

111TH CONGRESS
2D SESSION

H. R. 4968

To authorize the National Science Foundation to award grants for implementing or expanding research-based reforms in master's and doctoral level STEM education that emphasize preparation for diverse careers in the STEM workforce.

IN THE HOUSE OF REPRESENTATIVES

MARCH 25, 2010

Ms. GIFFORDS introduced the following bill; which was referred to the Committee on Science and Technology, and in addition to the Committee on Education and Labor, for a period to be subsequently determined by the Speaker, in each case for consideration of such provisions as fall within the jurisdiction of the committee concerned

A BILL

To authorize the National Science Foundation to award grants for implementing or expanding research-based reforms in master's and doctoral level STEM education that emphasize preparation for diverse careers in the STEM workforce.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. 21ST CENTURY GRADUATE EDUCATION.**

4 (a) IN GENERAL.—The Director of the National
5 Science Foundation shall award grants, on a competitive,
6 merit-reviewed basis, to institutions of higher education to

1 implement or expand research-based reforms in master's
2 and doctoral level STEM education that emphasize prepa-
3 ration for diverse careers in the STEM workforce, includ-
4 ing at diverse types of institutions of higher education, in
5 industry, and at government agencies and research labora-
6 tories.

7 (b) USES OF FUNDS.—Activities supported by grants
8 under this section may include—

9 (1) creation of multidisciplinary or interdiscipli-
10 nary courses or programs that formalize collabora-
11 tions for the purpose of improved student instruction
12 and research in STEM;

13 (2) expansion of graduate STEM research op-
14 portunities to include interdisciplinary research op-
15 portunities and research opportunities in industry,
16 at Federal laboratories, and at international re-
17 search institutions or research sites;

18 (3) development and implementation of future
19 faculty training programs focused on improved in-
20 struction, mentoring, evaluation, and support of un-
21 dergraduate STEM students;

22 (4) support and training for graduate students
23 to participate in instructional activities beyond the
24 traditional teaching assistantship, and especially as
25 part of ongoing educational reform efforts, including

1 at K–12 schools and at primarily undergraduate in-
2 stitutions;

3 (5) development and implementation of semi-
4 nars, workshops, and other professional development
5 activities that increase the engagement and edu-
6 cation of graduate students in the innovation and
7 technology transfer process;

8 (6) development and implementation of semi-
9 nars, workshops, and other professional development
10 activities that increase the ability of graduate stu-
11 dents to effectively communicate their research find-
12 ings to technical audiences outside of their own dis-
13 cipline and to nontechnical audiences;

14 (7) expansion of successful STEM reform ef-
15 forts beyond a single academic unit to other STEM
16 academic units within an institution; and

17 (8) research on teaching and learning of STEM
18 at the graduate level related to the proposed reform
19 effort, including assessment and evaluation of the
20 proposed reform activities and research on scalability
21 and sustainability of approaches to reform.

22 (c) SELECTION PROCESS.—

23 (1) APPLICATIONS.—An institution of higher
24 education seeking a grant under this section shall
25 submit an application to the Director at such time,

1 in such manner, and containing such information as
2 the Director may require. The application shall in-
3 clude, at a minimum—

4 (A) a description of the proposed reform
5 effort;

6 (B) in the case of applications that propose
7 an expansion of a previously implemented re-
8 form effort, a description of the previously im-
9 plemented reform effort;

10 (C) evidence of institutional support for,
11 and commitment to, the proposed reform effort,
12 including long-term commitment to implement
13 successful strategies from the current reform
14 effort beyond the academic unit or units in-
15 cluded in the grant proposal; and

16 (D) a description of the plans for assess-
17 ment and evaluation of the grant proposed re-
18 form activities.

19 (2) REVIEW OF APPLICATIONS.—In selecting
20 grant recipients under this section, the Director
21 shall consider at a minimum—

22 (A) the likelihood of success in under-
23 taking the proposed effort at the institution
24 submitting the application, including the extent
25 to which the faculty, staff, and administrators

1 of the institution are committed to making the
2 proposed institutional reform a priority of the
3 participating academic unit or units;

4 (B) the degree to which the proposed re-
5 form will contribute to change in institutional
6 culture and policy such that a greater value is
7 placed on preparing graduate students for di-
8 verse careers in the STEM workforce;

9 (C) the likelihood that the institution will
10 sustain or expand the reform beyond the period
11 of the grant; and

12 (D) the degree to which scholarly assess-
13 ment and evaluation plans are included in the
14 design of the reform effort.

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