

Union Calendar No. 291

107TH CONGRESS
2^D SESSION

H. R. 4664

[Report No. 107-488]

To authorize appropriations for fiscal years 2003, 2004, and 2005 for the National Science Foundation, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

MAY 7, 2002

Mr. SMITH of Michigan (for himself, Ms. EDDIE BERNICE JOHNSON of Texas, Mr. BOEHLERT, Mr. HALL of Texas, Mr. SMITH of Texas, Mrs. MORELLA, Mr. HONDA, Mr. EHLERS, Mr. BAIRD, Mr. ETHERIDGE, Mr. NETHERCUTT, Mrs. BIGGERT, Mr. BARCIA, Mr. GILCHREST, Mr. BACA, Mr. CALVERT, Mr. UDALL of Colorado, and Ms. LOFGREN) introduced the following bill; which was referred to the Committee on Science

JUNE 4, 2002

Additional sponsors: Mr. FORBES, Ms. HART, Mr. GRUCCI, Ms. RIVERS, Mr. JOHNSON of Illinois, Ms. WOOLSEY, Mr. LARSON of Connecticut, Mr. MOORE, and Mr. GUTKNECHT

JUNE 4, 2002

Reported with an amendment, committed to the Committee of the Whole House on the State of the Union, and ordered to be printed

[Strike out all after the enacting clause and insert the part printed in italics]

[For text of introduced bill, see copy of bill as introduced on May 7, 2002]

A BILL

To authorize appropriations for fiscal years 2003, 2004, and 2005 for the National Science Foundation, and for other purposes.

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 “Investing in America’s*
5 *Future Act of 2002”.*

6 **SEC. 2 DEFINITIONS.**

7 *In this Act:*

8 (1) *BOARD.*—*The term “Board” means the Na-*
9 *tional Science Board established under section 2 of*
10 *the National Science Foundation Act of 1950 (42*
11 *U.S.C. 1861).*

12 (2) *DIRECTOR.*—*The term “Director” means the*
13 *Director of the National Science Foundation.*

14 (3) *FOUNDATION.*—*The term “Foundation”*
15 *means the National Science Foundation.*

16 (4) *INSTITUTION OF HIGHER EDUCATION.*—*The*
17 *term “institution of higher education” has the mean-*
18 *ing given that term in section 101(a) of the Higher*
19 *Education Act of 1965 (20 U.S.C. 1001(a)).*

20 (5) *NATIONAL RESEARCH FACILITY.*—*The term*
21 *“national research facility” means a research facility*
22 *funded by the Foundation which is available, subject*
23 *to appropriate policies allocating access, for use by all*
24 *scientists and engineers affiliated with research insti-*
25 *tutions located in the United States.*

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

7 **SEC. 3. AUTHORIZATION OF APPROPRIATIONS.**

8 (a) *FISCAL YEAR 2003.*—

9 (1) *IN GENERAL.*—*There are authorized to be ap-*
10 *propriated to the National Science Foundation*
11 *\$5,515,260,000 for fiscal year 2003.*

12 (2) *SPECIFIC ALLOCATIONS.*—*Of the amount au-*
13 *thorized under paragraph (1)—*

14 (A) *\$4,138,440,000 shall be made available*
15 *to carry out Research and Related Activities, of*
16 *which—*

17 (i) *\$704,000,000 shall be for net-*
18 *working and information technology re-*
19 *search;*

20 (ii) *\$238,450,000 shall be for the*
21 *Nanoscale Science and Engineering Pri-*
22 *ority Area;*

23 (iii) *\$60,090,000 shall be for the Math-*
24 *ematical Sciences Priority Area; and*

1 (iv) \$75,900,000 shall be for Major Re-
2 search Instrumentation;

3 (B) \$1,006,250,000 shall be made available
4 for Education and Human Resources, of
5 which—

6 (i) \$50,000,000 shall be for the Ad-
7 vanced Technological Education Program
8 established under section 3 of the Scientific
9 and Advanced-Technology Act of 1992 (42
10 U.S.C. 1862i); and

11 (ii) \$30,000,000 shall be for the Minor-
12 ity Serving Institutions Undergraduate
13 Program;

14 (C) \$152,350,000 shall be made available
15 for Major Research Equipment and Facilities
16 Construction;

17 (D) \$210,160,000 shall be made available
18 for Salaries and Expenses; and

19 (E) \$8,060,000 shall be made available for
20 the Office of Inspector General.

21 (b) FISCAL YEAR 2004.—

22 (1) IN GENERAL.—There are authorized to be ap-
23 propriated to the National Science Foundation
24 \$6,342,550,000 for fiscal year 2004.

1 (2) *SPECIFIC ALLOCATIONS.*—*Of the amount au-*
2 *thorized under paragraph (1)—*

3 (A) *\$4,735,600,000 shall be made available*
4 *to carry out Research and Related Activities, of*
5 *which—*

6 (i) *\$774,000,000 shall be for net-*
7 *working and information technology re-*
8 *search;*

9 (ii) *\$286,140,000 shall be for the*
10 *Nanoscale Science and Engineering Pri-*
11 *ority Area;*

12 (iii) *\$90,090,000 shall be for the Math-*
13 *ematical Sciences Priority Area; and*

14 (iv) *\$85,000,000 shall be for Major Re-*
15 *search Instrumentation;*

16 (B) *\$1,157,190,000 shall be made available*
17 *for Education and Human Resources, of which*
18 *\$55,000,000 shall be for the Advanced Techno-*
19 *logical Education Program established under sec-*
20 *tion 3 of the Scientific and Advanced-Technology*
21 *Act of 1992 (42 U.S.C. 1862i);*

22 (C) *\$225,000,000 shall be made available*
23 *for Major Research Equipment and Facilities*
24 *Construction;*

1 (D) \$216,460,000 shall be made available
2 for Salaries and Expenses; and

3 (E) \$8,300,000 shall be made available for
4 the Office of Inspector General.

5 (c) FISCAL YEAR 2005.—

6 (1) IN GENERAL.—There are authorized to be ap-
7 propriated to the National Science Foundation
8 \$7,293,930,000 for fiscal year 2005.

9 (2) SPECIFIC ALLOCATIONS.—Of the amount au-
10 thorized under paragraph (1)—

11 (A) \$5,445,940,000 shall be made available
12 to carry out Research and Related Activities;

13 (B) \$1,330,770,000 shall be made available
14 for Education and Human Resources;

15 (C) \$285,710,000 shall be made available
16 for Major Research Equipment and Facilities
17 Construction;

18 (D) \$222,960,000 shall be made available
19 for Salaries and Expenses; and

20 (E) \$8,550,000 shall be made available for
21 the Office of Inspector General.

22 **SEC. 4. OBLIGATION OF MAJOR RESEARCH EQUIPMENT**
23 **FUNDS.**

24 (a) FISCAL YEAR 2003.—None of the funds authorized
25 under section 3(a)(2)(C) may be obligated until 30 days

1 *after the first report required under section 7(a)(2) is trans-*
2 *mitted to the Congress.*

3 (b) *FISCAL YEAR 2004.*—None of the funds authorized
4 *under section 3(b)(2)(C) may be obligated until 30 days*
5 *after the report required by June 15, 2003, under section*
6 *7(a)(2) is transmitted to the Congress.*

7 (c) *FISCAL YEAR 2005.*—None of the funds authorized
8 *under section 3(c)(2)(C) may be obligated until 30 days*
9 *after the report required by June 15, 2004, under section*
10 *7(a)(2) is transmitted to the Congress.*

11 **SEC. 5. ANNUAL PLAN FOR ALLOCATION OF FUNDING.**

12 *Not later than 60 days after the date of enactment of*
13 *legislation providing for the annual appropriation of funds*
14 *for the Foundation, the Director shall submit to the Com-*
15 *mittee on Science of the House of Representatives, the Com-*
16 *mittee on Commerce, Science, and Transportation of the*
17 *Senate, and the Committee on Health, Education, Labor,*
18 *and Pensions of the Senate, a plan for the allocation of*
19 *funds authorized by this Act for the corresponding fiscal*
20 *year. The portion of the plan pertaining to Research and*
21 *Related Activities shall include a description of how the al-*
22 *location of funding—*

23 (1) *will affect the average size and duration of*
24 *research grants supported by the Foundation by field*
25 *of science, mathematics, and engineering;*

1 (2) *will affect trends in research support for*
2 *major fields and subfields of science, mathematics,*
3 *and engineering, including for emerging multidisci-*
4 *plinary research areas; and*

5 (3) *is designed to achieve an appropriate balance*
6 *among major fields and subfields of science, mathe-*
7 *matics, and engineering.*

8 **SEC. 6. PROPORTIONAL REDUCTION.**

9 (a) *OVERALL AMOUNTS.—If the amount appropriated*
10 *pursuant to section 3(a)(1), (b)(1), or (c)(1) is less than*
11 *the amount authorized under that paragraph, the amount*
12 *available under each subparagraph of paragraph (2) of that*
13 *subsection shall be reduced by the same proportion.*

14 (b) *RESEARCH AND RELATED ACTIVITIES*
15 *AMOUNTS.—If the amount appropriated pursuant to sec-*
16 *tion 3(a)(2)(A) or (b)(2)(A) is less than the amount author-*
17 *ized under that subparagraph, the amount available under*
18 *each clause of that subparagraph shall be reduced by the*
19 *same proportion.*

20 **SEC. 7. NATIONAL RESEARCH FACILITIES.**

21 (a) *PRIORITIZATION OF PROPOSED MAJOR RESEARCH*
22 *EQUIPMENT AND FACILITIES CONSTRUCTION.—*

23 (1) *DEVELOPMENT OF PRIORITIES.—*

24 (A) *LIST.—The Director shall develop a list*
25 *indicating by number the relative priority for*

1 *funding under the Major Research Equipment*
2 *and Facilities Construction account that the Di-*
3 *rector assigns to each project the Board has ap-*
4 *proved for inclusion in a future budget request.*
5 *The Director shall submit the list to the Board*
6 *for approval.*

7 *(B) UPDATES.—The Director shall update*
8 *the list prepared under paragraph (1) each time*
9 *the Board approves a new project that would re-*
10 *ceive funding under the Major Research Equip-*
11 *ment and Facilities Construction account and as*
12 *necessary to prepare reports under paragraph*
13 *(2). The Director shall submit any updated list*
14 *to the Board for approval.*

15 *(2) ANNUAL REPORT.—Not later than 90 days*
16 *after the date of the enactment of this Act, and not*
17 *later than each June 15th thereafter, the Director*
18 *shall transmit to the Congress a report containing—*

19 *(A) the most recent Board-approved pri-*
20 *ority list developed under paragraph (1);*

21 *(B) a description of the criteria used to de-*
22 *velop such list; and*

23 *(C) a description of the major factors for*
24 *each project that determined its ranking on the*

1 *list, based on the application of the criteria de-*
2 *scribed pursuant to subparagraph (B).*

3 *(3) CRITERIA.—The criteria described pursuant*
4 *to paragraph (2)(B) shall include, at a minimum—*

5 *(A) scientific merit;*

6 *(B) broad societal need and probable im-*
7 *pact;*

8 *(C) consideration of the results of formal*
9 *prioritization efforts by the scientific commu-*
10 *nity;*

11 *(D) readiness of plans for construction and*
12 *operation;*

13 *(E) international and interagency commit-*
14 *ments; and*

15 *(F) the order in which projects were ap-*
16 *proved by the Board for inclusion in a future*
17 *budget request.*

18 *(b) FACILITIES PLAN.—*

19 *(1) IN GENERAL.—Section 201(a)(1) of the Na-*
20 *tional Science Foundation Authorization Act of 1998*
21 *(42 U.S.C. 1862l(a)(1)) is amended to read as follows:*

22 *“(1) IN GENERAL.—The Director shall prepare,*
23 *and include as part of the Foundation’s annual budg-*
24 *et request to Congress, a plan for the proposed con-*
25 *struction of, and repair and upgrades to, national re-*

1 *search facilities, including full life-cycle cost informa-*
2 *tion.”.*

3 (2) *CONTENTS OF PLAN.*—Section 201(a)(2) of
4 *the National Science Foundation Authorization Act of*
5 *1998 (42 U.S.C. 1862l(a)(2)) is amended—*

6 (A) *in subparagraph (A), by inserting “,*
7 *including costs for instrumentation development”*
8 *after “described in paragraph (1)”;*

9 (B) *by striking “and” at the end of sub-*
10 *paragraph (B);*

11 (C) *by striking the period at the end of sub-*
12 *paragraph (C) and inserting a semicolon; and*

13 (D) *by adding at the end the following new*
14 *subparagraphs:*

15 “(D) *for each project funded under the*
16 *Major Research Equipment and Facilities Con-*
17 *struction account—*

18 “(i) *estimates of the total project cost*
19 *(from planning to commissioning); and*

20 “(ii) *the source of funds, including*
21 *Federal funding identified by appropria-*
22 *tions category and non-Federal funding;*

23 “(E) *estimates of the full life-cycle cost of*
24 *each national research facility;*

1 “(F) information on any plans to retire na-
2 tional research facilities; and

3 “(G) estimates of funding levels for grants
4 supporting research that will make use of each
5 national research facility.”.

6 (3) *DEFINITION.*—Section 2 of the National
7 Science Foundation Authorization Act of 1998 (42
8 U.S.C. 1862k note) is amended—

9 (A) by redesignating paragraphs (3)
10 through (5) as paragraphs (4) through (6), re-
11 spectively; and

12 (B) by inserting after paragraph (2) the fol-
13 lowing new paragraph:

14 “(3) *FULL LIFE-CYCLE COST.*—The term ‘full
15 life-cycle cost’ means all costs of development, pro-
16 curement, construction, operations and support, and
17 shut down costs, without regard to funding source and
18 without regard to what entity manages the project.”.

19 (c) *PROJECT MANAGEMENT.*—No national research fa-
20 cility project funded under the Major Research Equipment
21 and Facilities Construction account shall be managed by
22 an individual whose appointment to the Foundation is tem-
23 porary.

1 **SEC. 8. MAJOR RESEARCH INSTRUMENTATION.**

2 *The Foundation shall conduct a review and assessment*
3 *of the Major Research Instrumentation Program and pro-*
4 *vide a report to Congress on its findings and recommenda-*
5 *tions within 1 year after the date of the enactment of this*
6 *Act. The report shall include—*

7 (1) *estimates of the needs, by major field of*
8 *science and engineering, of institutions of higher edu-*
9 *cation for the types of research instrumentation that*
10 *are eligible for funding under the guidelines of the*
11 *Major Research Instrumentation Program;*

12 (2) *the distribution of awards and funding levels*
13 *by year and by major field of science and engineering*
14 *for the Major Research Instrumentation Program,*
15 *since the inception of the Program; and*

16 (3) *an analysis of the impact of the Major Re-*
17 *search Instrumentation Program on the research in-*
18 *strumentation needs that were documented in the*
19 *Foundation's 1994 survey of academic research in-*
20 *strumentation needs.*

21 **SEC. 9. ASTRONOMY AND ASTROPHYSICS ADVISORY COM-**
22 **MITTEE.**

23 (a) *ESTABLISHMENT.—The Foundation and the Na-*
24 *tional Aeronautics and Space Administration shall jointly*
25 *establish an Astronomy and Astrophysics Advisory Com-*

1 *mittee (in this section referred to as the “Advisory Com-*
2 *mittee”).*

3 *(b) DUTIES.—The Advisory Committee shall—*

4 *(1) assess, and make recommendations regard-*
5 *ing, the coordination of astronomy and astrophysics*
6 *programs of the Foundation and the National Aero-*
7 *navitics and Space Administration;*

8 *(2) assess, and make recommendations regard-*
9 *ing, the status of the activities of the Foundation and*
10 *the National Aeronautics and Space Administration*
11 *as they relate to the recommendations contained in*
12 *the National Research Council’s 2001 report entitled*
13 *“Astronomy and Astrophysics in the New Millen-*
14 *nium”, and the recommendations contained in subse-*
15 *quent National Research Council reports of a similar*
16 *nature; and*

17 *(3) not later than March 15 of each year, trans-*
18 *mit a report to the Director, the Administrator of the*
19 *National Aeronautics and Space Administration, and*
20 *the Congress on the Advisory Committee’s findings*
21 *and recommendations under paragraphs (1) and (2).*

22 *(c) MEMBERSHIP.—The Advisory Committee shall*
23 *consist of 13 members, none of whom shall be a Federal*
24 *employee, including—*

25 *(1) 5 members selected by the Foundation;*

1 (2) 5 members selected by the National Aero-
2 nautics and Space Administration; and

3 (3) 3 members selected by the members selected
4 under paragraphs (1) and (2).

5 (d) *SELECTION PROCESS.*—Initial selections under
6 subsection (c)(1) and (2) shall be made within 3 months
7 after the date of the enactment of this Act. Initial selections
8 under subsection (c)(3) shall be made within 5 months after
9 the date of the enactment of this Act. Vacancies shall be
10 filled in the same manner as provided in subsection (c).

11 (e) *CHAIRPERSON.*—The Advisory Committee shall se-
12 lect a chairperson from among its members.

13 (f) *COORDINATION.*—The Advisory Committee shall co-
14 ordinate with the advisory bodies of other Federal agencies,
15 such as the Department of Energy, which may engage in
16 related research activities.

17 (g) *COMPENSATION.*—The members of the Advisory
18 Committee shall serve without compensation, but shall re-
19 ceive travel expenses, including per diem in lieu of subsist-
20 ence, in accordance with sections 5702 and 5703 of title
21 5, United States Code.

22 (h) *MEETINGS.*—The Advisory Committee shall con-
23 vene, in person or by electronic means, at least 4 times a
24 year.

25 (i) *QUORUM.*—

1 (1) *IN GENERAL.*—*Except as provided in para-*
2 *graph (2), a majority of the members serving on the*
3 *Advisory Committee shall constitute a quorum for*
4 *purposes of conducting the business of the Advisory*
5 *Committee.*

6 (2) *EXCEPTION.*—*The selection of a member*
7 *under subsection (c)(3) shall require a vote of $\frac{3}{4}$ of*
8 *the members appointed under subsection (c)(1) and*
9 *(2).*

10 (j) *DURATION.*—*Section 14 of the Federal Advisory*
11 *Committee Act shall not apply to the Advisory Committee.*

12 **SEC. 10. BOARD MEETINGS.**

13 (a) *PURPOSE.*—*The purpose of this section is to ensure*
14 *that the Board complies with the requirements of section*
15 *552b of title 5, United States Code, that all meetings, with*
16 *the exception of specific narrow statutory exemptions, be*
17 *open to the public.*

18 (b) *COMPLIANCE AUDIT.*—*The Inspector General of the*
19 *National Science Foundation shall conduct an annual*
20 *audit of the compliance by the Board with the requirements*
21 *described in subsection (a). The audit shall examine the ex-*
22 *tent to which the proposed and actual content of closed*
23 *meetings is consistent with those requirements.*

24 (c) *REPORT.*—*Not later than February 15 of each*
25 *year, the Inspector General of the National Science Founda-*

1 *tion shall transmit to the Congress the audit required under*
2 *subsection (b) along with recommendations for corrective*
3 *actions that need to be taken to achieve fuller compliance*
4 *with the requirements described in subsection (a), and rec-*
5 *ommendations on how to ensure public access to the Board's*
6 *deliberations.*

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