

Suspend the Rules and Pass the Bill, H.R. 6229, With an Amendment

(The amendment strikes all after the enacting clause and inserts a new text)

115TH CONGRESS
2^D SESSION

H. R. 6229

To authorize the programs of the National Institute of Standards and Technology, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

JUNE 26, 2018

Mrs. COMSTOCK (for herself, Mr. LIPINSKI, Mr. SMITH of Texas, Ms. EDDIE BERNICE JOHNSON of Texas, Mr. MARSHALL, Mr. LUCAS, Mr. KNIGHT, Mrs. LESKO, Mr. ROHRABACHER, Mr. WEBER of Texas, and Mr. BIGGS) introduced the following bill; which was referred to the Committee on Science, Space, and Technology

A BILL

To authorize the programs of the National Institute of Standards and Technology, 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 “National Institute of
5 Standards and Technology Reauthorization Act of 2018”.

6 **SEC. 2. AUTHORIZATION OF APPROPRIATIONS.**

7 (a) FISCAL YEAR 2018.—

1 (1) IN GENERAL.—There are authorized to be
2 appropriated to the Secretary of Commerce
3 \$1,198,500,000 for the National Institute of Stand-
4 ards and Technology for fiscal year 2018.

5 (2) SPECIFIC ALLOCATIONS.—Of the amount
6 authorized by paragraph (1)—

7 (A) \$724,500,000 shall be for scientific
8 and technical research and services laboratory
9 activities;

10 (B) \$319,000,000 shall be for the con-
11 struction and maintenance of facilities; and

12 (C) \$155,000,000 shall be for industrial
13 technology services activities.

14 (b) FISCAL YEAR 2019.—

15 (1) IN GENERAL.—There are authorized to be
16 appropriated to the Secretary of Commerce
17 \$1,125,000,000 for the National Institute of Stand-
18 ards and Technology for fiscal year 2019.

19 (2) SPECIFIC ALLOCATIONS.—Of the amount
20 authorized by paragraph (1)—

21 (A) \$850,000,000 shall be for scientific
22 and technical research and services laboratory
23 activities, of which—

1 (i) \$109,900,000 shall be for the ad-
2 vanced communications, networks, and sci-
3 entific data systems mission area;

4 (ii) \$103,200,000 shall be for the cy-
5 bersecurity and privacy mission area;

6 (iii) \$234,000,000 shall be for the
7 fundamental measurement, quantum
8 science and measurement dissemination
9 mission area; and

10 (iv) \$89,800,000 shall be for the
11 physical infrastructure and resilience mis-
12 sion area;

13 (B) \$120,000,000 shall be for the con-
14 struction and maintenance of facilities; and

15 (C) \$155,000,000 shall be for industrial
16 technology services activities.

17 **SEC. 3. QUANTUM INFORMATION SCIENCE.**

18 (a) RESEARCH ACTIVITIES AND ENGAGEMENT.—The
19 Secretary, acting through the Director, shall—

20 (1) continue to support and expand basic quan-
21 tum information science and technology research
22 and development of measurement and standards in-
23 frastructure necessary to advance commercial devel-
24 opment of quantum applications;

1 (2) use the programs of the Institute, in col-
2 laboration with other relevant Federal agencies, as
3 appropriate, to train scientists in quantum informa-
4 tion science and technology to increase participation
5 in the quantum fields;

6 (3) establish or expand collaborative ventures or
7 consortia with other public or private sector entities,
8 including other Federal agencies engaged in quan-
9 tum information science research and development,
10 institutions of higher education, National Labora-
11 tories, and industry, for the purpose of advancing
12 the field of quantum information science and engi-
13 neering; and

14 (4) have the authority to enter into and per-
15 form such contracts on such terms as the Secretary,
16 acting through the Director, considers appropriate,
17 including cooperative research and development ar-
18 rangements and grants and cooperative agreements
19 or other transactions, as may be necessary in the
20 conduct of the work of the Institute with respect to
21 quantum information science and technology.

22 (b) QUANTUM WORKSHOP.—

23 (1) IN GENERAL.—Not later than 1 year after
24 the date of the enactment of this Act, the Secretary,
25 acting through the Director, shall convene a work-

1 shop of stakeholders to discuss the future measure-
2 ment, standards, cybersecurity, and other issues that
3 relate to development of quantum information
4 science in the United States. The goals of the work-
5 shop shall be—

6 (A) assessment of the Institute’s quantum
7 information science and technology research
8 work, including areas that may need additional
9 Institute investment in order to support devel-
10 opment of quantum information science and
11 technology in the United States; and

12 (B) consideration of recommendations and
13 priority issues for the Institute’s participation
14 in the proposed National Quantum Initiative
15 Program.

16 (2) REPORT TO CONGRESS.—Not later than 2
17 years after the date of enactment of this Act, the
18 Secretary, acting through the Director, shall trans-
19 mit to the Committee on Science, Space, and Tech-
20 nology and the Committee on Appropriations of the
21 House of Representatives and the Committee on
22 Commerce, Science, and Transportation and the
23 Committee on Appropriations of the Senate a sum-
24 mary report containing the findings of the workshop
25 convened under this subsection.

1 (c) FUNDING.—The Secretary of Commerce shall de-
2 vote \$80,000,000 to carry out this section for fiscal year
3 2019, subject to the availability of appropriations, to come
4 from amounts made available pursuant to section
5 2(b)(2)(A)(iii) of this Act. This section shall be carried
6 out using funds otherwise appropriated by law after the
7 date of enactment of this Act.

8 **SEC. 4. CYBERSECURITY RESEARCH.**

9 (a) RESEARCH.—The Secretary, acting through the
10 Director, shall expand the fundamental and applied re-
11 search carried out by the Institute to address key ques-
12 tions relating the measurement of privacy, security, and
13 vulnerability of software tools and communications net-
14 works, including through—

15 (1) the development of research and engineering
16 capabilities to provide practical solutions, including
17 measurement techniques and engineering toolkits, to
18 solve cybersecurity challenges such as human fac-
19 tors, identity management, network security, pri-
20 vacy, and software;

21 (2) investment in tools to help private and pub-
22 lic sector organizations measure their cybersecurity,
23 manage their risks and ensure workforce prepared-
24 ness for new cybersecurity challenges; and

1 (3) investment in programs to prepare the
2 United States with strong cybersecurity and
3 encryption technologies to apply to emerging tech-
4 nologies such as artificial intelligence, the internet of
5 things, and quantum computing.

6 (b) **AUTHORITY.**—The Secretary, acting through the
7 Director, shall have the authority to enter into and per-
8 form such contracts on such terms as the Secretary con-
9 siders to be appropriate, including cooperative research
10 and development arrangements, grants, and cooperative
11 agreements or other transactions, as may be necessary in
12 the conduct of the work of the Institute with respect to
13 cybersecurity.

14 **SEC. 5. COMPOSITES RESEARCH.**

15 (a) **RESEARCH.**—The Secretary, acting through the
16 Director, shall implement the recommendations contained
17 in the December 2017 report entitled “Road Mapping
18 Workshop Report on Overcoming Barriers to Adoption of
19 Composites in Sustainable Infrastructure”, as appro-
20 priate, to help facilitate the adoption of composite tech-
21 nology in infrastructure in the United States. In imple-
22 menting such recommendations, the Secretary, acting
23 through the Director shall, with respect to the use of com-
24 posite technology in infrastructure—

1 (1) not later than 6 months after the date of
2 enactment of this Act, establish a design data clear-
3 inghouse to identify, gather, validate, and dissemi-
4 nate existing design criteria, tools, guidelines, and
5 standards; and

6 (2) develop methods and resources required for
7 testing an evaluation of safe and appropriate uses of
8 composite materials for infrastructure, including—

9 (A) conditioning protocols, procedures and
10 models;

11 (B) screening and acceptance tools; and

12 (C) minimum allowable design data sets
13 that can be converted into design tools.

14 (b) STANDARDS COORDINATION.—The Secretary,
15 acting through the Director, shall assure that the appro-
16 priate Institute staff consult regularly with standards de-
17 velopers, members of the composites industry, institutions
18 of higher education, and other stakeholders in order to fa-
19 cilitate the adoption of standards for use of composite ma-
20 terials in infrastructure that are based on the research and
21 testing results and other information developed by the In-
22 stitute.

23 (c) FUNDING.—The Secretary of Commerce shall de-
24 vote \$11,000,000 to carry out this section for fiscal year
25 2019, subject to the availability of appropriations, to come

1 from amounts made available pursuant to section
2 2(b)(2)(A)(iv) of this Act. This section shall be carried out
3 using funds otherwise appropriated by law after the date
4 of enactment of this Act.

5 **SEC. 6. ARTIFICIAL INTELLIGENCE AND DATA SCIENCE.**

6 The Secretary, acting through the Director, shall con-
7 tinue to support the development of artificial intelligence
8 and data science, including through—

9 (1) the expansion of the Institute’s capabilities,
10 including scientific staff and research infrastructure;

11 (2) the implementation of rigorous scientific
12 testing to support the development of trustworthy
13 and safe artificial intelligence and data systems;

14 (3) the development of machine learning and
15 other artificial intelligence applications to support
16 measurement science research programs and take
17 steps to modernize the Institute’s research infra-
18 structure; and

19 (4) the development and publication of new cy-
20 bersecurity tools, encryption methods, and best prac-
21 tices for artificial intelligence and data science.

22 **SEC. 7. INTERNET OF THINGS.**

23 The Secretary, acting through the Director, shall con-
24 tinue to conduct research with respect to and support the
25 expanded connectivity, interoperability, and security of

1 interconnected systems and other aspects of the internet
2 of things, including through—

3 (1) the development of new tools and meth-
4 odologies for cybersecurity of the internet of things;

5 (2) the development of technologies to address
6 network congestion and device interference, such as
7 the development of testing tools for next generation
8 wireless communications, internet of things proto-
9 cols, coexistence of wireless communications systems,
10 and spectrum sharing;

11 (3) convening experts in the public and private
12 sectors to develop recommendations for accelerating
13 the adoption of sound interoperability standards,
14 guidelines, and best practices for the internet of
15 things; and

16 (4) the development and publication of new cy-
17 bersecurity tools, encryption methods, and best prac-
18 tices for internet of things security.

19 **SEC. 8. HIRING AND MANAGEMENT.**

20 (a) **DIRECT HIRE AUTHORITY.**—The Secretary, act-
21 ing through the Director, may—

22 (1) appoint, without regard to the provisions of
23 subchapter I of chapter 33 of title 5, United States
24 Code (other than sections 3303, 3328, and 3330e of
25 such chapter), qualified candidates to scientific, en-

1 gineering, and professional positions for carrying out
2 research and development functions which require
3 the services of specially qualified personnel relating
4 to cybersecurity and quantum information science
5 and technology and such other areas of national re-
6 search priorities as the Secretary, acting through the
7 Director, may determine; and

8 (2) fix the rate of basic pay of any individual
9 appointed under paragraph (1), at a rate not in ex-
10 cess of the basic rate of pay of the Vice President
11 under section 104 of title 3, United States Code,
12 without regard to title 5, United States Code.

13 (b) **LIMITATION.**—The Director may appoint not
14 more than 10 individuals under this section.

15 (c) **SUNSET.**—The authority under this section shall
16 expire on the date that is 5 years after the date of enact-
17 ment of this Act.

18 **SEC. 9. DEFINITIONS.**

19 In this Act:

20 (1) The term “Director” means the Director of
21 the National Institute of Standards and Technology.

22 (2) The term “Framework” means the Frame-
23 work for Improving Critical Infrastructure Cyberse-
24 curity developed by the National Institute of Stand-
25 ards and Technology and referred to in Executive

1 Order 13800 issued on May 11, 2017 (82 Fed. Reg.
2 22391 et seq.).

3 (3) The term “Institute” means the National
4 Institute of Standards and Technology.

5 (4) The term “institution of higher education”
6 has the meaning given such term in section 101 of
7 the Higher Education Act of 1965 (20 U.S.C.
8 1001).

9 (5) The term “Secretary” means the Secretary
10 of Commerce.