

117TH CONGRESS  
1ST SESSION

# H. R. 4609

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

---

## IN THE HOUSE OF REPRESENTATIVES

JULY 21, 2021

Ms. STEVENS (for herself, Mr. WALTZ, Ms. JOHNSON of Texas, and Mr. LUCAS) introduced the following bill; which was referred to the Committee on Science, Space, and Technology

---

## A BILL

To reauthorize 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 (a) **SHORT TITLE.**—This Act may be cited as the  
5 “National Institute of Standards and Technology for the  
6 Future Act of 2021”.

7 (b) **TABLE OF CONTENTS.**—The table of contents for  
8 this Act is as follows:

Sec. 1. Short title.

Sec. 2. Definitions.

Sec. 101. Authorization of appropriations.

#### TITLE II—MEASUREMENT RESEARCH

Sec. 201. Engineering biology and biometrology.  
 Sec. 202. Greenhouse gas measurement research.  
 Sec. 203. NIST authority for cybersecurity and privacy activities.  
 Sec. 204. Software security and authentication.  
 Sec. 205. Digital identity management research.  
 Sec. 206. Biometrics research and testing.  
 Sec. 207. Federal biometric performance standards.  
 Sec. 208. Protecting research from cyber theft.  
 Sec. 209. Dissemination of resources for research institutions.  
 Sec. 210. Advanced communications research.  
 Sec. 211. Neutron scattering.  
 Sec. 212. Quantum information science.  
 Sec. 213. Artificial intelligence.

#### TITLE III—GENERAL ACTIVITIES

Sec. 301. NIST facilities and construction.  
 Sec. 302. Educational outreach and support for underrepresented communities.  
 Sec. 303. Other transactions authority.  
 Sec. 304. International standards development.  
 Sec. 305. Update to manufacturing extension partnership.  
 Sec. 306. Standard technical update.

### 1 **SEC. 2. DEFINITIONS.**

2 In this Act:

3 (1) **DIRECTOR.**—The term “Director” means  
 4 the Director of the National Institute of Standards  
 5 and Technology.

6 (2) **FRAMEWORK.**—The term “Framework”  
 7 means the Framework for Improving Critical Infra-  
 8 structure Cybersecurity developed by the National  
 9 Institute of Standards and Technology and referred  
 10 to in Executive Order 13800 issued on May 11,  
 11 2017 (82 Fed. Reg. 22391 et seq.).

12 (3) **HISTORICALLY BLACK COLLEGES AND UNI-**  
 13 **VERSITIES.**—The term “historically Black colleges  
 14 and universities” has the same meaning given to the

1 term “part B institutions” in section 322 of the  
2 Higher Education Act of 1965 (20 U.S.C. 1061).

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

5 (5) INSTITUTION OF HIGHER EDUCATION.—The  
6 term “institution of higher education” has the  
7 meaning given such term in section 101 of the High-  
8 er Education Act of 1965 (20 U.S.C. 1001).

9 (6) INTERNATIONAL STANDARDS ORGANIZA-  
10 TION.—The term “International Standards Organi-  
11 zation” has the meaning given such term in section  
12 451 of the Trade Agreements Act of 1979 (19  
13 U.S.C. 2571).

14 (7) MINORITY SERVING INSTITUTION.—The  
15 term “minority-serving institution’” means a His-  
16 panic-serving institution, an Alaska Native-serving  
17 institution, a Native Hawaiian-serving institutions, a  
18 Predominantly Black Institution, an Asian American  
19 and Native American Pacific Islander-serving insti-  
20 tution, or a Native American-serving nontribal insti-  
21 tution as described in section 371 of the Higher  
22 Education Act of 1965 (20 U.S.C. 1067q(a)).

23 (8) SECRETARY.—The term “Secretary” means  
24 the Secretary of Commerce.

1           (9) TECHNICAL STANDARDS.—The term “tech-  
2           nical standard” has the meaning given such term in  
3           section 12(d)(5) of the National Technology Trans-  
4           fer and Advancement Act of 1995.

## 5           **TITLE I—APPROPRIATIONS**

### 6           **SEC. 101. AUTHORIZATION OF APPROPRIATIONS.**

7           (a) FISCAL YEAR 2022.—

8           (1) IN GENERAL.—There are authorized to be  
9           appropriated to the Secretary of Commerce  
10          \$1,267,070,000 for the National Institute of Stand-  
11          ards and Technology for fiscal year 2022.

12          (2) SPECIFIC ALLOCATIONS.—Of the amount  
13          authorized by paragraph (1)—

14               (A) \$915,570,000 shall be for scientific  
15               and technical research and services laboratory  
16               activities, of which \$9,000,000 may be trans-  
17               ferred to the Working Capital Fund;

18               (B) \$140,000,000 shall be for the con-  
19               struction and maintenance of facilities, of which  
20               \$80,000,000 shall be for Safety, Capacity,  
21               Maintenance, and Major Repairs; and

22               (C) \$211,500,000 shall be for industrial  
23               technology services activities, of which  
24               \$155,000,000 shall be for the Manufacturing  
25               Extension Partnership program under sections

1           25 and 26 of the National Institute of Stand-  
2           ards and Technology Act (15 U.S.C. 278k and  
3           278l) and \$56,500,000 shall be for the Network  
4           for Manufacturing Innovation Program under  
5           section 34 of the National Institute of Stand-  
6           ards and Technology Act (15 U.S.C. 278s).

7           (b) FISCAL YEAR 2023.—

8           (1) IN GENERAL.—There are authorized to be  
9           appropriated to the Secretary of Commerce  
10          \$1,335,200,000 for the National Institute of Stand-  
11          ards and Technology for fiscal year 2023.

12          (2) SPECIFIC ALLOCATIONS.—Of the amount  
13          authorized by paragraph (1)—

14               (A) \$979,100,000 shall be for scientific  
15               and technical research and services laboratory  
16               activities, of which \$10,000,000 may be trans-  
17               ferred to the Working Capital Fund;

18               (B) \$140,000,000 shall be for the con-  
19               struction and maintenance of facilities, of which  
20               \$80,000,000 shall be for Safety, Capacity,  
21               Maintenance, and Major Repairs, including  
22               \$20,000,000 for IT infrastructure; and

23               (C) \$216,200,000 shall be for industrial  
24               technology services activities, of which  
25               \$159,700,000 shall be for the Manufacturing

1           Extension Partnership program under sections  
2           25 and 26 of the National Institute of Stand-  
3           ards and Technology Act (15 U.S.C. 278k and  
4           278l) and \$56,500,000 shall be for the Network  
5           for Manufacturing Innovation Program under  
6           section 34 of the National Institute of Stand-  
7           ards and Technology Act (15 U.S.C. 278s).

8           (c) FISCAL YEAR 2024.—

9           (1) IN GENERAL.—There are authorized to be  
10          appropriated to the Secretary of Commerce  
11          \$1,408,520,000 for the National Institute of Stand-  
12          ards and Technology for fiscal year 2024.

13          (2) SPECIFIC ALLOCATIONS.—Of the amount  
14          authorized by paragraph (1)—

15                (A) \$1,047,600,000 shall be for scientific  
16                and technical research and services laboratory  
17                activities, of which \$12,000,000 may be trans-  
18                ferred to the Working Capital Fund;

19                (B) \$140,000,000 shall be for the con-  
20                struction and maintenance of facilities, of which  
21                \$80,000,000 shall be for Safety, Capacity,  
22                Maintenance, and Major Repairs, including  
23                \$20,000,000 for IT infrastructure; and

24                (C) \$220,900,000 shall be for industrial  
25                technology services activities, of which

1           \$164,400,000 shall be for the Manufacturing  
2           Extension Partnership program under sections  
3           25 and 26 of the National Institute of Stand-  
4           ards and Technology Act (15 U.S.C. 278k and  
5           278l) and \$56,500,000 shall be for the Network  
6           for Manufacturing Innovation Program under  
7           section 34 of the National Institute of Stand-  
8           ards and Technology Act (15 U.S.C. 278s).

9           (d) FISCAL YEAR 2025.—

10           (1) IN GENERAL.—There are authorized to be  
11           appropriated to the Secretary of Commerce  
12           \$1,486,800,000 for the National Institute of Stand-  
13           ards and Technology for fiscal year 2025.

14           (2) SPECIFIC ALLOCATIONS.—Of the amount  
15           authorized by paragraph (1)—

16           (A) \$1,120,900,000 shall be for scientific  
17           and technical research and services laboratory  
18           activities, of which \$15,000,000 may be trans-  
19           ferred to the Working Capital Fund;

20           (B) \$140,000,000 shall be for the con-  
21           struction and maintenance of facilities, of which  
22           \$80,000,000 shall be for Safety, Capacity,  
23           Maintenance, and Major Repairs, including  
24           \$20,000,000 for IT infrastructure; and

1           (C) \$225,900,000 shall be for industrial  
2           technology services activities, of which  
3           \$169,400,000 shall be for the Manufacturing  
4           Extension Partnership program under sections  
5           25 and 26 of the National Institute of Stand-  
6           ards and Technology Act (15 U.S.C. 278k and  
7           278l) and \$56,500,000 shall be for the Network  
8           for Manufacturing Innovation Program under  
9           section 34 of the National Institute of Stand-  
10          ards and Technology Act (15 U.S.C. 278s).

11       (e) FISCAL YEAR 2026.—

12           (1) IN GENERAL.—There are authorized to be  
13           appropriated to the Secretary of Commerce  
14           \$1,570,340,000 for the National Institute of Stand-  
15           ards and Technology for fiscal year 2026.

16           (2) SPECIFIC ALLOCATIONS.—Of the amount  
17           authorized by paragraph (1)—

18           (A) \$1,199,400,000 shall be for scientific  
19           and technical research and services laboratory  
20           activities, of which \$18,000,000 may be trans-  
21           ferred to the Working Capital Fund;

22           (B) \$140,000,000 shall be for the con-  
23           struction and maintenance of facilities, of which  
24           \$80,000,000 shall be for Safety, Capacity,



1 Maintenance, and Major Repairs, including  
2 \$20,000,000 for IT infrastructure; and

3 (C) \$231,000,000 shall be for industrial  
4 technology services activities, of which  
5 \$174,500,000 shall be for the Manufacturing  
6 Extension Partnership program under sections  
7 25 and 26 of the National Institute of Stand-  
8 ards and Technology Act (15 U.S.C. 278k and  
9 23 278l) and \$56,500,000 shall be for the Net-  
10 work for Manufacturing Innovation Program  
11 under section 34 of the National Institute of  
12 Standards and Technology Act (15 U.S.C.  
13 278s).

14 **TITLE II—MEASUREMENT**  
15 **RESEARCH**

16 **SEC. 201. ENGINEERING BIOLOGY AND BIOMETROLOGY.**

17 (a) IN GENERAL.—The Director shall—

18 (1) support basic measurement science, tech-  
19 nology research for engineering biology, biomanufac-  
20 turing, and biometrology to advance—

21 (A) measurement technologies to support  
22 foundational understanding of the mechanisms  
23 of conversion of DNA information into cellular  
24 function, including both the natural and engi-  
25 neered production of biomolecules;

1 (B) technologies for measurement of such  
2 biomolecular components and for complex engi-  
3 neered biological systems;

4 (C) new data tools, techniques, and proc-  
5 esses to improve engineering biology, biomanu-  
6 facturing, and biometrology research; and

7 (D) all other areas deemed by the Director  
8 to be critical to the development and deploy-  
9 ment of engineering biology, biomanufacturing  
10 and biometrology;

11 (2) support activities to inform and expand the  
12 development of measurements infrastructure needed  
13 to develop technical standards to establish interoper-  
14 ability and facilitate commercial development of bio-  
15 molecular measurement technology and engineering  
16 biology applications;

17 (3) convene industry, institutions of higher edu-  
18 cation, nonprofit organizations, Federal laboratories,  
19 and other Federal agencies engaged in engineering  
20 biology research and development to develop coordi-  
21 nated technical roadmaps for authoritative measure-  
22 ment of the molecular components of the cell;

23 (4) provide access to user facilities with ad-  
24 vanced or unique equipment, services, materials, and  
25 other resources to industry, institutions of higher

1 education, nonprofit organizations, and government  
2 agencies to perform research and testing;

3 (5) establish or expand collaborative partner-  
4 ships or consortia with other Federal agencies en-  
5 gaged in engineering biology research and develop-  
6 ment, institutions of higher education, Federal lab-  
7 oratories, and industry to advance engineering biol-  
8 ogy applications; and

9 (6) support graduate and post graduate re-  
10 search and training in biometrology, biomanufac-  
11 turing, and engineering biology.

12 (b) DEFINITIONS.—For purposes of this section, the  
13 term “Engineering Biology” means the application of en-  
14 gineering design principles and practices to biological sys-  
15 tems, including molecular and cellular systems, to advance  
16 fundamental understanding of complex natural systems  
17 and to enable novel or optimize functions and capabilities.

18 (c) RULE OF CONSTRUCTION.—Nothing in this sec-  
19 tion shall be construed to alter the policies, processes, or  
20 practices of individual Federal agencies in effect on the  
21 day before the date of the enactment of this Act relating  
22 to the conduct of biomedical research and advanced devel-  
23 opment, including the solicitation and review of extra-  
24 mural research proposals.

1 (d) CONTROLS.—In carrying out activities authorized  
2 by this section, the Secretary shall ensure proper security  
3 controls are in place to protect sensitive information, as  
4 appropriate.

5 **SEC. 202. GREENHOUSE GAS MEASUREMENT RESEARCH.**

6 (a) GREENHOUSE GAS MEASUREMENT PROGRAM.—

7 (1) IN GENERAL.—The Director, in consulta-  
8 tion with the Administrator of the National Oceanic  
9 and Atmospheric Administration and the Adminis-  
10 trator of the Environmental Protection Agency, shall  
11 carry out a measurement research program to in-  
12 form the development of best practices, benchmarks,  
13 methodologies, procedures, and technical standards  
14 for the measurement of greenhouse gas emissions  
15 and to assess and improve the performance of green-  
16 house gas measurement systems.

17 (2) ACTIVITIES.—In carrying out such a pro-  
18 gram, the Director may—

19 (A) conduct research and testing to im-  
20 prove the accuracy, efficacy, and reliability of  
21 the measurement of greenhouse gas emissions;

22 (B) conduct research to create novel meas-  
23 urement technologies and techniques for the  
24 measurement of greenhouse gases;

1 (C) convene and engage with relevant Fed-  
2 eral agencies and stakeholders to establish com-  
3 mon definitions and characterizations for the  
4 measurement of greenhouse gas emissions;

5 (D) conduct outreach and coordination to  
6 share technical expertise with relevant industry  
7 and non-industry stakeholders and standards  
8 development organizations to assist such enti-  
9 ties in the development of best practices and  
10 technical standards for greenhouse gas meas-  
11 urements; and

12 (E) in coordination with the Administrator  
13 of the National Oceanic and Atmospheric Ad-  
14 ministration and the Administrator of the Envi-  
15 ronmental Protection Agency, develop such  
16 standard reference materials as the Director de-  
17 termines is necessary to further the develop-  
18 ment of such technical standards.

19 (3) TEST BEDS.—In coordination with the pri-  
20 vate sector, institutions of higher education, state  
21 and local governments, the National Oceanic and At-  
22 mospheric Administration, the Environmental Pro-  
23 tection Agency, and other Federal agencies as ap-  
24 propriate, the Director may continue to develop and  
25 manage testbeds to advance measurement research

1 and standards development for greenhouse gas emis-  
2 sions.

3 (4) GREENHOUSE GAS MEASUREMENT CENTER  
4 OF EXCELLENCE.—

5 (A) IN GENERAL.—The Director, in col-  
6 laboration with the Administrator of the Na-  
7 tional Oceanic and Atmospheric Administration,  
8 the Administrator of the Environmental Protec-  
9 tion Agency, and the heads of other Federal  
10 agencies, as appropriate, shall award to an in-  
11 stitution of higher education or an eligible non-  
12 profit organization (or a consortium thereof),  
13 on a merit-reviewed, competitive basis, funds to  
14 establish a Center of Excellence in Greenhouse  
15 Gas Measurement.

16 (B) COLLABORATIONS.—The Director  
17 shall require, as a condition of receipt of the  
18 award under this paragraph, that the activities  
19 of the Center of Excellence include collaboration  
20 among public and private organizations, includ-  
21 ing institutions of higher education, nonprofit  
22 organizations, private sector entities, and State,  
23 tribal, territorial, and local officials.

24 (C) PURPOSE.—The purpose of the Center  
25 of Excellence shall be to—

- 1 (i) advance measurement science, data  
2 analytics, and modeling to improve the ac-  
3 curacy of greenhouse gas emissions meas-  
4 urement, validation, and attribution;
- 5 (ii) test and evaluate the performance  
6 of existing capabilities for the measure-  
7 ment and validation of greenhouse gas  
8 emissions;
- 9 (iii) educate and train students in  
10 measurement science, computational  
11 science, and systems engineering research  
12 relevant to greenhouse gas measurements;
- 13 (iv) foster collaboration among aca-  
14 demic researchers, private sector stake-  
15 holders, and State, tribal, territorial, and  
16 local officials;
- 17 (v) support Institute test beds as de-  
18 scribed in subsection (a)(3); and
- 19 (vi) collaborate with other Federal  
20 agencies to conduct outreach and coordina-  
21 tion to share technical expertise with rel-  
22 evant public and private sector stake-  
23 holders, including State, tribal, territorial,  
24 and local officials, to assist such entities in  
25 measuring greenhouse gas emissions.

1 (D) REQUIREMENTS.—

2 (i) IN GENERAL.—An institution of  
3 higher education or an eligible nonprofit  
4 organization (or a consortium thereof)  
5 seeking funding under this subsection shall  
6 submit an application to the Director at  
7 such time, in such manner, and containing  
8 such information as the Director may re-  
9 quire.

10 (ii) APPLICATIONS.—Each application  
11 made under clause (i) shall include a de-  
12 scription of—

13 (I) how the Center will work with  
14 other research institutions, industry  
15 partners, and State and local officials  
16 to identify research, testing, and tech-  
17 nical standards needs relevant to  
18 greenhouse gas emissions;

19 (II) how the Center will promote  
20 active collaboration among researchers  
21 in multiple disciplines involved in the  
22 measurement of greenhouse gas emis-  
23 sions; and

24 (III) how the Center will share  
25 technical expertise with relevant pub-



1                   lic and private sector stakeholders, in-  
2                   cluding state and local officials, to as-  
3                   sist such entities in measuring green-  
4                   house gas emissions.

5                   (iii) SELECTION AND DURATION.—  
6                   Each Center established under the section  
7                   is authorized to carry out activities for a  
8                   period of 5 years, renewable for an addi-  
9                   tional 5 years at the discretion of the Di-  
10                  rector, in consultation with other Federal  
11                  agencies as appropriate.

12 **SEC. 203. NIST AUTHORITY FOR CYBERSECURITY AND PRI-**  
13 **VACY ACTIVITIES.**

14                  Section 2 of the National Institute of Standards and  
15                  Technology Act (15 U.S.C. 272 et seq.) is amended—

16                   (1) in subsection (c)—

17                           (A) in paragraph (16), by striking the pe-  
18                           riod at the end and inserting a semicolon;

19                           (B) by redesignating paragraphs (16)  
20                           through (27) as paragraphs (21) through (32),  
21                           respectively; and

22                           (C) by inserting after paragraph (15) the  
23                           following:

24                           “(16) support information security measures  
25                           for the development and lifecycle of software and the

1 software supply chain, including development of best  
2 practices, technical standards, frameworks, meth-  
3 odologies, procedures, processes, and software engi-  
4 neering toolkits and configurations;

5 “(17) support information security measures,  
6 including best practices, guidelines, and technical  
7 standards, for the design, adoption and deployment  
8 of cloud computing services;

9 “(18) support research, development, and prac-  
10 tical application to improve the usability of cyberse-  
11 curity processes and technologies;

12 “(19) facilitate and support the development of  
13 a voluntary, consensus-based set of technical stand-  
14 ards, guidelines, best practices, methodologies, pro-  
15 cedures, and processes to cost-effectively ensure ap-  
16 propriate privacy protections for personally identifi-  
17 able information in systems, technologies, and proc-  
18 esses used by both the public and private sector;

19 “(20) support privacy measures, including best  
20 practices, guidelines, technical standards, metrology,  
21 and testbeds for the design, adoption and deploy-  
22 ment of privacy enhancing technologies;” and

23 (2) in subsection (e)(1)(A)—

24 (A) in clause (viii), by striking “and” at  
25 the end;

1 (B) by redesignating clause (ix) as clause  
2 (x); and

3 (C) by inserting after clause (viii) the fol-  
4 lowing:

5 “(ix) conduct reviews of and create  
6 impact metrics for cybersecurity solutions  
7 and capabilities developed by the Institute  
8 for purposes of improvement; and”.

9 **SEC. 204. SOFTWARE SECURITY AND AUTHENTICATION.**

10 (a) **VULNERABILITIES IN OPEN SOURCE SOFT-**  
11 **WARE.**—The Director shall assess assign severity metrics  
12 to identified vulnerabilities with open source software and  
13 produce voluntary guidance to assist the entities that  
14 maintain open source software repositories to discover and  
15 mitigate vulnerabilities.

16 (b) **ARTIFICIAL INTELLIGENCE-ENABLED DE-**  
17 **FENSES.**—The Director shall carry out research and test-  
18 ing to improve the effectiveness of artificial intelligence-  
19 enabled cybersecurity, including by generating optimized  
20 data sets to train artificial intelligence defense systems  
21 and evaluating the performance of varying network archi-  
22 tectures at strengthening network security.

23 (c) **AUTHENTICATION OF INSTITUTE SOFTWARE.**—  
24 The Director shall ensure all software released by the In-  
25 stitute is digitally signed and maintained to enable stake-

1 holders to verify its authenticity and integrity upon instal-  
2 lation and execution.

3 (d) ASSISTANCE TO INSPECTORS GENERAL.—The  
4 Director shall provide technical assistance to improve the  
5 education and training of individual Federal agency In-  
6 spectors General and staff who are responsible for the an-  
7 nual independent evaluation they are required to perform  
8 of the information security program and practices of Fed-  
9 eral Agencies under section 3555 of title 44, United States  
10 Code.

11 **SEC. 205. DIGITAL IDENTITY MANAGEMENT RESEARCH.**

12 Section 504 of the Cybersecurity Enhancement Act  
13 of 2014 (15 U.S.C. 7464) is amended to read as follows:

14 **“SEC. 504. IDENTITY MANAGEMENT RESEARCH AND DEVEL-**  
15 **OPMENT.**

16 “(a) IN GENERAL.—The Director shall carry out a  
17 program of research to support the development of vol-  
18 untary, consensus-based technical standards, best prac-  
19 tices, benchmarks, methodologies, metrology, testbeds,  
20 and conformance criteria for identify management, taking  
21 into account appropriate user concerns—

22 “(1) to improve interoperability and portability  
23 among identity management technologies;

1           “(2) to strengthen identity proofing and  
2 verification methods used in identity management  
3 systems;

4           “(3) to improve privacy protection in identity  
5 management systems through authentication and se-  
6 curity protocols; and

7           “(4) to monitor and improve the accuracy,  
8 usability, and inclusivity of identity management  
9 systems.

10          “(b) DIGITAL IDENTITY TECHNICAL ROADMAP.—

11 The Director, in consultation with other relevant Federal  
12 agencies and stakeholders from the private sector, shall  
13 develop and maintain a technical roadmap for digital iden-  
14 tity management research and development focused on en-  
15 abling the use and adoption of modern digital identity so-  
16 lutions that align with the four criteria in subsection (a).

17          “(c) DIGITAL IDENTITY MANAGEMENT GUIDANCE.—

18           “(1) IN GENERAL.—The Director shall develop,  
19 and periodically update, in collaboration with other  
20 public and private sector organizations, common  
21 definitions and voluntary guidance for digital iden-  
22 tity management systems.

23           “(2) GUIDANCE.—The Guidance shall—

24           “(A) align with the four criteria in sub-  
25 section (a), as practicable;

1           “(B) provide case studies of implementa-  
2           tion of guidance;

3           “(C) incorporate voluntary technical stand-  
4           ards and industry best practices; and

5           “(D) not prescribe or otherwise require the  
6           use of specific technology products or services.

7           “(3) CONSULTATION.—In carrying out this sub-  
8           section, the Director shall consult with—

9           “(A) Federal and State agencies;

10          “(B) industry;

11          “(C) potential end-users and individuals  
12          that will use services related to digital identity  
13          verification; and

14          “(D) experts with relevant experience in  
15          the systems that enable digital identity  
16          verification, as determined by the Director.”.

17 **SEC. 206. BIOMETRICS RESEARCH AND TESTING.**

18          (a) IN GENERAL.—The Secretary, acting through the  
19          Director, shall establish a program to support measure-  
20          ment research to inform the development of best practices,  
21          benchmarks, methodologies, procedures, and voluntary  
22          technical standards for biometric identification systems,  
23          including facial recognition systems, to assess and improve  
24          the performance of such systems. In carrying out such  
25          program, the Director may—

1           (1) conduct research to support efforts to im-  
2           prove the performance of biometric identification  
3           systems, including in areas related to conformity as-  
4           sessment, image quality and interoperability,  
5           contactless biometric capture technologies, and  
6           human-in-the-loop biometric identification systems  
7           and processes;

8           (2) convene and engage with relevant stake-  
9           holders to establish common definitions and charac-  
10          terizations for biometric identification systems, in-  
11          cluding accuracy, fairness, bias, privacy, consent,  
12          and other properties, taking into account definitions  
13          in relevant international technical standards and  
14          other publications;

15          (3) carry out research and testing on a range  
16          of biometric modalities, such as fingerprints, voice,  
17          iris, face, vein, behavioral biometrics, genetics,  
18          multimodal biometrics, and emerging applications of  
19          biometric identification technology;

20          (4) study the use of privacy-enhancing tech-  
21          nologies and other technical protective controls to fa-  
22          cilitate access to public data sets for biometric re-  
23          search;

24          (5) conduct outreach and coordination to share  
25          technical expertise with relevant industry and non-

1 industry stakeholders and standards development or-  
2 ganizations to assist such entities in the development  
3 of best practices and voluntary standards; and

4 (6) develop such standard reference artifacts as  
5 the Director determines is necessary to further the  
6 development of such technical standards.

7 (b) BIOMETRICS VENDOR TEST PROGRAM.—

8 (1) IN GENERAL.—The Secretary, acting  
9 through the Director, shall carry out a test program  
10 to provide biometrics vendors the opportunity to test  
11 biometric identification technologies across a range  
12 of modalities.

13 (2) ACTIVITIES.—In carrying out the program  
14 under subparagraph (A), the Director shall—

15 (A) conduct research and regular testing to  
16 improve and benchmark the accuracy, efficacy,  
17 and bias of biometric identification systems, in-  
18 cluding research and testing on demographic  
19 variations, capture devices, presentation attack  
20 detection, partially occluded or computer gen-  
21 erated images, privacy and security designs and  
22 controls, template protection, de-identification,  
23 and comparison of algorithm, human, and com-  
24 bined algorithm-human recognition capability;



1 (B) develop an approach for testing soft-  
2 ware and cloud-based biometrics applications,  
3 including remote systems, in Institute test fa-  
4 cilities;

5 (C) establish reference use cases for bio-  
6 metric applications and performance criteria for  
7 assessing each use case, including accuracy and  
8 bias metrics;

9 (D) produce public-facing reports of the  
10 findings from such testing for a general audi-  
11 ence; and

12 (E) conduct such other activities as  
13 deemed necessary by the Director.

14 (3) PARTNERSHIPS WITH OTHER FEDERAL  
15 AGENCIES.—In addition to such sums as may be au-  
16 thorized to be appropriated or otherwise made avail-  
17 able to carry out this section, the Director may ac-  
18 cept funds from other Federal departments and  
19 agencies and States and local governments to carry  
20 out activities under this subsection.

21 **SEC. 207. FEDERAL BIOMETRIC PERFORMANCE STAND-**  
22 **ARDS.**

23 Section 20 of the National Institute of Standards and  
24 Technology Act (15 U.S.C. 278g–3) is amended in sub-  
25 section (b)—

1 (1) in paragraph (2), by striking “and” after  
2 the semicolon;

3 (2) in paragraph (3), by striking the period and  
4 inserting “; and”; and

5 (3) by adding at the end the following:

6 “(4) performance standards and guidelines for  
7 high risk biometric identification systems, including  
8 facial recognition systems, accounting for various  
9 use cases, type of biometric identification systems,  
10 and relevant operational conditions.”.

11 **SEC. 208. PROTECTING RESEARCH FROM CYBER THEFT.**

12 Section 2(e)(1)(A) of the National Institute of Stand-  
13 ards and Technology Act (15 U.S.C. 272(e)(1)(A)), as  
14 amended by section 203(2), is further amended—

15 (1) in clause (ix), as added by section  
16 203(2)(C), by striking “and” after the semicolon;

17 (2) by redesignating clause (x), as redesignated  
18 by section 203(2)(B), as clause (xi); and

19 (3) by inserting after clause (ix), as added by  
20 section 203(2)(C), the following:

21 “(x) consider institutions of higher  
22 education (as defined in section 101 of the  
23 Higher Education Act of 1965 (20 U.S.C.  
24 1001)); and”.

1 **SEC. 209. DISSEMINATION OF RESOURCES FOR RESEARCH**  
2 **INSTITUTIONS.**

3 (a) DISSEMINATION OF RESOURCES FOR RESEARCH  
4 INSTITUTIONS.—

5 (1) IN GENERAL.—Not later than one year  
6 after the date of the enactment of this Act, the Di-  
7 rector shall, using the authorities of the Director  
8 under subsections (c)(15) and (e)(1)(A)(ix) of sec-  
9 tion 2 of the National Institute of Standards and  
10 Technology Act (15 U.S.C. 272), as amended by sec-  
11 tion 208, disseminate and make publicly available  
12 resources to help qualifying institutions identify, as-  
13 sess, manage, and reduce their cybersecurity risk re-  
14 lated to conducting research.

15 (2) REQUIREMENTS.—The Director shall en-  
16 sure that the resources disseminated pursuant to  
17 paragraph (1)—

18 (A) are generally applicable and usable by  
19 a wide of qualifying institutions;

20 (B) vary with the nature and size of the  
21 qualifying institutions, and the nature and sen-  
22 sitivity of the data collected or stored on the in-  
23 formation systems or devices of the qualifying  
24 institutions;

25 (C) include elements that promote aware-  
26 ness of simple, basic controls, a workplace cy-

1           bersecurity culture, and third-party stakeholder  
2           relationships, to assist qualifying institutions in  
3           mitigating common cybersecurity risks;

4           (D) include case, examples, and scenarios  
5           studies of practical application;

6           (E) are technology-neutral and can be im-  
7           plemented using technologies that are commer-  
8           cial and off-the-shelf; and

9           (F) to the extent practicable, are based on  
10          international technical standards.

11          (3) NATIONAL CYBERSECURITY AWARENESS  
12          AND EDUCATION PROGRAM.—The Director shall en-  
13          sure that the resources disseminated under para-  
14          graph (1) are consistent with the efforts of the Di-  
15          rector under section 401 of the Cybersecurity En-  
16          hancement Act of 2014 (15 U.S.C. 7451).

17          (4) UPDATES.—The Director shall review peri-  
18          odically and update the resources under paragraph  
19          (1) as the Director determines appropriate.

20          (5) VOLUNTARY RESOURCES.—The use of the  
21          resources disseminated under paragraph (1) shall be  
22          considered voluntary.

23          (b) OTHER FEDERAL CYBERSECURITY REQUIRE-  
24          MENTS.—Nothing in this section may be construed to su-

1 persede, alter, or otherwise affect any cybersecurity re-  
 2 quirements applicable to Federal agencies.

3 (c) DEFINITIONS.—In this section:

4 (1) QUALIFYING INSTITUTIONS.—The term  
 5 “qualifying institutions” means institutions of high-  
 6 er education that are classified as either very-high  
 7 research intensive (R1) or high research intensive  
 8 (R2) status universities by the Carnegie Classifica-  
 9 tion of Academic Institutions.

10 (2) RESOURCES.—The term “resources” means  
 11 guidelines, tools, best practices, technical standards,  
 12 methodologies, and other ways of providing informa-  
 13 tion.

14 **SEC. 210. ADVANCED COMMUNICATIONS RESEARCH.**

15 The National Institute of Standards and Technology  
 16 Act (15 U.S.C. 271 et seq.) is amended—

17 (1) by redesignating section 35 as section 36;  
 18 and

19 (2) by inserting after section 34 the following:

20 **“SEC. 35. ADVANCED COMMUNICATIONS RESEARCH ACTIVI-**  
 21 **TIES.**

22 “(a) ADVANCED COMMUNICATIONS RESEARCH.—

23 “(1) IN GENERAL.—The Director of the Na-  
 24 tional Institute of Standards and Technology, in  
 25 consultation with the Administrator of the National

1 Telecommunications and Information Administra-  
2 tion, the Director of the National Science Founda-  
3 tion, and heads of other Federal agencies, as appro-  
4 priate, shall carry out a program of measurement re-  
5 search to inform the development of common defini-  
6 tions, benchmarks, best practices, methodologies,  
7 and technical standards for advanced communica-  
8 tions technologies.

9 “(2) RESEARCH AREAS.—Research areas may  
10 include—

11 “(A) radio frequency emissions and inter-  
12 ference, including technologies and techniques  
13 to mitigate such emissions;

14 “(B) advanced antenna arrays and artifi-  
15 cial intelligence systems capable of operating  
16 advanced antenna arrays;

17 “(C) artificial intelligence systems to en-  
18 able internet of things networks, immersive  
19 technology, and other advanced communications  
20 technologies;

21 “(D) network sensing and monitoring tech-  
22 nologies;

23 “(E) technologies to enable spectrum flexi-  
24 bility and agility;

1           “(F) optical and quantum communications  
2 technologies;

3           “(G) security of advanced communications  
4 systems and their supply chains;

5           “(H) public safety communications;

6           “(I) resilient internet of things applications  
7 for advanced manufacturing; and

8           “(J) other research areas deemed nec-  
9 essary by the Director.

10          “(3) TEST BEDS.—In coordination with the pri-  
11 vate sector and other Federal agencies as appro-  
12 priate, the Director may develop and manage  
13 testbeds for research and development of advanced  
14 communications technologies.

15          “(4) OUTREACH.—In carrying out the activities  
16 under this subsection, the Director shall seek input  
17 from other Federal agencies and from private sector  
18 stakeholders, on an ongoing basis, to help inform re-  
19 search and development priorities, including through  
20 workshops and other multi-stakeholder activities.

21          “(5) TECHNICAL ROADMAPS.—In carrying out  
22 the activities under this subsection, the Director  
23 shall convene industry, institutions of higher edu-  
24 cation, nonprofit organizations, Federal laboratories,  
25 and other Federal agencies engaged in advanced

1       communications research and development to de-  
2       velop, and periodically update, coordinated technical  
3       roadmaps for advanced communications research in  
4       priority areas, such as those described in paragraph  
5       (2).

6       “(b) NATIONAL ADVANCED SPECTRUM AND COMMU-  
7       NICATIONS TEST NETWORK.—

8               “(1) IN GENERAL.—The Director, in coordina-  
9       tion with the Administrator of the National Tele-  
10       communications and Information Administration  
11       and heads of other Federal agencies, as appropriate,  
12       shall operate a national network of test facilities, in-  
13       cluding operating or coordinating the use of intellec-  
14       tual capacity, modeling and simulation, laboratories,  
15       test ranges and test beds, to be known as the Na-  
16       tional Advanced Spectrum and Communications Test  
17       Network (referred to in this section as ‘NASCTN’).

18               “(2) PURPOSES.—NASCTN shall be for the  
19       purposes of—

20                       “(A) developing methodologies for testing,  
21       measuring interference, and setting guidelines  
22       for interference;

23                       “(B) conducting interference tests to bet-  
24       ter understand the impact of Federal and com-  
25       mercial spectrum activities;



1           “(C) conducting research and testing to  
2           improve spectrum interference tolerance, flexi-  
3           bility, and agility; and

4           “(D) other activities as deemed necessary  
5           by the Director.

6           “(3) PARTNERSHIPS WITH OTHER FEDERAL  
7           AGENCIES.—In addition to such sums as may be au-  
8           thorized to be appropriated or otherwise made avail-  
9           able to carry out this section, the Director may ac-  
10          cept funds from other departments and agencies of  
11          the Federal Government, and from the State and  
12          local governments, to operate the national network  
13          under this section.”.

14 **SEC. 211. NEUTRON SCATTERING.**

15          (a) STRATEGIC PLAN FOR THE INSTITUTE NEUTRON  
16          REACTOR.—The Director shall develop a strategic plan for  
17          the future of the Institute Center for Neutron Research  
18          after the current neutron reactor is decommissioned, in-  
19          cluding—

20                 (1) a succession plan for the reactor, including  
21                 a roadmap with timeline and milestones;

22                 (2) conceptual design of a new reactor and ac-  
23                 companying facilities, as appropriate; and

24                 (3) a plan to minimize disruptions to the user  
25                 community during the transition.

1 (b) COORDINATION WITH THE DEPARTMENT OF EN-  
2 ERGY.—The Secretary, acting through the Director, shall  
3 coordinate with the Secretary of Energy on issues related  
4 to Federal support for neutron science, including esti-  
5 mation of long-term needs for research using neutron  
6 sources, and planning efforts for future facilities to meet  
7 such need.

8 (c) REPORT TO CONGRESS.—Not later than 18  
9 months after the enactment of this Act, the Director shall  
10 submit to Congress the plan required under subsection  
11 (a), and shall notify Congress of any substantial updates  
12 to such plan in subsequent years.

13 **SEC. 212. QUANTUM INFORMATION SCIENCE.**

14 (a) IN GENERAL.—The Director shall continue to  
15 prioritize and carry out activities authorized in the Na-  
16 tional Quantum Initiative Act (15 U.S.C. 8801).

17 (b) QUANTUM RESEARCH.—Section 201(a) of the  
18 National Quantum Initiative Act (15 U.S.C. 8831) is  
19 amended—

20 (1) in paragraph (3), by striking “and” at the  
21 end;

22 (2) in paragraph (4), striking the period at the  
23 end and inserting a semicolon;

24 (3) by redesignating paragraphs (3) through  
25 (4) as paragraphs (6) through (7); and

1           (4) by inserting after paragraph (2) the fol-  
2           lowing:

3           “(3) shall carry out research to facilitate the  
4           development and standardization of quantum cryp-  
5           tography and post-quantum classical cryptography;

6           “(4) shall carry out research to facilitate the  
7           development and standardization of quantum net-  
8           working and communications technologies and appli-  
9           cations, including—

10                   “(A) quantum repeater technology;

11                   “(B) quantum network traffic manage-  
12                   ment;

13                   “(C) quantum transduction;

14                   “(D) long baseline entanglement and  
15                   teleportation; and

16                   “(E) such other technologies, processes, or  
17                   applications as the Under Secretary considers  
18                   appropriate;

19           “(5) shall, for quantum technologies deemed by  
20           the Director to be at a readiness level sufficient for  
21           standardization, the Director shall provide technical  
22           review and assistance to such other Federal agencies  
23           as the Director considers appropriate for the devel-  
24           opment of quantum network infrastructure stand-  
25           ards;”.

1 **SEC. 213. ARTIFICIAL INTELLIGENCE.**

2 The Director shall continue to support the develop-  
3 ment of artificial intelligence and data science, and carry  
4 out the activities of the National Artificial Intelligence Ini-  
5 tiative Act of 2020 authorized in division E of the Na-  
6 tional Defense Authorization Act for Fiscal Year 2021  
7 (Public Law 116–283), including through—

8 (1) expanding the Institute’s capabilities, in-  
9 cluding scientific staff and research infrastructure;

10 (2) supporting measurement research and de-  
11 velopment for advanced computer chips and hard-  
12 ware designed for artificial intelligence systems;

13 (3) supporting the development of technical  
14 standards and guidelines that promote safe and  
15 trustworthy artificial intelligence systems;

16 (4) creating a framework for managing risks  
17 associated with artificial intelligence systems; and

18 (5) developing and publishing cybersecurity  
19 tools, encryption methods, and best practices for ar-  
20 tificial intelligence and data science.

21 **TITLE III—GENERAL ACTIVITIES**

22 **SEC. 301. NIST FACILITIES AND CONSTRUCTION.**

23 (a) OWNERSHIP, OPERATION, AND LEASING OF FA-  
24 CILITIES.—Section 14 of the National Institute of Stand-  
25 ards and Technology Act (15 U.S.C. 278d) is amended  
26 by adding at the end the following:

1       “(c) OWNERSHIP, OPERATION, AND LEASING OF FA-  
2 CILITIES.—Within the limits of funds which are appro-  
3 priated for the Institute, the Secretary is authorized to  
4 own, operate, or lease research facilities in locations  
5 throughout the United States and its territories in fur-  
6 therance of its mission, provided that no agreement is en-  
7 tered into to own, operate, or lease without first notifying  
8 the appropriate Congressional Committees of jurisdic-  
9 tion.”.

10       (b) FACILITIES MODERNIZATION FUND.—Section 14  
11 of such Act (15 U.S.C. 278d), as amended by subsection  
12 (a), is further amended by adding at the end the following:

13       “(d) FACILITIES MODERNIZATION FUND.—

14               “(1) ESTABLISHMENT.—There is established in  
15 the Treasury of the United States a fund to be  
16 known as the ‘NIST Facilities Modernization Fund’  
17 (hereafter in this section referred to as the ‘Fund’).

18               “(2) USE OF FUNDS.—Amounts in the Fund  
19 shall be available to Secretary, acting through the  
20 Director, for Capital Projects on the Institute’s cam-  
21 puses for the modernization and construction of re-  
22 search facilities needed to conduct leading edge sci-  
23 entific and technical research.

24               “(3) CONTENTS OF FUND.—The Funds shall  
25 consist of the following amounts:

1           “(A) Such amounts as may be appro-  
2           priated by law.

3           “(B) Interest earned on the balance of the  
4           Fund.

5           “(4) AUTHORIZATION OF FUNDS.—Of the funds  
6           authorized to be appropriated in section 302 of the  
7           National Institute of Standards and Technology for  
8           the Future Act of 2021 for the construction and  
9           renovation of facilities, \$80,000,000 for each of the  
10          fiscal years 2022 through 2026 shall be provided for  
11          the Fund established in subsection (a).

12          “(5) CONTINUING AVAILABILITY OF FUNDS.—  
13          Amounts in the Fund are available without regard  
14          to fiscal year limitation.

15          “(6) NOTIFICATION TO COMMITTEES.—Upon  
16          making any obligation or expenditure of any amount  
17          in the Fund, the Secretary, through the Director,  
18          shall notify the Committee on Science, Space, and  
19          Technology of the House of Representatives, the  
20          Committee on Commerce, Science, and Transpor-  
21          tation of the Senate, the Committee on Appropria-  
22          tions of the House of Representatives and the Com-  
23          mittee on Appropriations of the Senate of the  
24          amount and purpose of the obligation or expendi-  
25          ture.

1           “(7) NIST FACILITIES MODERNIZATION AND  
2 MAINTENANCE PLAN.—

3           “(A) IN GENERAL.—To carry out the pro-  
4 gram authorized in subsection (a), the Sec-  
5 retary, acting through the Director, shall de-  
6 velop and submit to Congress a 5-year mod-  
7 ernization and maintenance plan for the Na-  
8 tional Institute of Standards and Technology’s  
9 campuses.

10           “(B) TIMING.—The modernization and  
11 maintenance plan required in paragraph (1)  
12 shall be submitted to Congress not later than  
13 30 days after the date of enactment of the Na-  
14 tional Institute of Standards and Technology  
15 for the Future Act of 2021, and an update  
16 shall be submitted to Congress annually there-  
17 after.

18           “(C) COMPONENTS.—The plan required in  
19 paragraph (1) shall include, with respect to the  
20 5-year period beginning on the date of the sub-  
21 mission or update, the following:

22           “(i) A list of Capital Construction  
23 Projects expected to be undertaken during  
24 such period, the core capabilities these fa-  
25 cilities will provide, climate-resilience plan-

1           ning efforts, anticipated schedule of con-  
2           struction, and anticipated funding require-  
3           ments.

4           “(ii) A list of planned utility infra-  
5           structure projects expected to be under-  
6           taken during such periods, anticipated  
7           schedule of construction, and anticipated  
8           funding requirements.

9           “(iii) A list of planned IT infrastruc-  
10          ture projects expected to be undertaken  
11          during such period, anticipated schedule of  
12          construction, and anticipated funding re-  
13          quirements.

14          “(iv) A list of the deferred mainte-  
15          nance projects expected to be undertaken  
16          during such period, anticipated schedule of  
17          construction, anticipated funding require-  
18          ments, and an evaluation of progress made  
19          in reducing the deferred maintenance back-  
20          log.”.

21 **SEC. 302. EDUCATIONAL OUTREACH AND SUPPORT FOR**  
22 **UNDERREPRESENTED COMMUNITIES.**

23           Section 18 of the National Institute of Standards and  
24           Technology Act (15 U.S.C. 278g-1) is amended—

25           (1) in subsection (a), in the second sentence—



1 (A) by striking “may” and inserting  
2 “shall”; and

3 (B) by striking “academia” and inserting  
4 “diverse types of institutions of higher edu-  
5 cation”; and

6 (2) in subsection (e)—

7 (A) in paragraph (4), by striking “and” at  
8 the end;

9 (B) in paragraph (5), by striking the pe-  
10 riod at the end and inserting “; and”; and

11 (C) by inserting after paragraph (5) the  
12 following:

13 “(6) conduct outreach to and develop research  
14 collaborations with historically black colleges and  
15 universities and minority-serving institutions, includ-  
16 ing through the recruitment of students and faculty  
17 at such institutions to participate in programs devel-  
18 oped under paragraph (3); and

19 “(7) carry out other activities to increase the  
20 participation of persons historically underrep-  
21 resented in STEM in the Institute’s programs.”.

22 **SEC. 303. OTHER TRANSACTIONS AUTHORITY.**

23 Section 2(b)(4) of the National Institute of Stand-  
24 ards and Technology Act (15 U.S.C. 272(b)(4)) is amend-  
25 ed to read as follows:

1           “(4) to enter into and perform such contracts,  
2 including cooperative research and development ar-  
3 rangements and grants and cooperative agreements  
4 or other transactions, as may be necessary in the  
5 conduct of its work and on such terms as it may  
6 deem appropriate, in furtherance of the purposes of  
7 this Act;”.

8 **SEC. 304. INTERNATIONAL STANDARDS DEVELOPMENT.**

9 (a) INTERNATIONAL STANDARDS ENGAGEMENT.—

10           (1) IN GENERAL.—The Director shall lead in-  
11 formation exchange and coordination among Federal  
12 agencies and communication from Federal agencies  
13 to the private sector of the United States to ensure  
14 effective Federal engagement in the development  
15 and use of international technical standards.

16           (2) REQUIREMENTS.—To support private sec-  
17 tor-led engagement and ensure effective Federal en-  
18 gagement in the development and use of inter-  
19 national technical standards, the Director shall con-  
20 sider—

21           (A) the role and needs of the Federal Gov-  
22 ernment with respect to international technical  
23 standards;

24           (B) organizations developing international  
25 technical standards of interest to the United

1 States, United States representation and influ-  
2 ence in these organizations, and key contribu-  
3 tors for technical and leadership expertise in  
4 these organizations;

5 (C) support for persons with domain sub-  
6 ject matter expertise, especially from small  
7 businesses located in the United States, to in-  
8 fluence and engage in technical standards lead-  
9 ership positions, working groups and meetings;

10 (D) opportunities for partnerships for sup-  
11 porting international technical standards from  
12 across the Federal Government, federally fund-  
13 ed research and development centers, univer-  
14 sity-affiliated research centers, institutions of  
15 higher education, industry, industry associa-  
16 tions, nonprofit organizations, and other key  
17 contributors;

18 (E) support for activities to encourage the  
19 adoption of technical standards developed in the  
20 United States to be adopted by international  
21 standards organizations; and

22 (F) other activities determined by the Di-  
23 rector to be necessary to support United States  
24 participation in international standards develop-  
25 ment, economic competitiveness, and national

1 security in the development and use of inter-  
2 national technical standards.

3 (b) CAPACITY BUILDING GUIDANCE.—The Director  
4 shall support education and workforce development efforts  
5 to promote United States participation in international  
6 standards organizations. The Director shall—

7 (1) identify and create, as appropriate, tech-  
8 nical standards education and training resources for  
9 interested businesses, industry associations, aca-  
10 demia, nonprofits, Federal agencies, and other rel-  
11 evant standards contributors, including activities  
12 targeted at integrating standards content into un-  
13 dergraduate and graduate curricula in science, engi-  
14 neering, business, public policy, and law;

15 (2) conduct outreach, including to private sec-  
16 tor leaders, to support engagement by more United  
17 States stakeholders in international technical stand-  
18 ards development; and

19 (3) other activities deemed necessary by the Di-  
20 rector to support increased engagement, influence,  
21 and leadership of United States organizations in the  
22 development of international technical standards.

23 (c) CAPACITY BUILDING PILOT PROGRAM.—

24 (1) IN GENERAL.—The Director, in coordina-  
25 tion with the Director of the National Science Foun-

1        dation, the Administrator of the Small Business Ad-  
2        ministration and the heads of other relevant Federal  
3        agencies, as appropriate, shall establish a 5-year  
4        pilot program to award grants, on a merit-reviewed,  
5        competitive basis, to private sector entities, nonprofit  
6        institutions, and based in the United States to sup-  
7        port increased participation by small business and  
8        academic interests in international standards organi-  
9        zations.

10            (2) ACTIVITIES.—In carrying out the grants es-  
11        tablished in subsection (c), the Director shall award  
12        competitive, merit-reviewed grants to covered entities  
13        to cover the reasonable costs, up to a specified ceil-  
14        ing set by the Director, of activities supporting in-  
15        creased engagement and leadership of employees of  
16        small businesses and faculty of institutions of higher  
17        education or other nonprofit research institutions  
18        with subject matter expertise in international stand-  
19        ards organizations.

20            (3) AWARD CRITERIA.—The Director may only  
21        provide a grant under this section to an eligible re-  
22        cipient that—

23                    (A) demonstrates deep technical standards  
24                    expertise;

1 (B) demonstrates facility with the proc-  
2 esses of the standards development organization  
3 in which the recipient intends to engage using  
4 grant funds;

5 (C) proposes a feasible set of standard  
6 deliverables to be completed over the period of  
7 the grant;

8 (D) explains how the recipient will fund  
9 the standards work supported by the grant if  
10 the grant funds are insufficient to cover all  
11 costs of the work; and

12 (E) commits personnel with appropriate  
13 expertise to engage in relevant international or-  
14 ganizations responsible for developing technical  
15 standards over the period of the grant.

16 (4) ELIGIBILITY.—A small business concern (as  
17 defined in section 3 of the Small Business Act (15  
18 U.S.C. 632)) based in the United States, an institu-  
19 tion of higher education (as defined by section 102  
20 of the Higher Education Act of 1965 (20 U.S.C.  
21 1002)), or a nonprofit institution as defined in sec-  
22 tion 4(5) of the Stevenson-Wydler Act (15 U.S.C.  
23 3703) shall be eligible to receive grants under this  
24 program.

1           (5) PRIORITIZATION.—The Director may  
2           prioritize grants awarded under this section to eligi-  
3           ble recipients proposals for standards development  
4           that address clearly defined current or anticipated  
5           market needs or gaps that would not be met without  
6           the grant.

7           (6) APPLICATION.—An eligible recipient seeking  
8           funding under subsection (c) shall submit an appli-  
9           cation to the Director at such time, in such manner,  
10          and containing such information as the Director  
11          may require.

12          (7) MERIT REVIEW PROCESS.—Not later than  
13          90 days after the enactment of this Act, the Direc-  
14          tor shall establish a merit review process, including  
15          the creation of merit review panels made of experts  
16          from government and the private sector, to evaluate  
17          the application under paragraph (5) to ensure appli-  
18          cations submitted are reviewed in a fair, competitive,  
19          transparent, and in-depth manner.

20          (8) CONSULTATION.—In carrying out the pilot  
21          program established under subsection (c), the Direc-  
22          tor shall consult with other Federal agencies, private  
23          sector organizations, institutions of higher edu-  
24          cation, and nonprofit organizations to help inform  
25          the pilot program, including selection criteria, appli-

1       cant disclosure requirements, grant amount and du-  
2       ration, and the merit review process.

3               (9) REPORT TO CONGRESS.—The Director shall  
4       brief Congress after the second year of the pilot pro-  
5       gram and each year following that includes the fol-  
6       lowing:

7               (A) An assessment of the effectiveness of  
8       the pilot program for improving the participa-  
9       tion of United States small businesses, United  
10       States institutions of higher education, or other  
11       nonprofit research institutions in international  
12       standards organizations, including—

13               (i) the type of activities supported, in-  
14       cluding leadership roles;

15               (ii) the international standards orga-  
16       nizations participated in; and

17               (iii) the technical areas covered by the  
18       activities.

19               (B) If deemed effective, a plan for perma-  
20       nent implementation of the pilot program.

21       **SEC. 305. UPDATE TO MANUFACTURING EXTENSION PART-**  
22       **NERSHIP.**

23               (a) ACCEPTANCE OF FUNDS.—Section 25(l) of the  
24       National Institute of Standards and Technology Act (15  
25       U.S.C. 278k(l)) is amended to read as follows:



1 “(1) ACCEPTANCE OF FUNDS.—

2 “(1) IN GENERAL.—In addition to such sums  
3 as may be appropriated to the Secretary and Direc-  
4 tor to operate the Program, the Secretary and Di-  
5 rector may also accept funds from other Federal de-  
6 partments and agencies, as well as funds provided  
7 by the private sector pursuant to section 2(c)(7) of  
8 this Act (15 U.S.C. 272(c)(7)), to be available to the  
9 extent provided by appropriations Acts, for the pur-  
10 pose of strengthening United States manufacturing.

11 “(2) COMPETITIVE AWARDS.—Funds accepted  
12 from other Federal departments and agencies and  
13 from the private sector under paragraph (1) shall be  
14 awarded competitively by the Secretary and by the  
15 Director to Manufacturing Extension Partnership  
16 Centers, provided that the Secretary and Director  
17 may make non-competitive awards, pursuant to this  
18 section or section 25A, or as a non-competitive con-  
19 tract, as appropriate, if the Secretary and the Direc-  
20 tor determine that—

21 “(A) the manufacturing market or sector  
22 targeted is limited geographically or in scope;

23 “(B) the number of States (or territory, in  
24 the case of Puerto Rico) with Manufacturing  
25 Extension Partnership Centers serving manu-

1           facturers of such market or sector is five or  
2           fewer; and

3                   “(C) such Manufacturing Extension Part-  
4           nership Center or Centers has received a posi-  
5           tive evaluation in the most recent evaluation  
6           conducted pursuant to subsection (g).”.

7           (b) INCLUSION OF CERTAIN SCHOOLS.—Section 25  
8           of the National Institute of Standards and Technology Act  
9           (15 U.S.C. 278k) is amended—

10                   (1) in subsection (c)—

11                           (A) in paragraph (6), by striking “commu-  
12           nity colleges and area career and technical edu-  
13           cation schools” and inserting “secondary  
14           schools (as defined in section 8101 of the Ele-  
15           mentary and Secondary Education Act of 1965  
16           (20 U.S.C. 7801)), community colleges, and  
17           area career and technical education schools, in-  
18           cluding those in underserved and rural commu-  
19           nities,”; and

20                           (B) in paragraph (7)—

21                                   (i) by striking “and local colleges”  
22           and inserting “local high schools and local  
23           colleges, including those in underserved  
24           and rural communities,”; and

1 (ii) by inserting “or other applied  
2 learning opportunities” after “apprentice-  
3 ships”; and

4 (2) in subsection (d)(3), by striking “, commu-  
5 nity colleges, and area career and technical edu-  
6 cation schools,” and inserting “and local high  
7 schools, community colleges, and area career and  
8 technical education schools, including those in un-  
9 derserved and rural communities,”.

10 **SEC. 306. STANDARD TECHNICAL UPDATE.**

11 (a) NATIONAL INSTITUTE OF STANDARDS AND  
12 TECHNOLOGY ACT UPDATES.—The National Institute of  
13 Standards and Technology Act (15 U.S.C. 271) is amend-  
14 ed—

15 (1) in section 15—

16 (A) in subsection (b), by striking the pe-  
17 riod at the end and inserting a semicolon;

18 (B) in subsection (g), by striking “and”  
19 after the semicolon; and

20 (C) by striking the period at the end and  
21 inserting “; and (i) the protection of Institute  
22 buildings and other plant facilities, equipment,  
23 and property, and of employees, associates, or  
24 visitors, located therein or associated therewith,  
25 notwithstanding any other provision of law, the

1 direction of such of the officers and employees  
2 of the Institute as the Secretary deems nec-  
3 essary in the public interest hereafter to carry  
4 firearms while in the conduct of their official  
5 duties, and the authorization of employees of  
6 contractors and subcontractors of the Institute  
7 who are engaged in the protection of property  
8 owned by the United States, and located at fa-  
9 cilities owned by, leased, used or under the con-  
10 trol of the United States, to carry firearms  
11 while in the conduct of their official duties, and,  
12 under regulations prescribed by the Secretary  
13 and approved by the Attorney General, the au-  
14 thorization of officers and employees of the In-  
15 stitute and of its contractors and subcontrac-  
16 tors authorized to carry firearms hereafter to  
17 arrest without warrant for any offense against  
18 the United States committed in their presence,  
19 or for any felony cognizable under the laws of  
20 the United States if they have reasonable  
21 grounds to believe that the person to be ar-  
22 rested has committed or is committing such fel-  
23 ony, provided that such authority to make ar-  
24 rests may be exercised only while guarding and  
25 protecting buildings and other plant facilities,

1 equipment, and property owned or leased by,  
2 used or under the control of, the United States  
3 under the administration and control of the  
4 Secretary.”; and

5 (2) by amending section 17(a) to read as fol-  
6 lows:

7 “(a) The Secretary is authorized, notwithstanding  
8 any other provision of law, to expend such sums, within  
9 the limit of appropriated funds, as the Secretary may  
10 deem desirable through direct support for activities of  
11 international organizations and foreign national metrology  
12 institutes with which the Institute cooperates to advance  
13 measurement methods, technical standards, and related  
14 basic technologies, for official representation, to host offi-  
15 cial receptions, dinners, and similar events, and to other-  
16 wise extend official courtesies, including transportation of  
17 foreign dignitaries and representatives of foreign national  
18 metrology institutes to and from the Institute, for the pur-  
19 pose of maintaining the standing and prestige of the De-  
20 partment of Commerce and the Institute, through the  
21 grant of fellowships or other appropriate form of financial  
22 or logistical assistance or support to foreign nationals not  
23 in service to the Government of the United States while  
24 they are performing scientific or engineering work at the

1 Institute or participating in the exchange of scientific or  
2 technical information at the Institute.”.

3 (b) STEVENSON-WYDLER UPDATES.—The Steven-  
4 son-Wydler Technology Innovation Act of 1980 (15 U.S.C.  
5 3701) is amended—

6 (1) in section 17(c)(1)—

7 (A) by moving each of subparagraphs (D)  
8 and (E) two ems to the left; and

9 (B) by adding at the end the following:

10 “(G) Community.”; and

11 (2) in section 23(a)—

12 (A) by redesignating paragraphs (1) and  
13 (2) as paragraphs (2) and (3), respectively; and

14 (B) by inserting before paragraph (2), as  
15 so redesignated, the following:

16 “(1) accept, apply for, use, and spend Federal,  
17 State, and nongovernmental acquisition and assist-  
18 ance funds to further the purposes of this Act as  
19 well as share personnel, associates, facilities, and  
20 property with these partner organizations, with or  
21 without reimbursement, upon mutual agreement:  
22 *Provided*, That the approving official may waive  
23 statutory and regulatory administrative provisions so  
24 that a single agency may administer a joint pro-  
25 gram, upon mutual agreement;”.

1           (c) AMERICAN INNOVATION AND COMPETITIVENESS  
2 ACT UPDATE.—Section 113 of the American Innovation  
3 and Competitiveness Act (15 U.S.C. 278e note) is re-  
4 pealed.

5           (d) FEDERAL ENERGY MANAGEMENT IMPROVEMENT  
6 ACT UPDATE.—Section 4 of the Federal Energy Manage-  
7 ment Improvement Act of 1988 (15 U.S.C. 5001) is  
8 amended by striking “Secretary of Commerce” and “Sec-  
9 retary” each place either such term appears and inserting  
10 “Consumer Product Safety Commission”.

○