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.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

(a) SHORT TITLE.—This Act may be cited as the “Frontiers in Innovation, Research, Science, and Technology Act of 2014” or the “FIRST Act of 2014”.

March 10, 2014 (11:11 a.m.)
(b) TABLE OF CONTENTS.—The table of contents for 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 science, technology, engineering, and mathematics;
4 and
5
6 (2) the term “STEM education” means education in the subjects of STEM, including other academic subjects that build on these disciplines such as computer science and other academic subjects that a State identifies as important to the workforce of the State.
implemented effectively and that the objectives of the strategic plan are met.

TITLE III—OFFICE OF SCIENCE AND TECHNOLOGY POLICY

SEC. 301. AUTHORIZATION OF APPROPRIATIONS.

There are authorized to be appropriated for the Office of Science and Technology Policy—

(1) $5,555,000 for fiscal year 2014; and
(2) $5,555,000 for fiscal year 2015.

SEC. 302. REGULATORY EFFICIENCY.

(a) SENSE OF CONGRESS.—It is the sense of Congress that—

(1) high and increasing administrative burdens and costs in Federal research administration, particularly in the higher education sector where most federally sponsored research is performed, are eroding funds available to carry out basic scientific research;
(2) progress has been made over the last decade in streamlining the pre-award grant application process through Grants.gov, the Federal Government’s website portal;
(3) post-award administrative costs have grown as Federal research agencies have continued to im-
pose agency-unique compliance and reporting requirements on researchers and research institutions;

(4) facilities and administration costs at research universities can exceed 50 percent of the total value of Federal research grants, and it is estimated that nearly 30 percent of the funds invested annually in federally funded research is consumed by paperwork and other administrative processes required by Federal agencies;

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

(6) it is a matter of critical importance to American competitiveness that administrative costs of federally funded research be streamlined so that a higher proportion of taxpayer dollars flow into direct research activities.

(b) IN GENERAL.—The Director of the Office of Science and Technology Policy shall establish a working group under the authority of the National Science and Technology Council, to include the Office of Management and Budget. The working group shall be responsible for
reviewing Federal regulations affecting research and re-search universities and making recommendations on how to—

(1) harmonize, streamline, and eliminate duplicative Federal regulations and reporting requirements; and

(2) minimize the regulatory burden on United States institutions of higher education performing federally funded research while maintaining accountability for Federal tax dollars.

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

SEC. 303. PUBLIC ACCESS TO RESEARCH ARTICLES AND DATA.

(a) PUBLIC ACCESS POLICIES AND PROCEDURES.—

(1) PLAN.—Not later than 18 months after the date of enactment of this Act, the National Science and Technology Council shall deliver a plan to Congress containing policies, procedures, and standards
for the Federal science agencies to enable archiving and retrieving covered material in digital form for public availability in perpetuity. The plan shall—

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

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

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

(D) draw on information developed under section 103 of the America COMPETES Reauthoriza- tion Act of 2010 (42 U.S.C. 6623).

(2) REQUIREMENTS.—Such policies, procedures, and standards shall—

(A) use existing information technology infrastructure to the extent practicable, including infrastructure of the National Center for Biotechnology Information, the National Center for Atmospheric Research, and the private sector that facilitate public access to covered material;

(B) minimize the cost of storing, archiving, and retrieving articles and data; and
(C) minimize the burden of providing articles and data archiving, and of retrieving articles and data.

(3) STAKEHOLDER INPUT.—In developing policies, procedures, and standards under paragraph (1), the National Science and Technology Council shall use a transparent process for soliciting views from stakeholders, including federally funded researchers, institutions of higher education, libraries, publishers, users of federally funded research results, and civil science society groups.

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

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

(1) submission of, or linking to, an electronic version of covered material by or on behalf of recipients of research grants made by the agency;
(2) free online public access to such covered material—

(A) in the case of a research article, consistent with appropriate embargo periods but not later than 24 months after publication of the research article in a peer-reviewed publication; and

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

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

(4) production of an online bibliography of all research papers that are publicly accessible in its repository, with each entry linking to the corresponding free online full text and supporting data; and

(5) access to all data that is used directly or indirectly by the agency to support the promulgation of a Federal regulation.

(d) REVIEW.—At least once every 5 years, the National Science and Technology Council shall review the policies, procedures, and standards established under sub-
section (a) and revise such policies, procedures, and standards as appropriate.

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

(f) Patent or Copyright Law.—Except as provided in this section, nothing in this section shall be construed to affect any right under the provisions of title 17 or title 35, United States Code.

(g) Definitions.—For purposes of this section:

1. Covered Material.—The term “covered material” means—

   A. a manuscript of an article accepted for publication in a peer-reviewed publication that results from research funded by a grant from a Federal science agency; and

   B. data that was used to support the findings and conclusions of such article, except for data that is protected from disclosure under section 552 of title 5, United States Code.
(2) DATA.—The term "data" includes raw data, computer code, and algorithms, but does not include—

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

(B) preliminary work and analyses;

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

(D) plans for future research.

(3) FEDERAL SCIENCE AGENCY.—The term "Federal science agency" means—

(A) the National Aeronautics and Space Administration;

(B) the National Science Foundation;

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

(D) the National Weather Service.

(4) PEER-REVIEWED PUBLICATION.—The term "peer-reviewed publication" means a publication for which articles are assigned to at least 1 external reviewer to assess the validity of the articles’ scientific findings and conclusions.