

**TITLE 42 - THE PUBLIC HEALTH AND WELFARE  
CHAPTER 16 - NATIONAL SCIENCE FOUNDATION****§ 1862p–15. Twenty-first century graduate education****(a) In general**

The Director shall award grants, on a competitive, merit-reviewed basis, to institutions of higher education to implement or expand research-based reforms in master's and doctoral level STEM education that emphasize preparation for diverse careers utilizing STEM degrees, including at diverse types of institutions of higher education, in industry, and at government agencies and research laboratories.

**(b) Uses of funds**

Activities supported by grants under this section may include—

- (1) creation of multidisciplinary or interdisciplinary courses or programs for the purpose of improved student instruction and research in STEM;
- (2) expansion of graduate STEM research opportunities to include interdisciplinary research opportunities and research opportunities in industry, at Federal laboratories, and at international research institutions or research sites;
- (3) development and implementation of future faculty training programs focused on improved instruction, mentoring, assessment of student learning, and support of undergraduate STEM students;
- (4) support and training for graduate students to participate in instructional activities beyond the traditional teaching assistantship, and especially as part of ongoing educational reform efforts, including at pre-K–12 schools, and primarily undergraduate institutions;
- (5) creation, improvement, or expansion of innovative graduate programs such as science master's degree programs;
- (6) development and implementation of seminars, workshops, and other professional development activities that increase the ability of graduate students to engage in innovation, technology transfer, and entrepreneurship;
- (7) development and implementation of seminars, workshops, and other professional development activities that increase the ability of graduate students to effectively communicate their research findings to technical audiences outside of their own discipline and to nontechnical audiences;
- (8) expansion of successful STEM reform efforts beyond a single academic unit to other STEM academic units within an institution or to comparable academic units at other institutions; and
- (9) research on teaching and learning of STEM at the graduate level related to the proposed reform effort, including assessment and evaluation of the proposed reform activities and research on scalability and sustainability of approaches to reform.

**(c) Partnership**

An institution of higher education may partner with one or more other nonprofit education or research organizations, including scientific and engineering societies, for the purposes of carrying out the activities authorized under this section.

**(d) Selection process****(1) Applications**

An institution of higher education seeking 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) a description of the proposed reform effort;

- (B) in the case of applications that propose an expansion of a previously implemented reform effort at the applicant's institution or at other institutions, a description of the previously implemented reform effort;
- (C) evidence of institutional support for, and commitment to, the proposed reform effort, including long-term commitment to implement successful strategies from the current reform effort beyond the academic unit or units included in the grant proposal or to disseminate successful strategies to other institutions; and
- (D) a description of the plans for assessment and evaluation of the grant proposed reform activities.

## (2) Review of applications

In selecting grant recipients under this section, the Director shall consider at a minimum—

- (A) the likelihood of success in undertaking the proposed effort at the institution submitting the application, including the extent to which the faculty, staff, and administrators of the institution are committed to making the proposed institutional reform a priority of the participating academic unit or units;
- (B) the degree to which the proposed reform will contribute to change in institutional culture and policy such that a greater value is placed on preparing graduate students for diverse careers utilizing STEM degrees;
- (C) the likelihood that the institution will sustain or expand the reform beyond the period of the grant; and
- (D) the degree to which scholarly assessment and evaluation plans are included in the design of the reform effort.

(Pub. L. 111–358, title V, § 527, Jan. 4, 2011, 124 Stat. 4020.)

### 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.