR awards—

(A) to increase collaboration between EPSCoR-funded researchers and agency staff, including by providing opportunities for mentoring young researchers and for the use of Federal facilities;

(B) to identify and disseminate best practices; and

(C) to harmonize metrics across participating Federal agencies, as appropriate.

(Pub. L. 111-358, title V, §517, Jan. 4, 2011, 124 Stat. 4013; Pub. L. 114-329, title I, §103(a), (c), (d)(1), Jan. 6, 2017, 130 Stat. 2972-2974.)

**Editorial Notes**

REFERENCES IN TEXT

The National Science Foundation Act of 1950, referred to in subsec. (a)(1), is act May 10, 1950, ch. 171, 64 Stat. 149, which is classified generally to this chapter. For complete classification of this Act to the Code, see Short Title note set out under section 1861 of this title and Tables.

CODIFICATION

Section was enacted as part of the America COMPETES Reauthorization Act of 2010, also known as the America Creating Opportunities to Meaningfully Promote Excellence in Technology, Education, and Science Reauthorization Act of 2010, and also as part of the National Science Foundation Authorization Act of 2010, and not as part of the National Science Foundation Act of 1950 which comprises this chapter.

AMENDMENTS

2017—Subsec. (a)(1). Pub. L. 114-329, §103(a)(1), substituted “the National” for “The National” and “such research and education” for “such research and education.”.

Subsec. (a)(2). Pub. L. 114-329, §103(a)(2), substituted “with 28 States and jurisdictions, taken together, receiving only about 12 percent of all National Science Foundation research funding;” for “with 27 States and 2 jurisdictions, taken together, receiving only about 10 percent of all NSF research funding; each of these States received only a fraction of one percent of Foundation’s research dollars each year;”.

Subsec. (a)(3). Pub. L. 114-329, §103(a)(3), added par. (3) and struck out former par. (3) which read as follows: “the Nation requires the talent, expertise, and research capabilities of all States in order to prepare sufficient numbers of scientists and engineers, remain globally competitive and support economic development.”

Subsec. (a)(4) to (8). Pub. L. 114-329, §103(a)(4), added pars. (4) to (8).

Subsec. (c). Pub. L. 114-329, §103(d)(1)(A), (B), redesignated subsec. (d) as (c) and struck out former subsec. (c) which related to congressional reports.

Subsec. (c)(1). Pub. L. 114-329, §103(d)(1)(C)(i), substituted “EPSCoR” for “Experimental Programs to Stimulate Competitive Research”.

Subsec. (c)(2)(A). Pub. L. 114-329, §103(d)(1)(C)(ii)(I), substituted “each EPSCoR” for “EPSCoR and Federal EPSCoR-like programs”.

Subsec. (c)(2)(D). Pub. L. 114-329, §103(d)(1)(C)(ii)(II), substituted “each EPSCoR” for “EPSCoR and other Federal EPSCoR-like programs”.

Subsec. (c)(2)(E). Pub. L. 114-329, §103(d)(1)(C)(ii)(III), which directed substitution of “each EPSCoR” for “EPSCoR or Federal EPSCoR-like programs” was executed by substituting “among each EPSCoR” for “among EPSCoR or EPSCoR-like programs”, to reflect the probable intent of Congress.

Pub. L. 114-329, §103(d)(1)(C)(ii)(I), substituted “of each EPSCoR” for “of EPSCoR and Federal EPSCoR-like programs”.

Subsec. (c)(2)(G). Pub. L. 114–329, §103(d)(1)(C)(ii)(IV), substituted “each EPSCoR” for “EPSCoR programs”.

Subsec. (d). Pub. L. 114–329, §103(d)(1)(D), amended subsec. (d) generally. Prior to amendment, subsec. (d) related to Federal agency reports.

Pub. L. 114–329, §103(d)(1)(B), redesignated subsec. (e) as (d). Former subsec. (d) redesignated (c).

Subsec. (e). Pub. L. 114–329, §103(d)(1)(B), redesignated subsec. (f) as (e). Former subsec. (e) redesignated (d).

Subsec. (e)(1). Pub. L. 114–329, §103(d)(1)(E), substituted “EPSCoR” for “Experimental Program to Stimulate Competitive Research or a program similar to the Experimental Program to Stimulate Competitive Research”.

Subsec. (f). Pub. L. 114–329, §103(d)(1)(B), redesignated subsec. (g) as (f). Former subsec. (f) redesignated (e).

Subsec. (g). Pub. L. 114–329, §103(c), (d)(1)(B), added subsec. (g) and then redesignated it as (f).

#### Statutory Notes and Related Subsidiaries

##### DEFINITIONS

For definitions of terms used in this section, see section 502 of Pub. L. 111–358, set out as a note under section 1862p of this title.

#### § 1862p–10. Academic technology transfer and commercialization of university research

##### (a) In general

Any institution of higher education (as such term is defined in section 1001(a)<sup>1</sup> of title 20) that receives National Science Foundation research support and has received at least \$25,000,000 in total Federal research grants in the most recent fiscal year shall keep, maintain, and report annually to the National Science Foundation the universal record locator for a public website that contains information concerning its general approach to and mechanisms for transfer of technology and the commercialization of research results, including—

(1) contact information for individuals and university offices responsible for technology transfer and commercialization;

(2) information for both university researchers and industry on the institution’s technology licensing and commercialization strategies;

(3) success stories, statistics, and examples of how the university supports commercialization of research results;

(4) technologies available for licensing by the university where appropriate; and

(5) any other information deemed by the institution to be helpful to companies with the potential to commercialize university inventions.

##### (b) NSF website

The National Science Foundation shall create and maintain a website accessible to the public that links to each website mentioned under (a).

##### (c) Trade secret information

Notwithstanding subsection (a), an institution shall not be required to reveal confidential, trade secret, or proprietary information on its website.

(Pub. L. 111–358, title V, §520, Jan. 4, 2011, 124 Stat. 4016.)

<sup>1</sup> See References in Text note below.

#### Editorial Notes

##### REFERENCES IN TEXT

Section 1001(a) of title 20, referred to in subsec. (a), was in the original “section 101(A) of the Higher Education Act of 1965 (20 U.S.C. 1001(a))”, and was translated as reading “section 101(a)” of that Act, to reflect the probable intent of Congress.

##### CODIFICATION

Section was enacted as part of the America COMPETES Reauthorization Act of 2010, also known as the America Creating Opportunities to Meaningfully Promote Excellence in Technology, Education, and Science Reauthorization Act of 2010, and also as part of the National Science Foundation Authorization Act of 2010, and not as part of the National Science Foundation Act of 1950 which comprises this chapter.

#### § 1862p–11. NSF grants in support of sponsored post-doctoral fellowship programs

The Director of the National Science Foundation may utilize funds appropriated to carry out grants to institutions of higher education (as such term is defined in section 1001(a) of title 20) to provide financial support for post-graduate research in fields with potential commercial applications to match, in whole or in part, any private sector grant of financial assistance to any post-doctoral program in such a field of study.

(Pub. L. 111–358, title V, §522, Jan. 4, 2011, 124 Stat. 4017.)

#### Editorial Notes

##### CODIFICATION

Section was enacted as part of the America COMPETES Reauthorization Act of 2010, also known as the America Creating Opportunities to Meaningfully Promote Excellence in Technology, Education, and Science Reauthorization Act of 2010, and also as part of the National Science Foundation Authorization Act of 2010, and not as part of the National Science Foundation Act of 1950 which comprises this chapter.

#### § 1862p–12. Cloud computing research enhancement

##### (a) Research focus area

The Director may support a national research agenda in key areas affected by the increased use of public and private cloud computing, including—

(1) new approaches, techniques, technologies, and tools for—

(A) optimizing the effectiveness and efficiency of cloud computing environments; and

(B) mitigating security, identity, privacy, reliability, and manageability risks in cloud-based environments, including as they differ from traditional data centers;

(2) new algorithms and technologies to define, assess, and establish large-scale, trustworthy, cloud-based infrastructures;

(3) models and advanced technologies to measure, assess, report, and understand the performance, reliability, energy consumption, and other characteristics of complex cloud environments; and

(4) advanced security technologies to protect sensitive or proprietary information in global-scale cloud environments.