

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.

(9) TECHNICAL STANDARDS.—The term “technical standard” has the meaning given such term in section 12(d)(5) of the National Technology Transfer and Advancement Act of 1995.

TITLE I—APPROPRIATIONS

SEC. 101. AUTHORIZATION OF APPROPRIATIONS.

(a) FISCAL YEAR 2022.—

(1) IN GENERAL.—There are authorized to be appropriated to the Secretary of Commerce \$1,267,070,000 for the National Institute of Standards and Technology for fiscal year 2022.

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

(A) \$915,570,000 shall be for scientific and technical research and services laboratory activities, of which \$9,000,000 may be transferred to the Working Capital Fund;

(B) \$140,000,000 shall be for the construction and maintenance of facilities, of which \$80,000,000 shall be for Safety, Capacity, Maintenance, and Major Repairs; and

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

25 and 26 of the National Institute of Standards and Technology Act (15 U.S.C. 278k and 278l) and \$56,500,000 shall be for the Network for Manufacturing Innovation Program under section 34 of the National Institute of Standards and Technology Act (15 U.S.C. 278s).

(b) FISCAL YEAR 2023.—

(1) IN GENERAL.—There are authorized to be appropriated to the Secretary of Commerce \$1,335,200,000 for the National Institute of Standards and Technology for fiscal year 2023.

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

(A) \$979,100,000 shall be for scientific and technical research and services laboratory activities, of which \$10,000,000 may be transferred to the Working Capital Fund;

(B) \$140,000,000 shall be for the construction and maintenance of facilities, of which \$80,000,000 shall be for Safety, Capacity, Maintenance, and Major Repairs, including \$20,000,000 for IT infrastructure; and

(C) \$216,200,000 shall be for industrial technology services activities, of which \$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,

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

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

TITLE II—MEASUREMENT RESEARCH

SEC. 201. ENGINEERING BIOLOGY AND BIOMETROLOGY.

(a) IN GENERAL.—The Director shall—

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

(A) measurement technologies to support
foundational understanding of the mechanisms
of conversion of DNA information into cellular
function, including both the natural and engi-
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 identity 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-

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

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

(E) are technology-neutral and can be implemented using technologies that are commercial and off-the-shelf; and

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

(3) NATIONAL CYBERSECURITY AWARENESS AND EDUCATION PROGRAM.—The Director shall ensure that the resources disseminated under paragraph (1) are consistent with the efforts of the Director under section 401 of the Cybersecurity Enhancement Act of 2014 (15 U.S.C. 7451).

(4) UPDATES.—The Director shall review periodically and update the resources under paragraph (1) as the Director determines appropriate.

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

(b) OTHER FEDERAL CYBERSECURITY REQUIREMENTS.—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 “(l) 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”.

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