

(Pub. L. 111-358, title V, §505, Jan. 4, 2011, 124 Stat. 4007.)

#### 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.

#### DEFINITIONS

For definition of “STEM” as used in this section, see section 2 of Pub. L. 111-358, set out as a note under section 6621 of this title.

Pub. L. 111-358, title V, §502, Jan. 4, 2011, 124 Stat. 4005, as amended by Pub. L. 114-329, title I, §103(e)(1), Jan. 6, 2017, 130 Stat. 2975, provided that: “In this subtitle [subtitle A (§§501-527) of title V of Pub. L. 111-358, enacting this section and sections 1862p-1 to 1862p-15 of this title, amending sections 1862n-1a, 1862n-5, 1863, and 1869 of this title, and enacting provisions set out as notes under sections 1862p and 1869 of this title]:

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

“(2) EPSCoR.—The term ‘EPSCoR’ means—

“(A) the Established Program to Stimulate Competitive Research established by the Foundation; or

“(B) a program similar to the Established Program to Stimulate Competitive Research at another Federal agency.

“(3) FOUNDATION.—The term ‘Foundation’ means the National Science Foundation established under section 2 of the National Science Foundation Act of 1950 (42 U.S.C. 1861).

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

“(5) STATE.—The term ‘State’ means one of the several States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, or any other territory or possession of the United States.

“(6) UNITED STATES.—The term ‘United States’ means the several States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Northern Mariana Islands, and any other territory or possession of the United States.”

### § 1862p-1. National Science Foundation manufacturing research and education

#### (a) Manufacturing research

The Director shall carry out a program to award merit-reviewed, competitive grants to institutions of higher education to support fundamental research leading to transformative advances in manufacturing technologies, processes, and enterprises that will support United States manufacturing through improved performance, productivity, sustainability, and competitiveness. Research areas may include—

- (1) nanomanufacturing;
- (2) manufacturing and construction machines and equipment, including robotics, automation, and other intelligent systems;
- (3) manufacturing enterprise systems;
- (4) advanced sensing and control techniques;
- (5) materials processing; and
- (6) information technologies for manufacturing, including predictive and real-time models and simulations, and virtual manufacturing.

#### (b) Manufacturing education

In order to help ensure a well-trained manufacturing workforce, the Director shall award grants to strengthen and expand scientific and technical education and training in advanced manufacturing, including through the Foundation’s Advanced Technological Education program.

(Pub. L. 111-358, title V, §506, Jan. 4, 2011, 124 Stat. 4007.)

#### CODIFICATION

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#### 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-2. Partnerships for innovation

#### (a) In general

The Director shall carry out a program to award merit-reviewed, competitive grants to institutions of higher education to establish and to expand partnerships that promote innovation and increase the impact of research by developing tools and resources to connect new scientific discoveries to practical uses.

#### (b) Partnerships

##### (1) In general

To be eligible for funding under this section, an institution of higher education must propose establishment of a partnership that—

(A) includes at least one private sector entity; and

(B) may include other institutions of higher education, public sector institutions, private sector entities, and nonprofit organizations.

##### (2) Priority

In selecting grant recipients under this section, the Director shall give priority to partnerships that include one or more institutions of higher education and at least one of the following:

(A) A minority serving institution.

(B) A primarily undergraduate institution.

(C) A 2-year institution of higher education.

#### (c) Program

Proposals funded under this section shall seek—

(1) to increase the impact of the most promising research at the institution or institutions of higher education that are members of the partnership through knowledge transfer or commercialization;

(2) to increase the engagement of faculty and students across multiple disciplines and departments, including faculty and students in schools of business and other appropriate

non-STEM fields and disciplines in knowledge transfer activities;

(3) to enhance education and mentoring of students and faculty in innovation and entrepreneurship through networks, courses, and development of best practices and curricula;

(4) to strengthen the culture of the institution or institutions of higher education to undertake and participate in activities related to innovation and leading to economic or social impact;

(5) to broaden the participation of all types of institutions of higher education in activities to meet STEM workforce needs and promote innovation and knowledge transfer; and

(6) to build lasting partnerships with local and regional businesses, local and State governments, and other relevant entities.

**(d) Additional criteria**

In selecting grant recipients under this section, the Director shall also consider the extent to which the applicants are able to demonstrate evidence of institutional support for, and commitment to—

(1) achieving the goals of the program as described in subsection (c);

(2) expansion to an institution-wide program if the initial proposal is not for an institution-wide program; and

(3) sustaining any new innovation tools and resources generated from funding under this program.

**(e) Limitation**

No funds provided under this section may be used to construct or renovate a building or structure.

(Pub. L. 111-358, title V, §508, Jan. 4, 2011, 124 Stat. 4008.)

**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.

**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-3. Sustainable chemistry basic research**

The Director shall establish a Green Chemistry Basic Research program to award competitive, merit-based grants to support research into green and sustainable chemistry which will lead to clean, safe, and economical alternatives to traditional chemical products and practices. The research program shall provide sustained support for green chemistry research, education, and technology transfer through—

(1) merit-reviewed competitive grants to individual investigators and teams of investigators, including, to the extent practicable, young investigators, for research;

(2) grants to fund collaborative research partnerships among universities, industry, and nonprofit organizations;

(3) symposia, forums, and conferences to increase outreach, collaboration, and dissemination of green chemistry advances and practices; and

(4) education, training, and retraining of undergraduate and graduate students and professional chemists and chemical engineers, including through partnerships with industry, in green chemistry science and engineering.

(Pub. L. 111-358, title V, §509, Jan. 4, 2011, 124 Stat. 4009.)

**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.

**COORDINATION OF SUSTAINABLE CHEMISTRY RESEARCH AND DEVELOPMENT**

Pub. L. 114-329, title I, §114, Jan. 6, 2017, 130 Stat. 2993, provided that:

“(a) IMPORTANCE OF SUSTAINABLE CHEMISTRY.—It is the sense of Congress that—

“(1) the science of chemistry is vital to improving the quality of human life and plays an important role in addressing critical global challenges, including water quality, energy, health care, and agriculture;

“(2) sustainable chemistry can reduce risks to human health and the environment, reduce waste, improve pollution prevention, promote safe and efficient manufacturing, and promote efficient use of resources in developing new materials, processes, and technologies that support viable long-term solutions to a significant number of challenges;

“(3) sustainable chemistry can stimulate innovation, encourage new and creative approaches to problems, create jobs, and save money; and

“(4) a coordinated effort on sustainable chemistry will allow for a greater return on research investment in this area.

“(b) SUSTAINABLE CHEMISTRY BASIC RESEARCH.—Subject to the availability of appropriated funds, the Director of the [National Science] Foundation may continue to carry out the Sustainable Chemistry Basic Research program authorized under section 509 of the National Science Foundation Authorization Act of 2010 (42 U.S.C. 1862p-3).”

**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-4. Undergraduate broadening participation program**

The Foundation shall continue to support the Historically Black Colleges and Universities Undergraduate Program, the Louis Stokes Alliances for Minority Participation program, the Tribal Colleges and Universities Program, and Hispanic-serving institutions as separate programs.

(Pub. L. 111-358, title V, §512, Jan. 4, 2011, 124 Stat. 4011.)

**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