

(Original Signature of Member)

113TH CONGRESS
2D SESSION

H. R. 4186

To provide for investment in innovation through scientific research and development, to improve the competitiveness of the United States, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

Mr. BUCSHON (for himself and Mr. SMITH of Texas) introduced the following bill; which was referred to the Committee on

A BILL

To provide for investment in innovation through scientific research and development, to improve the competitiveness of the United States, 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; TABLE OF CONTENTS.**

4 (a) SHORT TITLE.—This Act may be cited as the
5 “Frontiers in Innovation, Research, Science, and Tech-
6 nology Act of 2014” or the “FIRST Act of 2014”.

- 1 (b) TABLE OF CONTENTS.—The table of contents for
2 this Act is as follows:

Sec. 1. Short title; table of contents.

Sec. 2. Definitions.

TITLE I—NATIONAL SCIENCE FOUNDATION

Sec. 101. Authorization of appropriations.

Sec. 102. Findings.

Sec. 103. Policy objectives.

Sec. 104. Definitions.

Sec. 105. Accountability and transparency.

Sec. 106. Greater accountability in Federal funding for research.

Sec. 107. Obligation of major research equipment and facilities construction funds.

Sec. 108. Graduate student support.

Sec. 109. Permissible support.

Sec. 110. Expanding STEM opportunities.

Sec. 111. Prohibition.

Sec. 112. Review of education programs.

Sec. 113. Recompetition of awards.

Sec. 114. Sense of the Congress regarding industry investment in STEM education.

Sec. 115. Misrepresentation of research results.

Sec. 116. Citations supporting research grant applications.

Sec. 117. Research grant conditions.

Sec. 118. Computing resources study.

Sec. 119. Scientific breakthrough prizes.

Sec. 120. Rotating personnel.

Sec. 121. Report of the NSB Task Force on Administrative Burden.

Sec. 122. Sense of Congress regarding Innovation Corps.

Sec. 123. United States-Israeli cooperation.

Sec. 124. Sense of Congress regarding agricultural and drug interdisciplinary research.

Sec. 125. Brain Research through Advancing Innovative Neurotechnologies Initiative.

TITLE II—SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS

Sec. 201. Findings; sense of Congress.

Sec. 202. STEM Education Advisory Panel.

Sec. 203. Committee on STEM education.

Sec. 204. STEM Education Coordinating Office.

TITLE III—OFFICE OF SCIENCE AND TECHNOLOGY POLICY

Sec. 301. Authorization of appropriations.

Sec. 302. Regulatory efficiency.

Sec. 303. Public access to research articles and data.

Sec. 304. Strategic plan for advanced manufacturing research and development.

Sec. 305. Coordination of international science and technology partnerships.

Sec. 306. Alternative research funding models.

Sec. 307. Amendments to prize competitions.

TITLE IV—INNOVATION AND TECHNOLOGY TRANSFER

Subtitle A—NIST Reauthorization

- Sec. 401. Authorization of appropriations.
- Sec. 402. Standards and conformity assessment and other transaction authority.
- Sec. 403. Visiting Committee on Advanced Technology.
- Sec. 404. Police and security authority.
- Sec. 405. International activities.
- Sec. 406. Education and outreach.
- Sec. 407. Programmatic planning report.
- Sec. 408. Assessments by the National Research Council.
- Sec. 409. Hollings Manufacturing Extension Partnership.
- Sec. 410. Elimination of obsolete reports.
- Sec. 411. Modifications to grants and cooperative agreements.

Subtitle B—Innovative Approaches to Technology Transfer

- Sec. 421. Innovative approaches to technology transfer.

TITLE V—NETWORKING AND INFORMATION TECHNOLOGY
RESEARCH AND DEVELOPMENT

- Sec. 501. Short title.
- Sec. 502. Program planning and coordination.
- Sec. 503. Large-scale research in areas of national importance.
- Sec. 504. Cyber-physical systems.
- Sec. 505. Cloud computing services for research.
- Sec. 506. National Coordination Office.
- Sec. 507. Improving networking and information technology education.
- Sec. 508. Conforming and technical amendments.

1 SEC. 2. DEFINITIONS.

2 In this Act—

3 (1) the term “STEM” means the subjects of
4 science, technology, engineering, and mathematics;
5 and

6 (2) the term “STEM education” means edu-
7 cation in the subjects of STEM, including other aca-
8 demic subjects that build on these disciplines such
9 as computer science and other academic subjects
10 that a State identifies as important to the workforce
11 of the State.

1 implemented effectively and that the objectives of the stra-
2 tegic plan are met.

3 **TITLE III—OFFICE OF SCIENCE**
4 **AND TECHNOLOGY POLICY**

5 **SEC. 301. AUTHORIZATION OF APPROPRIATIONS.**

6 There are authorized to be appropriated for the Of-
7 fice of Science and Technology Policy—

8 (1) \$5,555,000 for fiscal year 2014; and

9 (2) \$5,555,000 for fiscal year 2015.

10 **SEC. 302. REGULATORY EFFICIENCY.**

11 (a) SENSE OF CONGRESS.—It is the sense of Con-
12 gress that—

13 (1) high and increasing administrative burdens
14 and costs in Federal research administration, par-
15 ticularly in the higher education sector where most
16 federally sponsored research is performed, are erod-
17 ing funds available to carry out basic scientific re-
18 search;

19 (2) progress has been made over the last decade
20 in streamlining the pre-award grant application
21 process through Grants.gov, the Federal Govern-
22 ment's website portal;

23 (3) post-award administrative costs have grown
24 as Federal research agencies have continued to im-

1 pose agency-unique compliance and reporting re-
2 quirements on researchers and research institutions;

3 (4) facilities and administration costs at re-
4 search universities can exceed 50 percent of the total
5 value of Federal research grants, and it is estimated
6 that nearly 30 percent of the funds invested annu-
7 ally in federally funded research is consumed by pa-
8 perwork and other administrative processes required
9 by Federal agencies;

10 (5) the Office of Management and Budget has
11 recently released an omnibus grant administration
12 regulation that allows agency-unique approaches and
13 fails to provide necessary guidance for agencies to
14 simplify, standardize, or consolidate common report-
15 ing and compliance requirements; and

16 (6) it is a matter of critical importance to
17 American competitiveness that administrative costs
18 of federally funded research be streamlined so that
19 a higher proportion of taxpayer dollars flow into di-
20 rect research activities.

21 (b) IN GENERAL.—The Director of the Office of
22 Science and Technology Policy shall establish a working
23 group under the authority of the National Science and
24 Technology Council, to include the Office of Management
25 and Budget. The working group shall be responsible for

1 reviewing Federal regulations affecting research and re-
2 search universities and making recommendations on how
3 to—

4 (1) harmonize, streamline, and eliminate dupli-
5 cative Federal regulations and reporting require-
6 ments; and

7 (2) minimize the regulatory burden on United
8 States institutions of higher education performing
9 federally funded research while maintaining account-
10 ability for Federal tax dollars.

11 (b) REPORT.—Not later than 1 year after the date
12 of enactment of this Act, and annually thereafter for 3
13 years, the Director shall report to the Committee on
14 Science, Space, and Technology of the House of Rep-
15 resentatives and the Committee on Commerce, Science,
16 and Transportation of the Senate on what steps have been
17 taken to carry out the recommendations of the working
18 group established under subsection (b).

19 **SEC. 303. PUBLIC ACCESS TO RESEARCH ARTICLES AND**
20 **DATA.**

21 (a) PUBLIC ACCESS POLICIES AND PROCEDURES.—

22 (1) PLAN.—Not later than 18 months after the
23 date of enactment of this Act, the National Science
24 and Technology Council shall deliver a plan to Con-
25 gress containing policies, procedures, and standards

1 for the Federal science agencies to enable archiving
2 and retrieving covered material in digital form for
3 public availability in perpetuity. The plan shall—

4 (A) provide a data-driven justification for
5 the plan, including the embargo periods set
6 under subsections (c)(2)(A) and (e);

7 (B) be developed in a transparent and
8 open manner;

9 (C) indicate what procedures were followed
10 to ensure that this process of developing the
11 plan allowed for the full consideration of all
12 stakeholder concerns; and

13 (D) draw on information developed under
14 section 103 of the America COMPETES Reau-
15 thorization Act of 2010 (42 U.S.C. 6623).

16 (2) REQUIREMENTS.—Such policies, proce-
17 dures, and standards shall—

18 (A) use existing information technology in-
19 frastructure to the extent practicable, including
20 infrastructure of the National Center for Bio-
21 technology Information, the National Center for
22 Atmospheric Research, and the private sector
23 that facilitate public access to covered material;

24 (B) minimize the cost of storing, archiving,
25 and retrieving articles and data; and

1 (C) minimize the burden of providing arti-
2 cles and data archiving, and of retrieving arti-
3 cles and data.

4 (3) STAKEHOLDER INPUT.—In developing poli-
5 cies, procedures, and standards under paragraph
6 (1), the National Science and Technology Council
7 shall use a transparent process for soliciting views
8 from stakeholders, including federally funded re-
9 searchers, institutions of higher education, libraries,
10 publishers, users of federally funded research re-
11 sults, and civil science society groups.

12 (b) GRANT RECIPIENT REQUIREMENTS.—A recipient
13 of a research grant made by a Federal science agency shall
14 make, or enable others on their behalf to make, covered
15 material associated with such grant available consistent
16 with the policies, procedures, and standards established
17 under subsection (a).

18 (c) FEDERAL SCIENCE AGENCY REQUIREMENTS.—
19 In implementing the policies, procedures, and standards
20 established pursuant to subsection (a), each Federal
21 science agency shall provide for—

22 (1) submission of, or linking to, an electronic
23 version of covered material by or on behalf of recipi-
24 ents of research grants made by the agency;

1 (2) free online public access to such covered
2 material—

3 (A) in the case of a research article, con-
4 sistent with appropriate embargo periods but
5 not later than 24 months after publication of
6 the research article in a peer-reviewed publica-
7 tion; and

8 (B) in the case of data used to support the
9 findings and conclusions of such article, not
10 later than 60 days after the article is published
11 in a peer-reviewed publication;

12 (3) implementation in a manner and format
13 that enables and ensures full-text search, productive
14 use, and long-term preservation;

15 (4) production of an online bibliography of all
16 research papers that are publicly accessible in its re-
17 pository, with each entry linking to the cor-
18 responding free online full text and supporting data;
19 and

20 (5) access to all data that is used directly or in-
21 directly by the agency to support the promulgation
22 of a Federal regulation.

23 (d) REVIEW.—At least once every 5 years, the Na-
24 tional Science and Technology Council shall review the
25 policies, procedures, and standards established under sub-

1 section (a) and revise such policies, procedures, and stand-
2 ards as appropriate.

3 (e) EXTENSION.—Each Federal science agency may
4 extend the time period specified in subsection (c)(2)(A)
5 by 6 to 12 months, in consultation with the stakeholders
6 described in subsection (a)(3), if the agency head, or des-
7 ignee, determines that the scientific field and stakeholders
8 described in subsection (a)(3) will be uniquely harmed
9 without such extension.

10 (f) PATENT OR COPYRIGHT LAW.—Except as pro-
11 vided in this section, nothing in this section shall be con-
12 strued to affect any right under the provisions of title 17
13 or title 35, United States Code.

14 (g) DEFINITIONS.—For purposes of this section:

15 (1) COVERED MATERIAL.—The term “covered
16 material” means—

17 (A) a manuscript of an article accepted for
18 publication in a peer-reviewed publication that
19 results from research funded by a grant from a
20 Federal science agency; and

21 (B) data that was used to support the
22 findings and conclusions of such article, except
23 for data that is protected from disclosure under
24 section 552 of title 5, United States Code.

1 (2) DATA.—The term “data” includes raw
2 data, computer code, and algorithms, but does not
3 include—

4 (A) commercially available software used
5 to analyze the data or code;

6 (B) preliminary work and analyses;

7 (C) drafts of scientific papers not accepted
8 or intended for publication; or

9 (D) plans for future research.

10 (3) FEDERAL SCIENCE AGENCY.—The term
11 “Federal science agency” means—

12 (A) the National Aeronautics and Space
13 Administration;

14 (B) the National Science Foundation;

15 (C) the National Institute of Standards
16 and Technology; and

17 (D) the National Weather Service.

18 (4) PEER-REVIEWED PUBLICATION.—The term
19 “peer-reviewed publication” means a publication for
20 which articles are assigned to at least 1 external re-
21 viewer to assess the validity of the articles’ scientific
22 findings and conclusions.