

109TH CONGRESS
2^D SESSION

H. R. 6195

To authorize the National Science Foundation to award grants to institutions of higher education to develop and offer education and training programs.

IN THE HOUSE OF REPRESENTATIVES

SEPTEMBER 26, 2006

Mr. WU introduced the following bill; which was referred to the Committee on Science

A BILL

To authorize the National Science Foundation to award grants to institutions of higher education to develop and offer education and training programs.

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. SHORT TITLE.**

4 This Act may be cited as the “10,000 Trained by
5 2011 Act”.

6 **SEC. 2. FINDINGS.**

7 The Congress finds that—

8 (1) the National Science Foundation has long
9 been a government leader in strengthening our Na-
10 tion’s information infrastructure;

1 (2) as automation and digitization penetrate
2 additional industries, they will need to draw heavily
3 on the expertise of researchers funded by the Na-
4 tional Science Foundation for the collection, proc-
5 essing, and utilization of information;

6 (3) the National Science Foundation’s basic re-
7 search, demonstrations, and curriculum development
8 assistance are all required to help make sure indus-
9 try has the knowledge, procedures, and workforce
10 necessary to take full advantage of advanced com-
11 munications and information technology;

12 (4) information management is growing in im-
13 portance with projected growth of 49 percent by
14 2010 in some major sectors related to biology; and

15 (5) no systematic plan exists for designing and
16 implementing systems and information tools and for
17 ensuring that major segments of the United States
18 workforce can make the transition to the informa-
19 tion age.

20 **SEC. 3. DEFINITIONS.**

21 In this Act:

22 (1) DIRECTOR.—The term “Director” means
23 the Director of the National Science Foundation.

24 (2) INFORMATION.—The term “information”
25 means information in those segments of the United

1 States economy where the Federal Government plays
2 a significant role and where a transition is underway
3 to the use of digital data.

4 (3) INSTITUTION OF HIGHER EDUCATION.—The
5 term “institution of higher education” has the
6 meaning give that term in section 101 of the Higher
7 Education Act of 1965 (20 U.S.C. 1001).

8 **SEC. 4. NATIONAL SCIENCE FOUNDATION RESEARCH.**

9 (a) GRANTS.—

10 (1) IN GENERAL.—The Director, in consulta-
11 tion with the heads of other Federal agencies as ap-
12 propriate, shall award grants for basic research on
13 innovative approaches to improve information sys-
14 tems. Research areas may include—

15 (A) information studies;

16 (B) population informatics;

17 (C) translational informatics; and

18 (D) data security, integrity, and confiden-
19 tiality.

20 (2) MERIT REVIEW; COMPETITION.—Grants
21 shall be awarded under this section on a merit-re-
22 viewed, competitive basis.

23 (3) AUTHORIZATION OF APPROPRIATIONS.—

24 There are authorized to be appropriated to the Na-

1 tional Science Foundation to carry out this sub-
2 section—

3 (A) \$3,500,000 for fiscal year 2008;

4 (B) \$3,600,000 for fiscal year 2009;

5 (C) \$3,700,000 for fiscal year 2010; and

6 (D) \$3,800,000 for fiscal year 2011.

7 (b) INFORMATICS RESEARCH CENTERS.—

8 (1) IN GENERAL.—The Director, in consulta-
9 tion with the heads of other Federal agencies as ap-
10 propriate, shall award multiyear grants, subject to
11 the availability of appropriations, to institutions of
12 higher education (or consortia thereof) to establish
13 multidisciplinary Centers for Informatics Research.
14 Institutions of higher education (or consortia there-
15 of) receiving such grants may partner with one or
16 more government laboratories, for-profit institutions,
17 or nonprofit institutions.

18 (2) MERIT REVIEW; COMPETITION.—Grants
19 shall be awarded under this subsection on a merit-
20 reviewed, competitive basis.

21 (3) PURPOSE.—The purpose of the Centers
22 shall be to generate innovative approaches in infor-
23 mation by conducting cutting-edge, multidisciplinary
24 research, including in the research areas described in
25 subsection (a)(1).

1 (4) APPLICATIONS.—An institution of higher
2 education (or a consortium thereof) seeking funding
3 under this subsection shall submit an application to
4 the Director at such time, in such manner, and con-
5 taining such information as the Director may re-
6 quire. The application shall include, at a minimum,
7 a description of—

8 (A) the research projects that will be un-
9 dertaken by the Center and the contributions of
10 each of the participating entities;

11 (B) how the Center will promote active col-
12 laboration among professionals from different
13 disciplines, such as information technology spe-
14 cialists, scientists and other professionals in
15 fields transitioning to dependence on digital in-
16 formation, administrators, and social science re-
17 searchers; and

18 (C) how the Center will contribute to in-
19 creasing the number of information researchers
20 and other professionals.

21 (5) CRITERIA.—In evaluating the applications
22 submitted under paragraph (4), the Director shall
23 consider, at a minimum—

1 (A) the ability of the applicant to generate
2 innovative approaches to information and effec-
3 tively carry out the research program;

4 (B) the experience of the applicant in con-
5 ducting research in the information field, and
6 the capacity of the applicant to foster new mul-
7 tidisciplinary collaborations;

8 (C) the capacity of the applicant to attract
9 and provide adequate support for under-
10 graduate and graduate students to pursue in-
11 formation research; and

12 (D) the extent to which the applicant will
13 partner with government laboratories or for-
14 profit or nonprofit entities, and the role the
15 government laboratories or for-profit or non-
16 profit entities will play in the research under-
17 taken by the Center.

18 (6) ANNUAL MEETING.—The Director shall
19 convene an annual meeting of the Centers in order
20 to foster collaboration and communication between
21 Center participants.

22 (7) AUTHORIZATION OF APPROPRIATIONS.—
23 There are authorized to be appropriated for the Na-
24 tional Science Foundation to carry out this sub-
25 section—

- 1 (A) \$4,500,000 for fiscal year 2008;
2 (B) \$4,600,000 for fiscal year 2009;
3 (C) \$4,700,000 for fiscal year 2010; and
4 (D) \$4,800,000 for fiscal year 2011.

5 **SEC. 5. NATIONAL SCIENCE FOUNDATION INFORMATION**
6 **PROGRAMS.**

7 (a) CAPACITY BUILDING GRANTS.—

8 (1) IN GENERAL.—The Director, in consulta-
9 tion with the heads of other Federal agencies as ap-
10 propriate, shall establish a program to award grants
11 to institutions of higher education (or consortia
12 thereof) to establish or improve undergraduate and
13 master's degree information programs, to increase
14 the number of students who pursue undergraduate
15 or master's degrees in information fields, to provide
16 students with experience in government or industry
17 related to their information studies, and, to the ex-
18 tent practicable, to do so using distance learning.

19 (2) MERIT REVIEW; COMPETITION.—Grants
20 shall be awarded under this subsection on a merit-
21 reviewed, competitive basis.

22 (3) USE OF FUNDS.—Grants awarded under
23 this subsection shall be used for activities that en-
24 hance the ability of an institution of higher edu-
25 cation (or consortium thereof) to provide high-qual-

1 ity information education, including certification and
2 undergraduate and master’s degree programs, and
3 to recruit and retain increased numbers of students
4 to such programs. Activities may include—

5 (A) developing and revising curriculum to
6 better prepare undergraduate and master’s de-
7 gree students for careers in the information
8 field;

9 (B) establishing degree and certificate pro-
10 grams in the information field;

11 (C) creating opportunities in information
12 research for undergraduate students;

13 (D) acquiring equipment necessary for stu-
14 dent instruction in these programs, including
15 the installation of testbed networks for student
16 use;

17 (E) providing opportunities for faculty to
18 work with State, local, or Federal Government
19 agencies, private industry, and other academic
20 institutions to develop new expertise or to for-
21 mulate new information research directions;

22 (F) collaborating with other academic in-
23 stitutions or departments that seek to establish,
24 expand, or enhance these programs;

1 (G) establishing student internships for
2 students in these programs at State, local, and
3 Federal Government agencies, in private indus-
4 try, and in nonprofit institutions;

5 (H) establishing or enhancing bridge pro-
6 grams in information fields between community
7 colleges and universities; and

8 (I) any other activities the Director, in
9 consultation with the heads of other Federal
10 agencies as appropriate, determines will achieve
11 the purposes described in paragraph (1).

12 (4) SELECTION PROCESS.—

13 (A) APPLICATION.—An institution of high-
14 er education (or a consortium thereof) seeking
15 funding under this subsection shall submit an
16 application to the Director at such time, in such
17 manner, and with such contents as the Director
18 may require. The application shall include, at a
19 minimum—

20 (i) a description of the applicant's rel-
21 evant research and instructional capacity,
22 and in the case of an application from a
23 consortium of institutions of higher edu-
24 cation, a description of the role that each

1 member will play in implementing the pro-
2 posal;

3 (ii) a comprehensive plan by which the
4 institution or consortium will build instruc-
5 tional capacity in information fields;

6 (iii) a description of relevant collabo-
7 rations with State, local, or Federal Gov-
8 ernment agencies or private industry that
9 inform the instructional program;

10 (iv) a survey of the applicant's his-
11 toric student enrollment and placement
12 data and a study of potential enrollment
13 and placement for students enrolled in the
14 proposed program; and

15 (v) a plan to evaluate the success of
16 the proposed program, including post-
17 graduate assessment of graduate school
18 and job placement and retention rates as
19 well as the relevance of the instructional
20 program to graduate study and to the
21 workplace.

22 (B) AWARDS.—The Director shall ensure,
23 to the extent practicable, that grants are
24 awarded under this subsection in a wide range

1 of geographic areas and categories of institu-
2 tions of higher education.

3 (5) ASSESSMENT REQUIRED.—The Director, in
4 consultation with the heads of other Federal agen-
5 cies as appropriate, shall evaluate the program es-
6 tablished under this subsection no later than 3 years
7 after the establishment of the program. At a min-
8 imum, the Director shall evaluate the extent to
9 which the grants have achieved their objectives of in-
10 creasing the quality and quantity of students pur-
11 suing undergraduate or master’s degrees in informa-
12 tion fields. The Director shall make this assessment
13 publicly available.

14 (6) AUTHORIZATION OF APPROPRIATIONS.—
15 There are authorized to be appropriated to the Na-
16 tional Science Foundation to carry out this sub-
17 section—

- 18 (A) \$9,000,000 for fiscal year 2008;
19 (B) \$9,200,000 for fiscal year 2009;
20 (C) \$9,400,000 for fiscal year 2010; and
21 (D) \$9,600,000 for fiscal year 2011.

22 (b) SCIENTIFIC AND ADVANCED TECHNOLOGY ACT
23 OF 1992.—

24 (1) GRANTS.—The Director shall provide
25 grants under the Scientific and Advanced Tech-

1 nology Act of 1992 for the purposes of section 3(a)
2 and (b) of that Act, except that the activities sup-
3 ported pursuant to this subsection shall be limited to
4 improving education in fields related to information.

5 (2) AUTHORIZATION OF APPROPRIATIONS.—

6 There are authorized to be appropriated to the Na-
7 tional Science Foundation to carry out this sub-
8 section—

9 (A) \$7,000,000 for fiscal year 2008;

10 (B) \$7,200,000 for fiscal year 2009;

11 (C) \$7,400,000 for fiscal year 2010; and

12 (D) \$7,600,000 for fiscal year 2011.

13 **SEC. 6. REPORT ON STANDARDIZATION OF MEASURES RE-**
14 **LATED TO DIGITAL INFORMATION.**

15 Not later than 120 days after the date of enactment
16 of this Act, the Director of the National Institute of
17 Standards and Technology shall report to the Committee
18 on Science of the House of Representatives and the Com-
19 mittee on Commerce, Science, and Transportation of the
20 Senate on its efforts related to informatics, including
21 standards harmonization, research, and technical support
22 that relates to the work of standards development organi-
23 zations who are developing and maintaining informatics
24 standards, and its efforts in support of executive orders
25 related to digitization and informatics. The report shall

1 also include timetables for the promulgation of informa-
2 tion standards, a description of the major challenges in
3 reaching the point at which these standards can be pro-
4 mulgated, efforts that should be taken to ensure that the
5 digital information is usable by scientists and researchers,
6 and, consistent with Public Law 104–113, a description
7 of those actions that the National Institute of Standards
8 and Technology could take to ensure that these standards
9 are both robust and timely.

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