Calendar No. 725

118TH CONGRESS
2D SESSION

S. 4178

To establish artificial intelligence standards, metrics, and evaluation tools, to support artificial intelligence research, development, and capacity building activities, to promote innovation in the artificial intelligence industry by ensuring companies of all sizes can succeed and thrive, and for other purposes.

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IN THE SENATE OF THE UNITED STATES

APRIL 18, 2024

Ms. CANTWELL (for herself, Mr. YOUNG, Mr. HICKENLOOPER, Mrs. BLACKBURN, Mr. WICKER, Mr. LUJÁN, Ms. SINEMA, Mr. ROUNDS, and Mr. SCHUMER) introduced the following bill; which was read twice and referred to the Committee on Commerce, Science, and Transportation

DECEMBER 18 (legislative day, DECEMBER 16), 2024

Reported by Ms. CANTWELL, with an amendment

[Strike out all after the enacting clause and insert the part printed in italic]

————————————

A BILL

To establish artificial intelligence standards, metrics, and evaluation tools, to support artificial intelligence research, development, and capacity building activities, to promote innovation in the artificial intelligence industry by ensuring companies of all sizes can succeed and thrive, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*

2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE; TABLE OF CONTENTS.**

4 (a) SHORT TITLE.—This Act may be cited as the

5 "Future of Artificial Intelligence Innovation Act of 2024".

6 (b) TABLE OF CONTENTS.—The table of contents for

7 this Act is as follows:

SEC. 2. SENSE OF CONGRESS.

It is the sense of Congress that policies governing artificial intelligence should maximize the potential and development of artificial intelligence to benefit all private and public stakeholders.

SEC. 3. DEFINITIONS.

In this Act:

(1) AGENCY.—The term "agency" has the meaning given such term in section 3502 of title 44, United States Code, except such term shall include an independent regulatory agency, as defined in such section.

(2) ARTIFICIAL INTELLIGENCE.—The term "artificial intelligence" has the meaning given such term in section 5002 of the National Artificial Intelligence Initiative Act of 2020 (15 U.S.C. 9401).

(3) ARTIFICIAL INTELLIGENCE BLUE-TEAMING.—The term "artificial intelligence blue-teaming" means an effort to conduct operational network vulnerability evaluations and provide mitigation techniques to entities who have a need for an independent technical review of the network security posture of an artificial intelligence system.

(4) ARTIFICIAL INTELLIGENCE MODEL.—The term "artificial intelligence model" means a compo-

1   nent of an artificial intelligence system that is a

2   model—

3   (A) derived using mathematical, computa-

4   tional, statistical, or machine-learning tech-

5   niques; and

6   (B) used as part of an artificial intel-

7   ligence system to produce outputs from a given

8   set of inputs.

9   (5) ARTIFICIAL INTELLIGENCE RED-

10   TEAMING.—The term "artificial intelligence red-

11   teaming" means structured adversarial testing ef-

12   forts of an artificial intelligence system to identify

13   risks, flaws, and vulnerabilities of the artificial intel-

14   ligence system, such as harmful outputs from the

15   system, unforeseen or undesirable system behaviors,

16   limitations, or potential risks associated with the

17   misuse of the system.

18   (6) ARTIFICIAL INTELLIGENCE RISK MANAGE-

19   MENT FRAMEWORK.—The term "Artificial Intel-

20   ligence Risk Management Framework" means the

21   most recently updated version of the framework de-

22   veloped and updated pursuant to section 22A(c) of

23   the National Institute of Standards and Technology

24   Act (15 U.S.C. 278h–1(c)).

1   ~~(7) ARTIFICIAL INTELLIGENCE SYSTEM.—The~~

2   ~~term "artificial intelligence system" has the meaning~~

3   ~~given such term in section 7223 of the Advancing~~

4   ~~American AI Act (40 U.S.C. 11301 note).~~

5   ~~(8) CRITICAL INFRASTRUCTURE.—The term~~

6   ~~"critical infrastructure" has the meaning given such~~

7   ~~term in section 1016(e) of the Uniting and~~

8   ~~Strengthening America by Providing Appropriate~~

9   ~~Tools Required to Intercept and Obstruct Terrorism~~

10   ~~(USA PATRIOT ACT) Act of 2001 (42 U.S.C.~~

11   ~~5195c(e)).~~

12   ~~(9) FEDERAL LABORATORY.—The term "Fed-~~

13   ~~eral laboratory" has the meaning given such term in~~

14   ~~section 4 of the Stevenson-Wydler Technology Inno-~~

15   ~~vation Act of 1980 (15 U.S.C. 3703).~~

16   ~~(10) FOUNDATION MODEL.—The term "founda-~~

17   ~~tion model" means an artificial intelligence model~~

18   ~~trained on broad data at scale and is adaptable to~~

19   ~~a wide range of downstream tasks.~~

20   ~~(11) GENERATIVE ARTIFICIAL INTEL-~~

21   ~~LIGENCE.—The term "generative artificial intel-~~

22   ~~ligence" means the class of artificial intelligence~~

23   ~~models that utilize the structure and characteristics~~

24   ~~of input data in order to generate outputs in the~~

25   ~~form of derived synthetic content. Such derived syn-~~

1 thetic content can include images, videos, audio,

2 text, software, code, and other digital content.

3 (12) NATIONAL LABORATORY.—The term "Na-

4 tional Laboratory" has the meaning given such term

5 in section 2 of the Energy Policy Act of 2005 (42

6 U.S.C. 15801).

7 (13) SYNTHETIC CONTENT.—The term "syn-

8 thetic content" means information, such as images,

9 videos, audio clips, and text, that has been signifi-

10 cantly modified or generated by algorithms, includ-

11 ing by artificial intelligence.

12 (14) TESTBED.—The term "testbed" means a

13 facility or mechanism equipped for conducting rig-

14 orous, transparent, and replicable testing of tools

15 and technologies, including artificial intelligence sys-

16 tems, to help evaluate the functionality, trust-

17 worthiness, usability, and performance of those tools

18 or technologies.

19 (15) TEVV.—The term "TEVV" means meth-

20 odologies, metrics, techniques, and tasks for testing,

21 evaluating, verifying, and validating artificial intel-

22 ligence systems or components.

23 (16) WATERMARKING.—The term

24 "watermarking" means the act of embedding infor-

25 mation that is intended to be difficult to remove,

1 into outputs generated by artificial intelligence, in-

2 cluding outputs such as text, images, audio, videos,

3 software code, or any other digital content or data,

4 for the purposes of verifying the authenticity of the

5 output or the identity or characteristics of its prove-

6 nance, modifications, or conveyance.

TITLE I—VOLUNTARY ARTIFI-CIAL INTELLIGENCE STAND-ARDS, METRICS, EVALUATION TOOLS, TESTBEDS, AND INTERNATIONAL COOPERA-TION

Subtitle A—Artificial Intelligence Safety Institute and Testbeds

15 SEC. 101. ARTIFICIAL INTELLIGENCE SAFETY INSTITUTE.

16 (a) ESTABLISHMENT OF INSTITUTE.—

17 (1) IN GENERAL.—Not later than 1 year after

18 the date of the enactment of this Act, the Under

19 Secretary of Commerce for Standards and Tech-

20 nology (in this section referred to as the ''Under

21 Secretary'') shall establish an institute on artificial

22 intelligence.

23 (2) DESIGNATION.—The institute established

24 pursuant to paragraph (1) shall be known as the

1 "Artificial Intelligence Safety Institute" (in this sec-

2 tion referred to as the "Institute").

3 (3) MISSION.—The mission of the Institute is

4 as follows:

5 (A) To assist the private sector and agen-

6 cies in developing voluntary best practices for

7 the robust assessment of artificial intelligence

8 systems.

9 (B) To provide technical assistance for the

10 adoption and use of artificial intelligence across

11 the Federal Government to improve the quality

12 of government services.

13 (C) To develop guidelines, methodologies,

14 and best practices to promote—

15 (i) development and adoption of vol-

16 untary, consensus-based technical stand-

17 ards or industry standards;

18 (ii) long-term advancements in artifi-

19 cial intelligence technologies; and

20 (iii) innovation in the artificial intel-

21 ligence industry by ensuring that compa-

22 nies of all sizes can succeed and thrive.

23 (b) DIRECTOR.—The Under Secretary shall appoint

24 a director of the Institute, who shall be known as the "Di-

25 rector of the Artificial Intelligence Safety Institute" (in

1 this section referred to as the "Director") and report di-

2 rectly to the Under Secretary.

3 (c) STAFF AND AUTHORITIES.—

4 (1) STAFF.—The Director may hire such full-

5 time employees as the Director considers appropriate

6 to assist the Director in carrying out the functions

7 of the Institute.

8 (2) USE OF AUTHORITY TO HIRE CRITICAL

9 TECHNICAL EXPERTS.—In addition to making ap-

10 pointments under paragraph (1) of this subsection,

11 the Director, in coordination with the Secretary of

12 Commerce, may make appointments of scientific, en-

13 gineering, and professional personnel, and fix their

14 basic pay, under subsection (b) of section 6 of the

15 National Institute of Standards and Technology Act

16 (15 U.S.C. 275) to hire critical technical experts.

17 (3) EXPANSION OF AUTHORITY TO HIRE CRIT-

18 ICAL TECHNICAL EXPERTS.—Such subsection is

19 amended, in the second sentence, by striking "15"

20 and inserting "30".

21 (4) MODIFICATION OF SUNSET.—Subsection (c)

22 of such section is amended by striking "the date

23 that is 5 years after the date of the enactment of

24 this section" and inserting "December 30, 2035".

1   (5) AGREEMENTS.—The Director may enter

2 into such agreements, including contracts, grants,

3 cooperative agreements, and other transactions, as

4 the Director considers necessary to carry out the

5 functions of the Institute and on such terms as the

6 Under Secretary considers appropriate.

7   (d) CONSULTATION AND COORDINATION.—In estab-

8 lishing the Institute, the Under Secretary shall—

9   (1) coordinate with—

10   (A) the Secretary of Energy;

11   (B) the Secretary of Homeland Security;

12   (C) the Secretary of Defense;

13   (D) the Director of the National Science

14 Foundation; and

15   (E) the Director of the Office of Science

16 and Technology Policy; and

17   (2) consult with the heads of such other Fed-

18 eral agencies as the Under Secretary considers ap-

19 propriate.

20   (e) FUNCTIONS.—The functions of the Institute,

21 which the Institute shall carry out in coordination with

22 the laboratories of the National Institute of Standards and

23 Technology, are as follows:

1 (1) RESEARCH, EVALUATION, TESTING, AND

2 STANDARDS.—The following functions relating to re-

3 search, evaluation, testing, and standards:

4 (A) Conducting measurement research into

5 system and model safety, validity and reli-

6 ability, security, capabilities and limitations,

7 explainability, interpretability, and privacy.

8 (B) Working with the Department of En-

9 ergy, the National Science Foundation, public-

10 private partnerships, including the Artificial In-

11 telligence Safety Institute Consortium estab-

12 lished under subsection (f), and other private

13 sector organizations to develop testing environ-

14 ments and perform regular benchmarking and

15 capability evaluations, including artificial intel-

16 ligence red-teaming as the Director considers

17 appropriate.

18 (C) Working with consensus-based, open,

19 and transparent standards development organi-

20 zations (SDOs) and relevant industry, Federal

21 laboratories, civil society, and academic institu-

22 tions to advance development and adoption of

23 clear, implementable, technically sound, and

24 technology-neutral voluntary standards and

25 guidelines that incorporate appropriate vari-

1   ations in approach depending on the size of the

2   entity, the potential risks and potential benefits

3   of the artificial intelligence system, and the role

4   of the entity (such as developer, deployer, or

5   user) relating to artificial intelligence systems.

6   (D) Building upon the Artificial Intel-

7   ligence Risk Management Framework to incor-

8   porate guidelines on generative artificial intel-

9   ligence systems.

10   (E) Developing a companion resource to

11   the Secure Software Development Framework

12   to incorporate secure development practices for

13   generative artificial intelligence and for founda-

14   tion models.

15   (F) Developing and publishing cybersecu-

16   rity tools, methodologies, best practices, vol-

17   untary guidelines, and other supporting infor-

18   mation to assist persons who maintain systems

19   used to create or train artificial intelligence

20   models to discover and mitigate vulnerabilities

21   and attacks.

22   (G) Coordinating or developing guidelines,

23   metrics, benchmarks, and methodologies for

24   evaluating artificial intelligence systems, includ-

25   ing the following:

1   (i) Cataloging existing artificial intel-
2   ligence metrics, benchmarks, and evalua-
3   tion methodologies used in industry and
4   academia.

5   (ii) Testing and validating the efficacy
6   of existing metrics, benchmarks, and eval-
7   uations, as well as TEVV tools and prod-
8   ucts.

9   (iii) Funding and facilitating research
10   and other activities in a transparent man-
11   ner, including at institutions of higher edu-
12   cation and other nonprofit and private sec-
13   tor partners, to evaluate, develop, or im-
14   prove TEVV capabilities, with rigorous sci-
15   entific merit, for artificial intelligence sys-
16   tems.

17   (iv) Evaluating foundation models for
18   their potential effect in downstream sys-
19   tems, such as when retrained or fine-
20   tuned.

21   (II) Coordinating with counterpart institu-
22   tions of international partners and allies to pro-
23   mote global interoperability in the development
24   of research, evaluation, testing, and standards
25   relating to artificial intelligence.

1   (I) Developing tools, methodologies, best

2   practices, and voluntary guidelines for identi-

3   fying vulnerabilities in foundation models.

4   (J) Developing tools, methodologies, best

5   practices, and voluntary guidelines for relevant

6   agencies to track incidents resulting in harm

7   caused by artificial intelligence systems.

8   (2) IMPLEMENTATION.—The following func-

9 tions relating to implementation:

10   (A) Using publicly available and volun-

11   tarily provided information, conducting evalua-

12   tions to assess the impacts of artificial intel-

13   ligence systems, and developing guidelines and

14   practices for safe development, deployment, and

15   use of artificial intelligence technology.

16   (B) Aligning capability evaluation and red-

17   teaming guidelines and benchmarks, sharing

18   best practices, and coordinating on building

19   testbeds and test environments with allies of

20   the United States and international partners

21   and allies.

22   (C) Coordinating vulnerability and incident

23   data sharing with international partners and al-

24   lies.

1   (D) Integrating appropriate testing capa-

2 bilities and infrastructure for testing of models

3 and systems.

4   (E) Establishing blue-teaming capabilities

5 to develop mitigation approaches and partner

6 with industry to address risks and negative im-

7 pacts.

8   (F) Developing voluntary guidelines on—

9   (i) detecting synthetic content, au-

10 thenticating content and tracking of the

11 provenance of content, labeling original

12 and synthetic content, such as by

13 watermarking, and evaluating software and

14 systems relating to detection and labeling

15 of synthetic content;

16   (ii) ensuring artificial intelligence sys-

17 tems do not violate privacy rights or other

18 rights; and

19   (iii) transparency documentation of

20 artificial intelligence datasets and artificial

21 intelligence models.

22   (G) Coordinating with relevant agencies to

23 develop or support, as the heads of the agencies

24 determine appropriate, sector- and application-

25 specific profiles of the Artificial Intelligence

1 Risk Management Framework for different use

2 cases, integrating end-user experience and on-

3 going development work into a continuously

4 evolving toolkit.

5 (3) OPERATIONS AND ENGAGEMENT.—The fol-

6 lowing functions relating to operations and engage-

7 ment:

8 (A) Managing the work of the Institute,

9 developing internal processes, and ensuring that

10 the Institute meets applicable goals and targets.

11 (B) Engaging with the private sector to

12 promote innovation and competitiveness.

13 (C) Engaging with international standards

14 organizations, multilateral organizations, and

15 similar institutes among allies and partners.

16 (f) ARTIFICIAL INTELLIGENCE SAFETY INSTITUTE

17 CONSORTIUM.—

18 (1) ESTABLISHMENT.—

19 (A) IN GENERAL.—Not later than 180

20 days after the date of the enactment of this

21 Act, the Under Secretary shall establish a con-

22 sortium of stakeholders from academic or re-

23 search communities, Federal laboratories, pri-

24 vate industry, including companies of all sizes

25 with different roles in the use of artificial intel-

1 ligence systems, including developers, deployers,

2 and users, and civil society with expertise in

3 matters relating to artificial intelligence to sup-

4 port the Institute in carrying out the functions

5 set forth under subsection (e).

6 (B) DESIGNATION.—The consortium es-

7 tablished pursuant to subparagraph (A) shall be

8 known as the "Artificial Intelligence Safety In-

9 stitute Consortium".

10 (2) CONSULTATION.—The Under Secretary,

11 acting through the Director, shall consult with the

12 consortium established under this subsection not less

13 frequently than quarterly.

14 (3) REPORT TO CONGRESS.—Not later than 2

15 years after the date of the enactment of this Act, the

16 Director of the National Institute of Standards and

17 Technology shall submit to the Committee on Com-

18 merce, Science, and Transportation of the Senate

19 and the Committee on Science, Space, and Tech-

20 nology of the House of Representatives a report

21 summarizing the contributions of the members of

22 the consortium established under this subsection in

23 support the efforts of the Institute.

24 (g) ARTIFICIAL INTELLIGENCE SYSTEM TESTING.—

25 In carrying out the Institute functions required by sub-

1 section (a), the Under Secretary shall support and con-

2 tribute to the development of voluntary, consensus-based

3 technical standards for testing artificial intelligence sys-

4 tem components, including, as the Under Secretary con-

5 siders appropriate, the following:

6 (1) Physical infrastructure for training or de-

7 veloping artificial intelligence models and systems,

8 including cloud infrastructure.

9 (2) Physical infrastructure for operating artifi-

10 cial intelligence systems, including cloud infrastruc-

11 ture.

12 (3) Data for training artificial intelligence mod-

13 els.

14 (4) Data for evaluating the functionality and

15 trustworthiness of trained artificial intelligence mod-

16 els and systems.

17 (5) Trained or partially trained artificial intel-

18 ligence models and any resulting software systems or

19 products.

20 (h) GIFTS.—

21 (1) AUTHORITY.—The Director may seek, ac-

22 cept, hold, administer, and use gifts from public and

23 private sources whenever the Director determines it

24 would be in the interest of the United States to do

25 so.

1   ~~(2) REGULATIONS.—The Director, in consulta-~~

2 ~~tion with the Director of the Office of Government~~

3 ~~Ethics, shall ensure that authority under this sub-~~

4 ~~section is exercised consistent with all relevant eth-~~

5 ~~ical constraints and principles, including—~~

6   ~~(A) the avoidance of any prohibited conflict~~

7 ~~of interest or appearance of impropriety; and~~

8   ~~(B) a prohibition against the acceptance of~~

9 ~~a gift from a foreign government or an agent~~

10 ~~of a foreign government.~~

11 ~~(i) RULE OF CONSTRUCTION.—Nothing in this sec-~~

12 ~~tion shall be construed to provide the Director of the Na-~~

13 ~~tional Institute of Standards and Technology any enforce-~~

14 ~~ment authority that was not in effect on the day before~~

15 ~~the date of the enactment of this Act.~~

16 ~~**SEC. 102. PROGRAM ON ARTIFICIAL INTELLIGENCE**~~

17 ~~**TESTBEDS.**~~

18 ~~(a) DEFINITIONS.—In this section:~~

19   ~~(1) APPROPRIATE COMMITTEES OF CON-~~

20 ~~GRESS.—The term "appropriate committees of Con-~~

21 ~~gress" means—~~

22   ~~(A) the Committee on Commerce, Science,~~

23 ~~and Transportation and the Committee on En-~~

24 ~~ergy and Natural Resources of the Senate; and~~

1   (B) the Committee on Science, Space, and

2   Technology of the House of Representatives.

3   (2) DIRECTOR.—The term "Director" means

4   the Director of the National Science Foundation.

5   (3) INSTITUTE.—The term "Institute" means

6   the Artificial Intelligence Safety Institute established

7   by section 101.

8   (4) SECRETARY.—The term "Secretary" means

9   the Secretary of Energy.

10   (5) UNDER SECRETARY.—The term "Under

11   Secretary" means the Under Secretary of Commerce

12   for Standards and Technology.

13   (b) PROGRAM REQUIRED.—Not later than 180 days

14 after the date of the enactment of this Act, the Under

15 Secretary shall, in coordination with the Secretary and the

16 Director, establish and commence carrying out a testbed

17 program to encourage collaboration and support partner-

18 ships between the National Laboratories, the National In-

19 stitute of Standards and Technology, the National Artifi-

20 cial Intelligence Research Resource pilot program estab-

21 lished by the Director of the National Science Foundation,

22 or any successor program, and public and private sector

23 entities, including companies of all sizes, to conduct re-

24 search and development, tests, evaluations, and risk as-

1 sessments of artificial intelligence systems, including

2 measurement methodologies developed by the Institute.

3   (c) ACTIVITIES.—In carrying out this program, the

4 Under Secretary shall, in coordination with the Sec-

5 retary—

6   (1) use the advanced computing resources,

7   testbeds, and expertise of the National Laboratories,

8   the Institute, the National Science Foundation, and

9   private sector entities to run tests and evaluations

10   on the capabilities and limitations of artificial intel-

11   ligence systems;

12   (2) use existing solutions to the maximum ex-

13   tent practicable;

14   (3) develop automated and reproducible tests,

15   evaluations, and risk assessments for artificial intel-

16   ligence systems to the extent that is practicable;

17   (4) assess the computational resources nec-

18   essary to run tests, evaluations, and risk assess-

19   ments of artificial intelligence systems;

20   (5) research methods to effectively minimize the

21   computational resources needed to run tests, evalua-

22   tions, and risk assessments of artificial intelligence

23   systems;

24   (6) consider developing tests, evaluations, and

25   risk assessments for artificial intelligence systems

1 that are designed for high-, medium-, and low-com-

2 putational intensity; and

3   (7) prioritize identifying and evaluating sce-

4 narios in which the artificial intelligence systems

5 tested or evaluated by a testbed could be deployed

6 in a way that poses security risks, and either estab-

7 lishing classified testbeds, or utilizing existing classi-

8 fied testbeds, at the National Laboratories if nec-

9 essary, including with respect to—

10   (A) autonomous offensive cyber capabili-

11   ties;

12   (B) cybersecurity vulnerabilities in the ar-

13   tificial intelligence software ecosystem and be-

14   yond;

15   (C) chemical, biological, radiological, nu-

16   clear, critical infrastructure, and energy-secu-

17   rity threats or hazards; and

18   (D) such other capabilities as the Under

19   Secretary determines necessary.

20 (d) CONSIDERATION GIVEN.—In carrying out the ac-

21 tivities required by subsection (c), the Under Secretary

22 shall, in coordination with the Secretary, take under con-

23 sideration the applicability of any tests, evaluations, and

24 risk assessments to artificial intelligence systems trained

1 using primarily biological sequence data, including those

2 systems used for gene synthesis.

3 (e) METRICS.—The Under Secretary, in collaboration

4 with the Secretary, shall develop metrics—

5   (1) to assess the effectiveness of the program in

6   encouraging collaboration and supporting partner-

7   ships as described in subsection (b); and

8   (2) to assess the impact of the program on pub-

9   lic and private sector integration and use of artificial

10   intelligence systems.

11 (f) USE OF EXISTING PROGRAM.—In carrying out

12 the program required by subsection (a), the Under Sec-

13 retary may, in collaboration with the Secretary and the

14 Director, use a program that was in effect on the day be-

15 fore the date of the enactment of this Act.

16 (g) EVALUATION AND FINDINGS.—Not later than 3

17 years after the start of this program, the Under Secretary

18 shall, in collaboration with the Secretary—

19   (1) evaluate the success of the program in en-

20   couraging collaboration and supporting partnerships

21   as described in subsection (b), using the metrics de-

22   veloped pursuant to subsection (e);

23   (2) evaluate the success of the program in en-

24   couraging public and private sector integration and

1 use of artificial intelligence systems by using the

2 metrics developed pursuant to subsection (e); and

3 (3) submit to the appropriate committees of

4 Congress the evaluation supported pursuant to para-

5 graph (1) and the findings of the Under Secretary,

6 the Secretary, and the Director with respect to the

7 testbed program.

8 (h) CONSULTATION.—In carrying out subsection (b),

9 the Under Secretary shall consult, as the Under Secretary

10 considers appropriate, with the following:

11 (1) Industry, including private artificial intel-

12 ligence laboratories, companies of all sizes, and rep-

13 resentatives from the United States financial sector.

14 (2) Academia and institutions of higher edu-

15 cation.

16 (3) Civil society.

17 (4) Third-party evaluators.

18 (i) ESTABLISHMENT OF FOUNDATION MODELS TEST

19 PROGRAM.—In carrying out the program under subsection

20 (b), the Under Secretary shall, acting through the Direc-

21 tor of the Institute and in coordination with the Secretary

22 of Energy, carry out a test program to provide vendors

23 of foundation models the opportunity to voluntarily test

24 foundation models across a range of modalities, such as

25 models that ingest and output text, images, audio, video,

1 software code, and mixed modalities, relative to the Artifi-

2 cial Intelligence Risk Management Framework, by—

3 (1) conducting research and regular testing to

4 improve and benchmark the accuracy, efficacy, and

5 bias of foundation models;

6 (2) conducting research to identify key capabili-

7 ties, limitations, and unexpected behaviors of foun-

8 dation models;

9 (3) identifying and evaluating scenarios in

10 which these models could pose risks;

11 (4) establishing reference use cases for founda-

12 tion models and performance criteria for assessing

13 each use case, including accuracy, efficacy, and bias

14 metrics;

15 (5) enabling developers and deployers of foun-

16 dation models to evaluate such systems for risks, in-

17 cidents, and vulnerabilities if deployed in such use

18 cases;

19 (6) coordinating public evaluations, which may

20 include prizes and challenges, to evaluate foundation

21 models; and

22 (7) as the Under Secretary and the Secretary

23 consider appropriate, producing public-facing reports

24 of the findings from such testing for a general audi-

25 ence.

1 (j) RULE OF CONSTRUCTION.—Nothing in this sec-

2 tion shall be construed to require a person to disclose any

3 information, including information—

4   (1) relating to a trade secret or other protected

5   intellectual property right;

6   (2) that is confidential business information; or

7   (3) that is privileged.

8 **SEC. 103. NATIONAL INSTITUTE OF STANDARDS AND TECH-**

9   **NOLOGY AND DEPARTMENT OF ENERGY**

10   **TESTBED TO IDENTIFY, TEST, AND SYN-**

11   **THESIZE NEW MATERIALS.**

12 (a) TESTBED AUTHORIZED.—The Secretary of Com-

13 merce, acting through the Director of the National Insti-

14 tute of Standards and Technology, and the Secretary of

15 Energy shall jointly establish a testbed to identify, test,

16 and synthesize new materials to advance materials science

17 and to support advanced manufacturing for the benefit of

18 the United States economy through the use of artificial

19 intelligence, autonomous laboratories, and artificial intel-

20 ligence integrated with emerging technologies, such as

21 quantum hybrid computing and robotics.

22 (b) SUPPORT FOR ACCELERATED TECHNOLOGIES.—

23 The Secretary of Commerce and the Secretary of Energy

24 shall ensure that technologies accelerated using the

25 testbed established pursuant to subsection (a) are sup-

1 ported by advanced algorithms and models, uncertainty

2 quantification, and software and workforce development

3 tools to produce benchmark data, model comparison tools,

4 and best practices guides.

5 (c) PUBLIC-PRIVATE PARTNERSHIPS.—In carrying

6 out subsection (a), the Secretary of Commerce and the

7 Secretary of Energy shall, in consultation with industry,

8 civil society, and academia, enter into such public-private

9 partnerships as the Secretaries jointly determine appro-

10 priate.

11 (d) RESOURCES.—In carrying out subsection (a), the

12 Secretaries may use resources from National Laboratories

13 and the private sector.

14 **SEC. 104. NATIONAL SCIENCE FOUNDATION AND DEPART-**

15 **MENT OF ENERGY COLLABORATION TO MAKE**

16 **SCIENTIFIC DISCOVERIES THROUGH THE**

17 **USE OF ARTIFICIAL INTELLIGENCE.**

18 (a) IN GENERAL.—The Director of the National

19 Science Foundation (referred to in this section as the "Di-

20 rector") and the Secretary of Energy (referred to in this

21 section as the "Secretary") shall collaborate to support

22 new translational scientific discoveries and advancements

23 for the benefit of the economy of the United States

24 through the use of artificial intelligence, including artifi-

1 cial intelligence integrated with emerging technologies,

2 such as quantum hybrid computing and robotics.

3 (b) PUBLIC-PRIVATE PARTNERSHIPS.—In carrying

4 out subsection (a), the Director and the Secretary shall

5 enter into such public-private partnerships as the Director

6 and the Secretary jointly determine appropriate.

7 (c) RESOURCES.—In carrying out subsection (a), the

8 Director and the Secretary may accept and use resources

9 from the National Laboratories, resources from the pri-

10 vate sector, and academic resources.

11 **SEC. 105. PROGRESS REPORT.**

12 Not later than 1 year after the date of the enactment

13 of this Act, the Director of the Artificial Intelligence Safe-

14 ty Institute shall, in coordination with the Secretary of

15 Commerce and the Secretary of Energy, submit to Con-

16 gress a report on the implementation of this subtitle.

17 **Subtitle B—International**

18 **Cooperation**

19 **SEC. 111. INTERNATIONAL COALITION ON INNOVATION, DE-**

20 **VELOPMENT, AND HARMONIZATION OF**

21 **STANDARDS WITH RESPECT TO ARTIFICIAL**

22 **INTELLIGENCE.**

23 (a) IN GENERAL.—The Secretary of Commerce, the

24 Secretary of State, and the Director of the Office of

25 Science and Technology Policy (in this section referred to

1 as the "Director"), in consultation with the heads of rel-

2 evant agencies, shall jointly seek to form an alliance or

3 coalition with like-minded governments of foreign coun-

4 tries—

5   (1) to cooperate on approaches to innovation

6   and advancements in artificial intelligence and eco-

7   systems for artificial intelligence;

8   (2) to coordinate on development and use of

9   interoperable international standards or harmoni-

10   zation of standards with respect to artificial intel-

11   ligence;

12   (3) to promote adoption of common artificial in-

13   telligence standards;

14   (4) to develop the government-to-government

15   infrastructure needed to facilitate coordination of co-

16   herent global application of artificial intelligence

17   safety standards, including, where appropriate, put-

18   ting in place agreements for information sharing be-

19   tween governments; and

20   (5) to involve private-sector stakeholders from

21   partner countries to help inform coalition partners

22   on recent developments in artificial intelligence and

23   associated standards development.

24 (b) CRITERIA FOR PARTICIPATION.—In forming an

25 alliance or coalition of like-minded governments of foreign

1 countries under subsection (a), the Secretary of Com-

2 merce, the Secretary of State, and the Director, in con-

3 sultation with the heads of relevant agencies, shall jointly

4 establish technology trust criteria—

5   (1) to ensure all participating countries that

6   have a high level of scientific and technological ad-

7   vancement;

8   (2) to ensure all participating countries commit

9   to using open international standards; and

10   (3) to support the governance principles for

11   international standards as detailed in the World

12   Trade Organization Agreement on Technical Bar-

13   riers to Trade, done at Geneva April 12, 1979, on

14   international standards, such as transparency, open-

15   ness, and consensus-based decision-making.

16 (c) CONSULTATION ON INNOVATION AND ADVANCE-

17 MENTS IN ARTIFICIAL INTELLIGENCE.—In forming an al-

18 liance or coalition under subsection (a), the Director, the

19 Secretary of Commerce, and the Secretary of State shall

20 consult with the Secretary of Energy and the Director of

21 the National Science Foundation on approaches to innova-

22 tion and advancements in artificial intelligence.

23 (d) SECURITY AND PROTECTION OF INTELLECTUAL

24 PROPERTY.—The Director, the Secretary of Commerce,

25 and the Secretary of State shall jointly ensure that an alli-

1 ance or coalition formed under subsection (a) is only
2 formed with countries that—

3   (1) have in place sufficient intellectual property
4   protections, safety standards, and risk management
5   approaches relevant to innovation and artificial intel-
6   ligence; and

7   (2) develop and coordinate research security
8   measures, export controls, and intellectual property
9   protections relevant to innovation, development, and
10   standard-setting relating to artificial intelligence.

11 (c) RULE OF CONSTRUCTION.—Nothing in this sec-
12 tion shall be construed to prohibit anyone from partici-
13 pating in other international standards bodies.

14 **SEC. 112. REQUIREMENT TO SUPPORT BILATERAL AND**
15 **MULTILATERAL ARTIFICIAL INTELLIGENCE**
16 **RESEARCH COLLABORATIONS.**

17 (a) IN GENERAL.—The Director of the National
18 Science Foundation shall support bilateral and multilat-
19 eral collaborations to facilitate innovation in research and
20 development of artificial intelligence.

21 (b) ALIGNMENT WITH PRIORITIES.—The Director
22 shall ensure that collaborations supported under sub-
23 section (a) align with the priorities of the Foundation and
24 United States research community and have the potential

1 to benefit United States prosperity, security, health, and

2 well-being.

3 (c) REQUIREMENTS.—The Director shall ensure that

4 collaborations supported under subsection (a)—

5 (1) support innovation and advancement in re-

6 search on the development and use of artificial intel-

7 ligence;

8 (2) facilitate international collaboration on in-

9 novation and advancement in artificial intelligence

10 research and development, including data sharing,

11 expertise, and resources; and

12 (3) leverage existing National Science Founda-

13 tion programs, such as the National Science Foun-

14 dation-supported National Artificial Intelligence Re-

15 search Institutes and Global Centers programs.

16 (d) COORDINATION OF SECURITY MEASURES AND

17 EXPORT CONTROLS.—When entering into agreements in

18 order to support collaborations pursuant to subsection (a),

19 the Director shall ensure that participating countries have

20 developed and coordinated security measures and export

21 controls to protect intellectual property and research and

22 development.

~~Subtitle C—Identifying Regulatory Barriers to Innovation~~

~~SEC. 121. COMPTROLLER GENERAL OF THE UNITED STATES IDENTIFICATION OF RISKS AND OB-STACLES RELATING TO ARTIFICIAL INTEL-LIGENCE AND FEDERAL AGENCIES.~~

~~(a) REPORT REQUIRED.—Not later than 1 year after the date of the enactment of this Act, the Comptroller General of the United States shall submit to Congress a report on regulatory impediments to innovation in artificial intelligence systems.~~

~~(b) CONTENTS.—The report submitted pursuant to subsection (a) shall include the following:~~

~~(1) Significant examples of Federal statutes and regulations that directly affect the innovation of artificial intelligence systems, including the ability of companies of all sizes to compete in artificial intelligence, which should also account for the effect of voluntary standards and best practices developed by the Federal Government.~~

~~(2) An assessment of challenges that Federal agencies face in the enforcement of provisions of law identified pursuant to paragraph (1).~~

~~(3) An evaluation of the progress in government adoption of artificial intelligence and use of artificial~~

1 intelligence to improve the quality of government

2 services.

3 (4) Based on the findings of the Comptroller

4 General with respect to paragraphs (1) through (4),

5 such recommendations as the Comptroller General

6 may have for legislative or administrative action to

7 increase the rate of innovation in artificial intel-

8 ligence systems.

TITLE II—ARTIFICIAL INTEL-
LIGENCE RESEARCH, DEVEL-
OPMENT, CAPACITY BUILD-
ING ACTIVITIES

SEC. 201. PUBLIC DATA FOR ARTIFICIAL INTELLIGENCE

SYSTEMS.

15 (a) LIST OF PRIORITIES.—

16 (1) IN GENERAL.—To expedite the development

17 of artificial intelligence systems in the United

18 States, the Director of the Office of Science and

19 Technology Policy shall, acting through the National

20 Science and Technology Council and the Interagency

21 Committee established or designated pursuant to

22 section 5103 of the National Artificial Intelligence

23 Initiative Act of 2020 (15 U.S.C. 9413), develop a

24 list of priorities for Federal investment in creating

25 or improving curated, publicly available Federal Gov-

1 ~~ernment data for training and evaluating artificial~~

2 ~~intelligence systems.~~

3 ~~(2) REQUIREMENTS.—~~

4 ~~(A) IN GENERAL.—The list developed pur-~~

5 ~~suant to paragraph (1) shall—~~

6 ~~(i) prioritize data that will advance~~

7 ~~novel artificial intelligence systems in the~~

8 ~~public interest; and~~

9 ~~(ii) prioritize datasets unlikely to inde-~~

10 ~~pendently receive sufficient private sector~~

11 ~~support to enable their creation, absent~~

12 ~~Federal funding.~~

13 ~~(B) DATASETS IDENTIFIED.—In carrying~~

14 ~~out subparagraph (A)(ii), the Director shall~~

15 ~~identify 20 datasets to be prioritized.~~

16 ~~(3) CONSIDERATIONS.—In developing the list~~

17 ~~under paragraph (1), the Director shall consider the~~

18 ~~following:~~

19 ~~(A) Applicability to the initial list of soci-~~

20 ~~etal, national, and geostrategic challenges set~~

21 ~~forth by subsection (b) of section 10387 of the~~

22 ~~Research and Development, Competition, and~~

23 ~~Innovation Act (42 U.S.C. 19107), or any suc-~~

24 ~~cessor list.~~

1   (B) Applicability to the initial list of key

2   technology focus areas set forth by subsection

3   (c) of such section, or any successor list.

4   (C) Applicability to other major United

5   States economic sectors, such as agriculture,

6   health care, transportation, manufacturing,

7   communications, weather services, and positive

8   utility to small and medium United States busi-

9   nesses.

10   (D) Opportunities to improve datasets in

11   effect before the date of the enactment of this

12   Act.

13   (E) Inclusion of data representative of the

14   entire population of the United States.

15   (F) Potential national security threats to

16   releasing datasets, consistent with the United

17   States Government approach to data flows.

18   (G) Requirements of laws in effect.

19   (H) Applicability to the priorities listed in

20   the National Artificial Intelligence Research

21   and Development Strategic Plan of the Na-

22   tional Science and Technology Council, dated

23   October 2016.

24   (I) Ability to use data already made avail-

25   able to the National Artificial Intelligence Re-

1 search Resource Pilot program or any successor

2 program.

3 (4) PUBLIC INPUT.—Before finalizing the list

4 required by paragraph (1), the Director shall imple-

5 ment public comment procedures for receiving input

6 and comment from private industry, academia, civil

7 society, and other relevant stakeholders.

8 (b) NATIONAL SCIENCE AND TECHNOLOGY COUNCIL

9 AGENCIES.—The head of each agency with a representa-

10 tive included in the Interagency Committee pursuant to

11 section 5103(c) of the National Artificial Intelligence Ini-

12 tiative Act of 2020 (15 U.S.C. 9413(c)) or the heads of

13 multiple agencies with a representative included in the

14 Interagency Committee working cooperatively, consistent

15 with the missions or responsibilities of each Executive

16 agency—

17 (1) subject to the availability of appropriations,

18 shall award grants or otherwise establish incentives,

19 through new or existing programs, for the creation

20 or improvement of curated datasets identified in the

21 list developed pursuant to subsection (a)(1), includ-

22 ing methods for addressing data scarcity;

23 (2) may establish or leverage existing initia-

24 tives, including public-private partnerships, to en-

38

1 courage private sector cost-sharing in the creation or

2 improvement of such datasets;

3 (3) may apply the priorities set forth in the list

4 developed pursuant to subsection (a)(1) to the enact-

5 ment of Federal public access and open government

6 data policies;

7 (4) in carrying out this subsection, shall ensure

8 consistency with Federal provisions of law relating

9 to privacy, including the technology and privacy

10 standards applied to the National Secure Data Serv-

11 ice under section 10375(f) of the Research and De-

12 velopment, Competition, and Innovation Act (42

13 U.S.C. 19085(f)); and

14 (5) in carrying out this subsection, shall ensure

15 data sharing is limited with any country that the

16 Secretary of Commerce, in consultation with the

17 Secretary of Defense, the Secretary of State, and

18 the Director of National Intelligence, determines to

19 be engaged in conduct that is detrimental to the na-

20 tional security or foreign policy of the United States.

21 (c) AVAILABILITY OF DATASETS.—Datasets that are

22 created or improved by Federal agencies may be made

23 available to the National Artificial Intelligence Research

24 Resource pilot program established by the Director of the

25 National Science Foundation in accordance with Executive

•S 4178 RS

1 Order 14110 (88 Fed. Reg. 75191; relating to safe, se-

2 cure, and trustworthy development and use of artificial in-

3 telligence), or any successor program.

4 (d) RULE OF CONSTRUCTION.—Nothing in this sub-

5 section shall be construed to require the Federal Govern-

6 ment or other contributors to disclose any information—

7 (1) relating to a trade secret or other protected

8 intellectual property right;

9 (2) that is confidential business information; or

10 (3) that is privileged.

11 **SEC. 202. FEDERAL GRAND CHALLENGES IN ARTIFICIAL IN-**

12 **TELLIGENCE.**

13 (a) LIST OF PRIORITIES FOR FEDERAL GRAND

14 CHALLENGES IN ARTIFICIAL INTELLIGENCE.—

15 (1) LIST REQUIRED.—Not later than 1 year

16 after the date of the enactment of this Act, the Di-

17 rector of the Office of Science and Technology Policy

18 shall, acting through the National Science and Tech-

19 nology Council and the Interagency Committee es-

20 tablished or designated pursuant to section 5103 of

21 the National Artificial Intelligence Initiative Act of

22 2020 (15 U.S.C. 9413), in consultation with indus-

23 try, civil society, and academia, establish a list of

24 priorities for Federal grand challenges in artificial

25 intelligence that seek—

1   (A) to expedite the development of artifi-

2   cial intelligence systems in the United States;

3   and

4   (B) to stimulate artificial intelligence re-

5   search, development, and commercialization

6   that solves or advances specific, well-defined,

7   and measurable challenges.

8   (2) CONTENTS.—The list established pursuant

9 to paragraph (1) may include the following prior-

10 ities:

11   (A) To overcome challenges with engineer-

12   ing of and applied research on microelectronics,

13   including through integration of artificial intel-

14   ligence with emerging technologies, such as ma-

15   chine learning and quantum computing, or with

16   respect to the physical limits on transistors,

17   electrical interconnects, and memory elements.

18   (B) To promote transformational or long-

19   term advancements in computing and artificial

20   intelligence technologies through—

21   (i) next-generation algorithm design;

22   (ii) next-generation compute capa-

23   bility;

24   (iii) generative and adaptive artificial

25   intelligence for design applications;

1   (iv) photonics-based microprocessors

2   and optical communication networks, in-

3   cluding electrophotonics;

4   (v) the chemistry and physics of new

5   materials;

6   (vi) energy use or energy efficiency;

7   (vii) techniques to establish cryp-

8   tographically secure content provenance in-

9   formation; or

10   (viii) safety and controls for artificial

11   intelligence applications.

12   (C) To develop artificial intelligence solu-

13   tions, including through integration among

14   emerging technologies such as quantum com-

15   puting and machine learning, to overcome bar-

16   riers relating to innovations in advanced manu-

17   facturing in the United States, including areas

18   such as—

19   (i) materials, nanomaterials, and com-

20   posites;

21   (ii) rapid, complex design;

22   (iii) sustainability and environmental

23   impact of manufacturing operations;

24   (iv) predictive maintenance of machin-

25   ery;

1   (v) improved part quality;

2   (vi) process inspections;

3   (vii) worker safety; and

4   (viii) robotics.

5   (D) To develop artificial intelligence solu-

6   tions in sectors of the economy, such as expand-

7   ing the use of artificial intelligence in maritime

8   vessels, including in navigation and in the de-

9   sign of propulsion systems and fuels.

10   (E) To develop artificial intelligence solu-

11 tions to improve border security, including solu-

12 tions relevant to the detection of fentanyl, illicit

13 contraband, and other illegal activities.

14   (3) PERIODIC UPDATES.—The Director shall

15 update the list established pursuant to paragraph

16 (1) periodically as the Director determines nec-

17 essary.

18   (b) FEDERAL INVESTMENT INITIATIVES RE-

19 QUIRED.—Subject to the availability of appropriations, the

20 head of each agency with a representative on the Inter-

21 agency Committee pursuant to section 5103(c) of the Na-

22 tional Artificial Intelligence Initiative Act of 2020 (15

23 U.S.C. 9413(c)) or the heads of multiple agencies with a

24 representative on the Interagency Committee working co-

25 operatively, shall, consistent with the missions or respon-

1 sibilities of each agency, establish 1 or more prize competi-

2 tions under section 24 of the Stevenson-Wydler Tech-

3 nology Innovation Act of 1980 (15 U.S.C. 3719), chal-

4 lenge-based acquisitions, or other research and develop-

5 ment investments that each agency head deems appro-

6 priate consistent with the list of priorities established pur-

7 suant to subsection (a)(1).

8 (c) TIMING AND ANNOUNCEMENTS OF FEDERAL IN-

9 VESTMENT INITIATIVES.—The President, acting through

10 the Director, shall ensure that, not later than 1 year after

11 the date on which the Director establishes the list required

12 by subsection (a)(1), at least 3 prize competitions, chal-

13 lenge-based acquisitions, or other research and develop-

14 ment investments are announced by heads of Federal

15 agencies under subsection (b).

16 (d) REQUIREMENTS.—Each head of an agency car-

17 rying out an investment initiative under subsection (b)

18 shall ensure that—

19 (1) for each prize competition or investment ini-

20 tiative carried out by the agency under such sub-

21 section, there is—

22 (A) a positive impact on the economic com-

23 petitiveness of the United States;

24 (B) a benefit to United States industry;

1   ~~(C) to the extent possible, leveraging of the~~

2   ~~resources and expertise of industry and philan-~~

3   ~~thropic partners in shaping the investments;~~

4   ~~and~~

5   ~~(D) in a case involving development and~~

6   ~~manufacturing, use of advanced manufacturing~~

7   ~~in the United States; and~~

8   ~~(2) all research conducted for purposes of the~~

9 ~~investment initiative is conducted in the United~~

10 ~~States.~~

11 ***SECTION 1. SHORT TITLE; TABLE OF CONTENTS.***

12 *(a) SHORT TITLE.—This Act may be cited as the "Fu-*

13 *ture of Artificial Intelligence Innovation Act of 2024".*

14 *(b) TABLE OF CONTENTS.—The table of contents for*

15 *this Act is as follows:*

SEC. 2. SENSE OF CONGRESS.

It is the sense of Congress that policies affecting artificial intelligence should maximize the potential, development, and use of artificial intelligence to benefit all private and public stakeholders.

TITLE I—VOLUNTARY ARTIFICIAL INTELLIGENCE STANDARDS, METRICS, EVALUATION TOOLS, TESTBEDS, AND INTERNATIONAL COOPERATION

SEC. 100. DEFINITIONS.

In this title:

(1) ARTIFICIAL INTELLIGENCE.—The term "artificial intelligence" has the meaning given such term in section 5002 of the National Artificial Intelligence Initiative Act of 2020 (15 U.S.C. 9401).

(2) ARTIFICIAL INTELLIGENCE MODEL.—The term "artificial intelligence model" means a component of an artificial intelligence system that is—

(A) derived using mathematical, computational, statistical, or machine-learning techniques; and

(B) used as part of an artificial intelligence system to produce outputs from a given set of inputs.

1   *(3) ARTIFICIAL INTELLIGENCE SYSTEM.—The*

2   *term "artificial intelligence system" means an engi-*

3   *neered or machine-based system that—*

4   *(A) can, for a given set of objectives, gen-*

5   *erate outputs such as predictions, recommenda-*

6   *tions, or decisions influencing real or virtual en-*

7   *vironments; and*

8   *(B) is designed to operate with varying lev-*

9   *els of autonomy.*

10 *(4) CRITICAL INFRASTRUCTURE.—The term*

11 *"critical infrastructure" has the meaning given such*

12 *term in section 1016(e) of the Uniting and Strength-*

13 *ening America by Providing Appropriate Tools Re-*

14 *quired to Intercept and Obstruct Terrorism (USA*

15 *PATRIOT ACT) Act of 2001 (42 U.S.C. 5195c(e)).*

16 *(5) FEDERAL LABORATORY.—The term "Federal*

17 *laboratory" has the meaning given such term in sec-*

18 *tion 4 of the Stevenson-Wydler Technology Innovation*

19 *Act of 1980 (15 U.S.C. 3703).*

20 *(6) FOUNDATION MODEL.—The term "foundation*

21 *model" means an artificial intelligence model trained*

22 *on broad data at scale and is adaptable to a wide*

23 *range of downstream tasks.*

24 *(7) NATIONAL LABORATORY.—The term "Na-*

25 *tional Laboratory" has the meaning given such term*

1   *in section 2 of the Energy Policy Act of 2005 (42*

2   *U.S.C. 15801).*

3   *(8) TESTBED.—The term "testbed" means a fa-*

4   *cility or mechanism equipped for conducting rigorous,*

5   *transparent, and replicable testing of tools and tech-*

6   *nologies, including artificial intelligence systems, to*

7   *help evaluate the functionality, trustworthiness,*

8   *usability, and performance of those tools or tech-*

9   *nologies.*

Subtitle A—Artificial Intelligence Safety Institute and Testbeds

12 **SEC. 101. ARTIFICIAL INTELLIGENCE SAFETY INSTITUTE.**

13   *The National Institute of Standards and Technology*

14 *Act (15 U.S.C. 271 et seq.) is amended by inserting after*

15 *section 22A (15 U.S.C. 278h–1) the following:*

16 **"SEC. 22B. ARTIFICIAL INTELLIGENCE SAFETY INSTITUTE.**

17   *"(a) DEFINITIONS.—In this section:*

18   *"(1) AGENCY.—The term 'agency' has the mean-*

19   *ing given the term 'Executive agency' in section 105*

20   *of title 5, United States Code.*

21   *"(2) ARTIFICIAL INTELLIGENCE.—The term 'ar-*

22   *tificial intelligence' has the meaning given such term*

23   *in section 5002 of the National Artificial Intelligence*

24   *Initiative Act of 2020 (15 U.S.C. 9401).*

1   *"(3) ARTIFICIAL INTELLIGENCE BLUE-*

2   *TEAMING.—The term 'artificial intelligence blue-*

3   *teaming' means an effort to conduct operational vul-*

4   *nerability evaluations and provide mitigation tech-*

5   *niques to entities who have a need for an independent*

6   *technical review of the security posture of an artifi-*

7   *cial intelligence system.*

8   *"(4) ARTIFICIAL INTELLIGENCE RED-TEAMING.—*

9   *The term 'artificial intelligence red-teaming' means*

10   *structured adversarial testing efforts of an artificial*

11   *intelligence system.*

12   *"(5) FEDERAL LABORATORY.—The term 'Federal*

13   *laboratory' has the meaning given such term in sec-*

14   *tion 4 of the Stevenson-Wydler Technology Innovation*

15   *Act of 1980 (15 U.S.C. 3703).*

16   *"(6) FOUNDATION MODEL.—The term 'founda-*

17   *tion model' means an artificial intelligence model*

18   *trained on broad data at scale and is adaptable to a*

19   *wide range of downstream tasks.*

20   *"(7) SYNTHETIC CONTENT.—The term 'synthetic*

21   *content' means information, such as images, videos,*

22   *audio clips, and text, that has been significantly*

23   *modified or generated by algorithms, including by an*

24   *artificial intelligence system.*

1   *"(8) TESTBED.—The term 'testbed' means a fa-*

2   *cility or mechanism equipped for conducting rigorous,*

3   *transparent, and replicable testing of tools and tech-*

4   *nologies, including artificial intelligence systems, to*

5   *help evaluate the functionality, trustworthiness,*

6   *usability, and performance of those tools or tech-*

7   *nologies.*

8   *"(9) WATERMARKING.—The term 'watermarking'*

9   *means the act of embedding information that is in-*

10 *tended to be difficult to remove, into outputs gen-*

11 *erated by artificial intelligence systems or in original*

12 *content, including outputs such as text, images,*

13 *audio, videos, software code, or any other digital con-*

14 *tent or data, for the purposes of verifying the authen-*

15 *ticity of the output or the identity or characteristics*

16 *of its provenance, modifications, or conveyance.*

17 *"(b) ESTABLISHMENT OF ARTIFICIAL INTELLIGENCE*

18 *SAFETY INSTITUTE.—*

19   *"(1) IN GENERAL.—Not later than 90 days after*

20 *the date of the enactment of the Future of Artificial*

21 *Intelligence Innovation Act of 2024, the Director shall*

22 *establish an institute on artificial intelligence within*

23 *the Institute.*

1   "(2) DESIGNATION.—The institute established

2   pursuant to paragraph (1) shall be known as the 'Ar-

3   tificial Intelligence Safety Institute'.

4   "(3) MISSION.—The mission of the Artificial In-

5   telligence Safety Institute is to assist the private sec-

6   tor and agencies in developing voluntary best prac-

7   tices for the robust assessment of artificial intelligence

8   systems, which may be contributed to or inform the

9   work on such practices in standards development or-

10   ganizations.

11   "(c) FUNCTIONS.—

12   "(1) IN GENERAL.—The functions of the Artifi-

13   cial Intelligence Safety Institute, which the Artificial

14   Intelligence Safety Institute shall carry out in coordi-

15   nation with the laboratories of the Institute, include

16   the following:

17   "(A) Using publicly available or voluntarily

18   provided information, assessing artificial intel-

19   ligence systems and developing best practices for

20   reliable and secure development, deployment, and

21   use of artificial intelligence technology.

22   "(B) Supporting artificial intelligence red-

23   teaming, sharing best practices, and coordi-

24   nating on building testbeds and test environ-

1   *ments with allies and international partners of*

2   *the United States.*

3   *"(C) Developing and publishing physical*

4   *and cybersecurity tools, methodologies, best prac-*

5   *tices, voluntary guidelines, and other supporting*

6   *information to assist persons who maintain sys-*

7   *tems used to create or train artificial intelligence*

8   *models with discovering and mitigating*

9   *vulnerabilities and attacks, including manipula-*

10   *tion through data poisoning, including those that*

11   *may be exploited by foreign adversaries.*

12   *"(D) Establishing artificial intelligence*

13   *blue-teaming capabilities to support mitigation*

14   *approaches and partnering with industry to ad-*

15   *dress the reliability of artificial intelligence sys-*

16   *tems.*

17   *"(E) Developing tools, methodologies, best*

18   *practices, and voluntary guidelines for detecting*

19   *synthetic content, authenticating content and*

20   *tracking of the provenance of content, labeling*

21   *original and synthetic content, such as by*

22   *watermarking, and evaluating software and sys-*

23   *tems relating to detection and labeling of syn-*

24   *thetic content.*

1   *"(F) Coordinating or developing metrics*

2   *and methodologies for testing artificial intel-*

3   *ligence systems, including the following:*

4   *"(i) Cataloging existing artificial in-*

5   *telligence metrics and evaluation methodolo-*

6   *gies used in industry and academia.*

7   *"(ii) Testing the efficacy of existing*

8   *metrics and evaluations.*

9   *"(G) Coordinating with counterpart inter-*

10   *national institutions, partners, and allies, to*

11   *support global interoperability in the develop-*

12   *ment of research and testing of standards relat-*

13   *ing to artificial intelligence.*

14 *"(d) ARTIFICIAL INTELLIGENCE SAFETY INSTITUTE*

15 *CONSORTIUM.—*

16   *"(1) ESTABLISHMENT.—*

17   *"(A) IN GENERAL.—Not later than 180*

18   *days after the date of the enactment of this Act,*

19   *the Director shall establish a consortium of stake-*

20   *holders from academic or research communities,*

21   *Federal laboratories, private industry, including*

22   *companies of all sizes with different roles in the*

23   *use of artificial intelligence systems, including*

24   *developers, deployers, evaluators, users, and civil*

25   *society with expertise in matters relating to arti-*

1   *ficial intelligence to support the Artificial Intel-*

2   *ligence Safety Institute in carrying out the func-*

3   *tions set forth under subsection (c).*

4   *"(B) DESIGNATION.—The consortium estab-*

5   *lished pursuant to subparagraph (A) shall be*

6   *known as the 'Artificial Intelligence Safety Insti-*

7   *tute Consortium'.*

8   *"(2) CONSULTATION.—The Director shall consult*

9   *with the consortium established under this subsection*

10   *not less frequently than quarterly.*

11   *"(3) ANNUAL REPORTS TO CONGRESS.—Not later*

12   *than 1 year after the date of the enactment of the Fu-*

13   *ture of Artificial Intelligence Innovation Act of 2024*

14   *and not less frequently than once each year thereafter,*

15   *the Director shall submit to the Committee on Com-*

16   *merce, Science, and Transportation of the Senate and*

17   *the Committee on Science, Space, and Technology of*

18   *the House of Representatives a report summarizing*

19   *the contributions of the members of the consortium es-*

20   *tablished under this subsection in support the efforts*

21   *of the Artificial Intelligence Safety Institute.*

22   *"(e) VOLUNTARY ARTIFICIAL INTELLIGENCE TESTING*

23   *STANDARDS.—In carrying out the functions under sub-*

24   *section (c), the Director shall support and contribute to the*

25   *development of voluntary, consensus-based technical stand-*

ards for testing artificial intelligence system components,

including by addressing, as the Director considers appro-

priate, the following:

> *"(1) Physical infrastructure for training or de-*
>
> *veloping artificial intelligence models and systems,*
>
> *including cloud infrastructure.*
>
> *"(2) Physical infrastructure for operating artifi-*
>
> *cial intelligence systems, including cloud infrastruc-*
>
> *ture.*
>
> *"(3) Data for training artificial intelligence*
>
> *models.*
>
> *"(4) Data for evaluating the functionality and*
>
> *trustworthiness of trained artificial intelligence mod-*
>
> *els and systems.*
>
> *"(5) Trained or partially trained artificial intel-*
>
> *ligence models and any resulting software systems or*
>
> *products.*
>
> *"(6) Human-in-the-loop testing of artificial in-*
>
> *telligence models and systems.*

"(f) MATTERS RELATING TO DISCLOSURE AND AC-

CESS.—

> *"(1) FOIA EXEMPTION.—Any confidential con-*
>
> *tent, as deemed confidential by the contributing pri-*
>
> *vate sector person, shall be exempt from public disclo-*

1 sure under section 552(b)(3) of title 5, United States

2 Code.

3   *"(2) LIMITATION ON ACCESS TO CONTENT.—Ac-

4 cess to a contributing private sector person's volun-

5 tarily provided confidential content, as deemed con-

6 fidential by the contributing private sector person

7 shall be limited to the private sector person and the

8 Artificial Intelligence Safety Institute.

9   *"(3) AGGREGATED INFORMATION.—The Director

10 may make aggregated, deidentified information avail-

11 able to contributing companies, the public, and other

12 agencies, as the Director considers appropriate, in

13 support of the purposes of this section.

14 "(g) RULE OF CONSTRUCTION.—Nothing in this sec-

15 tion shall be construed to provide the Director any enforce-

16 ment authority that was not in effect on the day before the

17 date of the enactment of the Future of Artificial Intelligence

18 Innovation Act of 2024.

19 "(h) PROHIBITION ON ACCESS TO RESOURCES FOR

20 ENTITIES UNDER CONTROL OF CERTAIN FOREIGN GOVERN-

21 MENTS.—

22   *"(1) IN GENERAL.—An entity under the owner-

23 ship, control, or influence of the government of a cov-

24 ered nation may not access any of the resources of the

25 Artificial Intelligence Safety Institute.

1   *"(2) CRITERIA FOR IDENTIFICATION.—The Di-*

2   *rector, working with the heads of the relevant Federal*

3   *agencies, shall establish criteria to determine if any*

4   *entity that seeks to utilize the resources of the Artifi-*

5   *cial Intelligence Safety Institute is under the owner-*

6   *ship, control, or influence of the government of a cov-*

7   *ered nation.*

8   *"(3) DEFINITIONS.—In this subsection:*

9   *"(A) COVERED NATION.—The term 'covered*

10   *nation' has the meaning given that term in sec-*

11   *tion 4872 of title 10, United States Code.*

12   *"(B) OWNERSHIP, CONTROL, OR INFLUENCE*

13   *OF THE GOVERNMENT OF A COVERED NATION.—*

14   *The term 'ownership, control, or influence of the*

15   *government of a covered nation', with respect to*

16   *an entity, means the government of a covered na-*

17   *tion—*

18   *"(i) has the power to direct or decide*

19   *matters affecting the entity's management*

20   *or operations in a manner that could—*

21   *"(I) result in unauthorized access*

22   *to classified information; or*

23   *"(II) adversely affect performance*

24   *of a contract or agreement requiring*

25   *access to classified information; and*

1   *"(ii) exercises that power—*

2   *"(I) directly or indirectly;*

3   *"(II) through ownership of the en-*

4   *tity's securities, by contractual ar-*

5   *rangements, or other similar means;*

6   *"(III) by the ability to control or*

7   *influence the election or appointment*

8   *of one or more members to the entity's*

9   *governing board (such as the board of*

10   *directors, board of managers, or board*

11   *of trustees) or its equivalent; or*

12   *"(IV) prospectively (such as by*

13   *not currently exercising the power, but*

14   *could).".*

15 **SEC. 102. INTERAGENCY COORDINATION AND PROGRAM TO**

16   **FACILITATE ARTIFICIAL INTELLIGENCE**

17   **TESTBEDS.**

18   *(a) DEFINITIONS.—In this section:*

19   *(1) APPROPRIATE COMMITTEES OF CONGRESS.—*

20   *The term "appropriate committees of Congress"*

21   *means—*

22   *(A) the Committee on Commerce, Science,*

23   *and Transportation and the Committee on En-*

24   *ergy and Natural Resources of the Senate; and*

1   *(B) the Committee on Science, Space, and*

2   *Technology of the House of Representatives.*

3   *(2) DIRECTOR.—The term "Director" means the*

4   *Director of the National Science Foundation.*

5   *(3) INSTITUTE.—The term "Institute" means the*

6   *National Institute of Standards and Technology.*

7   *(4) SECRETARY.—The term "Secretary" means*

8   *the Secretary of Energy.*

9   *(5) UNDER SECRETARY.—The term "Under Sec-*

10   *retary" means the Under Secretary of Commerce for*

11   *Standards and Technology.*

12   *(b) PROGRAM REQUIRED.—Not later than 1 year after*

13 *the date of the enactment of this Act, the Under Secretary*

14 *and the Secretary, in coordination with the Director, shall*

15 *jointly establish a testbed program to encourage collabora-*

16 *tion and support partnerships between the National Lab-*

17 *oratories, Federal laboratories, the National Institute of*

18 *Standards and Technology, the National Artificial Intel-*

19 *ligence Research Resource pilot program established by the*

20 *Director, or any successor program, and public and private*

21 *sector entities, including companies of all sizes, to conduct*

22 *tests, evaluations, and security or vulnerability risk assess-*

23 *ments, and to support research and development, of artifi-*

24 *cial intelligence systems, including measurement methodolo-*

1 *gies developed by the Institute, in order to develop stand-*

2 *ards and encourage development of a third-party ecosystem.*

3   *(c) ACTIVITIES.—In carrying out the program re-*

4 *quired by subsection (b), the Under Secretary and the Sec-*

5 *retary—*

6   *(1) may use the advanced computing resources,*

7   *testbeds, and expertise of the National Laboratories,*

8   *Federal laboratories, the Institute, the National*

9   *Science Foundation, and private sector entities to run*

10   *tests and evaluations on the capabilities and limita-*

11   *tions of artificial intelligence systems;*

12   *(2) shall use existing solutions to the maximum*

13   *extent practicable;*

14   *(3) shall develop automated and reproducible*

15   *tests and evaluations for artificial intelligence systems*

16   *to the extent that is practicable;*

17   *(4) shall assess the computational resources nec-*

18   *essary to run tests and evaluations of artificial intel-*

19   *ligence systems;*

20   *(5) shall research methods to effectively minimize*

21   *the computational resources needed to run tests, eval-*

22   *uations, and security assessments of artificial intel-*

23   *ligence systems;*

24   *(6) shall where practicable, develop tests and*

25   *evaluations for artificial intelligence systems that are*

1 *designed for high-, medium-, and low-computational*

2 *intensity; and*

3   *(7) shall prioritize assessments by identifying se-*

4 *curity vulnerabilities of artificial intelligence systems,*

5 *including the establishment of and utilization of exist-*

6 *ing classified testbeds, at the National Laboratories if*

7 *necessary, including with respect to—*

8   *(A) autonomous offensive cyber capabilities;*

9   *(B) cybersecurity vulnerabilities in the arti-*

10   *ficial intelligence software ecosystem and beyond;*

11   *(C) chemical, biological, radiological, nu-*

12   *clear, critical infrastructure, and energy-security*

13   *threats or hazards; and*

14   *(D) such other capabilities as the Under*

15   *Secretary or the Secretary determines necessary.*

16 *(d) CONSIDERATION GIVEN.—In carrying out the ac-*

17 *tivities required by subsection (c), the Under Secretary and*

18 *the Secretary shall take under consideration the applica-*

19 *bility of any tests, evaluations, and risk assessments to arti-*

20 *ficial intelligence systems trained using primarily biologi-*

21 *cal sequence data that could be used to enhance an artificial*

22 *intelligence system's ability to contribute to the creation of*

23 *a pandemic or biological weapon, including those systems*

24 *used for gene synthesis.*

1   *(e) METRICS.—The Under Secretary and the Secretary*

2 *shall jointly develop metrics to assess—*

3   *(1) the effectiveness of the program in encour-*

4   *aging collaboration and supporting partnerships as*

5   *described in subsection (b); and*

6   *(2) the impact of the program on public and pri-*

7   *vate sector integration and use of artificial intel-*

8   *ligence systems.*

9   *(f) USE OF EXISTING PROGRAM.—In carrying out the*

10 *program required by subsection (b), the Under Secretary,*

11 *the Secretary, and the Director may use a program that*

12 *was in effect on the day before the date of the enactment*

13 *of this Act.*

14   *(g) EVALUATION AND FINDINGS.—Not later than 3*

15 *years after the start of the program required by subsection*

16 *(b), the Under Secretary and the Secretary shall jointly—*

17   *(1) evaluate the success of the program in en-*

18   *couraging collaboration and supporting partnerships*

19   *as described in subsection (b), using the metrics devel-*

20   *oped pursuant to subsection (e);*

21   *(2) evaluate the success of the program in en-*

22   *couraging public and private sector integration and*

23   *use of artificial intelligence systems by using the*

24   *metrics developed pursuant to subsection (e); and*

1   *(3) submit to the appropriate committees of Con-*
2   *gress the evaluation supported pursuant to paragraph*
3   *(1) and the findings of the Under Secretary, the Sec-*
4   *retary, and the Director with respect to the testbed*
5   *program.*
6   *(h) CONSULTATION.—In carrying out subsection (b),*
7   *the Under Secretary and the Secretary shall consult, as the*
8   *Under Secretary and the Secretary consider appropriate,*
9   *with the following:*
10   *(1) Industry, including private artificial intel-*
11   *ligence laboratories, companies of all sizes, and rep-*
12   *resentatives from the United States financial sector.*
13   *(2) Academia and institutions of higher edu-*
14   *cation.*
15   *(3) Civil society.*
16   *(i) ESTABLISHMENT OF VOLUNTARY FOUNDATION*
17   *MODELS TEST PROGRAM.—In carrying out the program*
18   *under subsection (b), the Under Secretary and the Secretary*
19   *shall, jointly carry out a test program to provide vendors*
20   *of foundation models, as well as vendors of artificial intel-*
21   *ligence virtual agents and robots that incorporate founda-*
22   *tion models, the opportunity to voluntarily test foundation*
23   *models across a range of modalities, such as models that*
24   *ingest and output text, images, audio, video, software code,*
25   *and mixed modalities.*

1 *(j) MATTERS RELATING TO DISCLOSURE AND AC-*

2 *CESS.—*

3   *(1) LIMITATION ON ACCESS TO CONTENT.—Access*

4 *to a contributing private sector person's voluntarily*

5 *provided confidential content, as deemed confidential*

6 *by the contributing private sector person, shall be*

7 *limited to the contributing private sector person and*

8 *the Institute.*

9   *(2) AGGREGATED INFORMATION.—The Under*

10 *Secretary and the Secretary may make aggregated,*

11 *deidentified information available to contributing*

12 *companies, the public, and other agencies, as the*

13 *Under Secretary considers appropriate, in support of*

14 *the purposes of this section.*

15   *(3) FOIA EXEMPTION.—Any confidential con-*

16 *tent, as deemed confidential by the contributing pri-*

17 *vate sector person, shall be exempt from public disclo-*

18 *sure under section 552(b)(3) of title 5, United States*

19 *Code.*

20 *(k) RULE OF CONSTRUCTION.—Nothing in this section*

21 *shall be construed to require a person to disclose any infor-*

22 *mation, including information—*

23   *(1) relating to a trade secret or other protected*

24 *intellectual property right;*

25   *(2) that is confidential business information; or*

1   *(3) that is privileged.*

2   *(l) SUNSET.—The programs required by subsections*

3 *(b) and (i) and the requirements of this section shall termi-*

4 *nate on the date that is 7 years after the date of the enact-*

5 *ment of this Act.*

6 ***SEC. 103. NATIONAL INSTITUTE OF STANDARDS AND TECH-***

7   ***NOLOGY AND DEPARTMENT OF ENERGY***

8   ***TESTBED TO IDENTIFY, TEST, AND SYN-***

9   ***THESIZE NEW MATERIALS.***

10   *(a) IN GENERAL.—The Secretary of Commerce, acting*

11 *through the Under Secretary of Commerce for Standards*

12 *and Technology, and the Secretary of Energy may use the*

13 *program established under section 102(b) to advance mate-*

14 *rials science and energy storage and optimization and to*

15 *support advanced manufacturing for the benefit of the*

16 *United States economy through the use of artificial intel-*

17 *ligence, autonomous laboratories, and artificial intelligence*

18 *integrated with emerging technologies, such as quantum hy-*

19 *brid computing and robotics.*

20   *(b) SUPPORT FOR ACCELERATED TECHNOLOGIES.—*

21 *The Secretary of Commerce and the Secretary of Energy*

22 *shall ensure that technologies accelerated under subsection*

23 *(a) are supported by advanced algorithms and models, un-*

24 *certainty quantification, and software and workforce devel-*

1 *opment tools to produce benchmark data, model comparison*

2 *tools, and best practices guides.*

3   *(c) PUBLIC-PRIVATE PARTNERSHIPS.—In carrying out*

4 *subsection (a), the Secretary of Commerce and the Secretary*

5 *of Energy shall, in consultation with industry, civil society,*

6 *and academia, enter into such public-private partnerships*

7 *as the Secretaries jointly determine appropriate.*

8   *(d) RESOURCES.—In carrying out this section, the*

9 *Secretaries may—*

10   *(1) use science and technology resources from the*

11 *Manufacturing USA Program, the Hollings Manufac-*

12 *turing Extension Partnership, the National Labora-*

13 *tories, Federal laboratories, and the private sector;*

14 *and*

15   *(2) the program established under section 102(b).*

16 **SEC. 104. COORDINATION, REIMBURSEMENT, AND SAVINGS**

17   **PROVISIONS.**

18   *(a) COORDINATION AND DUPLICATION.—The Secretary*

19 *of Commerce shall take such actions as may be necessary*

20 *to ensure no duplication of activities carried out under this*

21 *subtitle with the activities of—*

22   *(1) research entities of the Department of En-*

23 *ergy, including—*

24   *(A) the National Laboratories; and*

1   *(B) the Advanced Scientific Computing Re-*

2   *search program; and*

3   *(2) relevant industries.*

4   *(b) NATIONAL LABORATORY RESOURCES.—Any ad-*

5 *vanced computing resources, testbeds, expertise, or other re-*

6 *sources of the Department of Energy or the National Lab-*

7 *oratories that are provided to the National Science Founda-*

8 *tion, the National Institute of Standards and Technology,*

9 *or any other applicable entities under this subtitle shall be*

10 *provided—*

11   *(1) on a reimbursable basis; and*

12   *(2) pursuant to a reimbursable agreement.*

13   *(c) WAIVER.—The Secretary may waive the require-*

14 *ments set forth in subsection (b) if the Secretary determines*

15 *the waiver is necessary or appropriate to carry out the mis-*

16 *sions of the Department of Commerce.*

17   *(d) SAVINGS PROVISION.—Nothing in this subtitle*

18 *shall be construed—*

19   *(1) to modify any requirement or authority pro-*

20   *vided under section 5501 of the National Artificial*

21   *Intelligence Initiative Act of 2020 (15 U.S.C. 9461);*

22   *or*

23   *(2) to allow the Secretary of Commerce (includ-*

24   *ing the Under Secretary of Commerce for Standards*

25   *and Technology or the Director of the Artificial Intel-*

1 *ligence Safety Institute) or the Director of the Na-*

2 *tional Science Foundation to use monetary resources*

3 *of the Department of Energy or any National Labora-*

4 *tory.*

5 **SEC. 105. PROGRESS REPORT.**

6 *(a) IN GENERAL.—Not later than 1 year after the date*

7 *of the enactment of this Act, the Under Secretary of Com-*

8 *merce for Standards and Technology shall, in coordination*

9 *with the Secretary of Commerce and the Secretary of En-*

10 *ergy, submit to Congress a report on the implementation*

11 *of sections 102 and 103.*

12 *(b) CONTENTS.—The report submitted pursuant to*

13 *subsection (a) shall include the following:*

14 *(1) A description of the reimbursable agreements,*

15 *statements of work, and associated project schedules*

16 *and deliverables for the testbed program established*

17 *pursuant to section 102(b) and section 103(a).*

18 *(2) Details on the total amount of reimbursable*

19 *agreements entered into pursuant to section 104(b).*

20 *(3) Such additional information as the Under*

21 *Secretary determines appropriate.*

Subtitle B—International Cooperation

SEC. 111. INTERNATIONAL COALITIONS ON INNOVATION, DEVELOPMENT, AND ALIGNMENT OF STANDARDS WITH RESPECT TO ARTIFICIAL INTELLIGENCE.

(a) IN GENERAL.—The Under Secretary of Commerce for Standards and Technology (in this section referred to as the "Under Secretary") and the Secretary of Energy (in this section referred to as the "Secretary") shall jointly lead information exchange and coordination among Federal agencies and communication from Federal agencies to the private sector of the United States and like-minded governments of foreign countries to ensure effective Federal engagement in the development and use of international technical standards for artificial intelligence.

(b) REQUIREMENTS.—To support private sector-led engagement and ensure effective Federal engagement in the development and use of international technical standards for artificial intelligence, the Under Secretary shall seek to form alliances or coalitions with like-minded governments of foreign countries—

(1) to support the private sector-led development and adoption of standards or alignment with respect to artificial intelligence;

1   *(2) to encourage the adoption of technical stand-*

2   *ards developed in the United States to be adopted by*

3   *international standards organizations;*

4   *(3) to facilitate international collaboration on*

5   *innovation, science, and advancement in artificial in-*

6   *telligence research and development, including data*

7   *sharing, expertise, and resources; and*

8   *(4) to develop the government-to-government in-*

9   *frastructure to support the activities described in*

10   *paragraphs (1) through (3), using existing bilateral*

11   *and multilateral agreements to the extent practicable.*

12   *(c) CRITERIA FOR PARTICIPATION.—In forming an al-*

13   *liance or coalition of like-minded governments of foreign*

14   *countries under subsection (b), the Secretary of Commerce,*

15   *the Secretary of Energy, the Secretary of State, and the Di-*

16   *rector, in consultation with the heads of relevant agencies,*

17   *shall jointly establish technology trust criteria—*

18   *(1) to ensure all partner countries have a high*

19   *level of scientific and technological advancement; and*

20   *(2) to support the principles for international*

21   *standards development as detailed in the Committee*

22   *Decision on World Trade Organization Agreement on*

23   *Technical Barriers to Trade (Annex 2 of Part 1 of G/*

24   *TBT/1), on international standards, such as trans-*

1 *parency, openness, and consensus-based decision-mak-*

2 *ing.*

3 *(d) CONSULTATION ON INNOVATION AND ADVANCE-*

4 *MENTS IN ARTIFICIAL INTELLIGENCE.—In forming an alli-*

5 *ance or coalition under subsection (b), the Director, the Sec-*

6 *retary of Commerce, and the Secretary of State shall consult*

7 *with the Secretary of Energy and the Director of the Na-*

8 *tional Science Foundation on approaches to innovation and*

9 *advancements in artificial intelligence.*

10 *(e) SECURITY AND PROTECTION OF INTELLECTUAL*

11 *PROPERTY.—The Director, the Secretary of Commerce, the*

12 *Secretary of Energy, and the Secretary of State shall jointly*

13 *ensure that an alliance or coalition formed under subsection*

14 *(b) is only undertaken with countries that—*

15 *(1) have in place sufficient intellectual property*

16 *protections, safety standards, and risk management*

17 *approaches relevant to innovation and artificial intel-*

18 *ligence; and*

19 *(2) develop and coordinate research security*

20 *measures, export controls, and intellectual property*

21 *protections relevant to innovation, development, and*

22 *standard-setting relating to artificial intelligence.*

23 *(f) LIMITATION ON ELIGIBILITY OF THE PEOPLE'S RE-*

24 *PUBLIC OF CHINA.—*

1   *(1) IN GENERAL.—The People's Republic of*

2   *China is not eligible to participate in an alliance or*

3   *coalition of like-minded governments of foreign coun-*

4   *tries under subsection (b) until the United States*

5   *Trade Representative determines in a report to Con-*

6   *gress required by section 421 of the U.S.-China Rela-*

7   *tions Act of 2000 (22 U.S.C. 6951) that the People's*

8   *Republic of China has come into compliance with the*

9   *commitments it made in connection with its accession*

10 *to the World Trade Organization.*

11   *(2) REPORT REQUIRED.—Upon the submission*

12 *of a report described in paragraph (1), the officials*

13 *specified in paragraph (3) shall jointly submit to*

14 *Congress a report that includes the following:*

15   *(A) A detailed justification for why govern-*

16   *ment-to-government information exchange and*

17   *coordination with the Government of the People's*

18   *Republic of China is in the national security in-*

19   *terests of the United States.*

20   *(B) An assessment of the risks and potential*

21   *effects of such coordination, including any poten-*

22   *tial for the transfer under an alliance or coali-*

23   *tion described in paragraph (1) of technology or*

24   *intellectual property capable of harming the na-*

25   *tional security interests of the United States.*

1   *(C) A detailed justification for how the offi-*

2   *cials specified in paragraph (3) intend to ad-*

3   *dress human rights concerns in any scientific*

4   *and technology collaboration proposed to be con-*

5   *ducted by such an alliance or coalition.*

6   *(D) An assessment of the extent to which*

7   *those officials will be able to continuously mon-*

8   *itor the commitments made by the People's Re-*

9   *public of China in participating in such an alli-*

10   *ance or coalition.*

11   *(E) Such other information relating to such*

12   *an alliance or coalition as those officials consider*

13   *appropriate.*

14   *(3) OFFICIALS SPECIFIED.—The officials speci-*

15   *fied in this paragraph are the following:*

16   *(A) The Director.*

17   *(B) The Secretary of Commerce.*

18   *(C) The Secretary of Energy.*

19   *(D) The Secretary of State.*

20   *(g) RULE OF CONSTRUCTION.—Nothing in this section*

21   *shall be construed—*

22   *(1) to prohibit a person (as defined in section*

23   *551 of title 5, United States Code) from participating*

24   *in an international standards body; or*

1   *(2) to constrain separate engagement with*

2 *emerging economies on artificial intelligence.*

Subtitle C—Identifying Regulatory
Barriers to Innovation

5 **SEC. 121. COMPTROLLER GENERAL OF THE UNITED STATES**

6   **IDENTIFICATION OF RISKS AND OBSTACLES**

7   **RELATING TO ARTIFICIAL INTELLIGENCE**

8   **AND FEDERAL AGENCIES.**

9 *(a) REPORT REQUIRED.—Not later than 1 year after*

10 *the date of the enactment of this Act, the Comptroller Gen-*

11 *eral of the United States shall submit to Congress a report*

12 *on regulatory impediments to innovation in artificial intel-*

13 *ligence systems.*

14 *(b) CONTENTS.—The report submitted pursuant to*

15 *subsection (a) shall include the following:*

16   *(1) Significant examples of Federal statutes and*

17   *regulations that directly affect the innovation of arti-*

18   *ficial intelligence systems, including the ability of*

19   *companies of all sizes to compete in artificial intel-*

20   *ligence, which should also account for the effect of vol-*

21   *untary standards and best practices developed with*

22   *contributions from the Federal Government.*

23   *(2) An evaluation of the progress in government*

24   *adoption of artificial intelligence and use of artificial*

1 *intelligence to improve the quality of government*

2 *services.*

3 *(3) Based on the findings of the Comptroller*

4 *General with respect to paragraphs (1) and (2), such*

5 *recommendations as the Comptroller General may*

6 *have for legislative or administrative action to in-*

7 *crease the rate of innovation in artificial intelligence*

8 *systems.*

9 *TITLE II—ARTIFICIAL INTEL-*
10 *LIGENCE RESEARCH, DEVEL-*
11 *OPMENT, CAPACITY BUILDING*
12 *ACTIVITIES*

13 *SEC. 201. PUBLIC DATA FOR ARTIFICIAL INTELLIGENCE*
14 *SYSTEMS.*

15 *(a) IN GENERAL.—Title LI of the National Artificial*

16 *Intelligence Initiative Act of 2020 (15 U.S.C. 9411 et seq.)*

17 *is amended by adding at the end the following new section:*

18 *"SEC. 5103A. PUBLIC DATA FOR ARTIFICIAL INTELLIGENCE*
19 *SYSTEMS.*

20 *"(a) LIST OF PRIORITIES.—*

21 *"(1) IN GENERAL.—To expedite the development*

22 *of artificial intelligence systems in the United States,*

23 *the Director of the Office of Science and Technology*

24 *Policy (in this section referred to as the 'Director')*

25 *shall, acting through the National Science and Tech-*

1   *nology Council and the Interagency Committee and*

2   *in consultation with the Advisory Committee on Data*

3   *for Evidence Building established under section 315*

4   *of title 5, United States Code, develop a list of prior-*

5   *ities for Federal investment in creating or improving*

6   *curated, publicly available Federal Government data*

7   *for training and evaluating artificial intelligence sys-*

8   *tems and identify an appropriate location to host*

9   *curated datasets.*

10   *"(2) REQUIREMENTS.—*

11   *"(A) IN GENERAL.—The list developed pur-*

12   *suant to paragraph (1) shall—*

13   *"(i) prioritize data that will advance*

14   *novel artificial intelligence systems in the*

15   *public interest; and*

16   *"(ii) prioritize datasets unlikely to*

17   *independently receive sufficient private sec-*

18   *tor support to enable their creation, absent*

19   *Federal funding.*

20   *"(B) DATASETS IDENTIFIED.—In carrying*

21   *out subparagraph (A)(ii), the Director shall*

22   *identify 20 datasets to be prioritized.*

23   *"(3) CONSIDERATIONS.—In developing the list*

24   *under paragraph (1), the Director shall consider the*

25   *following:*

1   "(A) Applicability to the initial list of soci-

2   etal, national, and geostrategic challenges set

3   forth by subsection (b) of section 10387 of the Re-

4   search and Development, Competition, and Inno-

5   vation Act (42 U.S.C. 19107), or any successor

6   list.

7   "(B) Applicability to the initial list of key

8   technology focus areas set forth by subsection (c)

9   of such section, or any successor list.

10   "(C) Applicability to other major United

11   States economic sectors, such as agriculture,

12   health care, transportation, manufacturing, com-

13   munications, weather services, and positive util-

14   ity to small- and medium-sized United States

15   businesses.

16   "(D) Opportunities to improve datasets in

17   effect before the date of the enactment of the Fu-

18   ture of Artificial Intelligence Innovation Act of

19   2024.

20   "(E) Inclusion of data representative of the

21   entire population of the United States.

22   "(F) Potential national security threats to

23   releasing datasets, consistent with the United

24   States Government approach to data flows.

25   "(G) Requirements of laws in effect.

1   *"(H) Applicability to the priorities listed in*

2   *the National Artificial Intelligence Research and*

3   *Development Strategic Plan of the National*

4   *Science and Technology Council, dated October*

5   *2016.*

6   *"(I) Ability to use data already made avail-*

7   *able to the National Artificial Intelligence Re-*

8   *search Resource Pilot program or any successor*

9   *program.*

10   *"(J) Coordination with other Federal open*

11   *data efforts, as applicable.*

12   *"(4) PUBLIC INPUT.—Before finalizing the list*

13   *required by paragraph (1), the Director shall imple-*

14   *ment public comment procedures for receiving input*

15   *and comment from private industry, academia, civil*

16   *society, and other relevant stakeholders.*

17   *"(b) INTERAGENCY COMMITTEE.—In carrying out this*

18 *section, the Interagency Committee—*

19   *"(1) may establish or leverage existing initia-*

20   *tives, including through public-private partnerships,*

21   *for the creation or improvement of curated datasets*

22   *identified in the list developed pursuant to subsection*

23   *(a)(1), including methods for addressing data scar-*

24   *city;*

1   *"(2) may apply the priorities set forth in the list*

2 *developed pursuant to subsection (a)(1) to the enact-*

3 *ment of Federal public access and open government*

4 *data policies;*

5   *"(3) shall ensure consistency with Federal provi-*

6 *sions of law relating to privacy, including the tech-*

7 *nology and privacy standards applied to the National*

8 *Secure Data Service under section 10375(f) of the Re-*

9 *search and Development, Competition, and Innova-*

10 *tion Act (42 U.S.C. 19085(f)); and*

11   *"(4) shall ensure that no data sharing is per-*

12 *mitted with any country that the Secretary of Com-*

13 *merce, in consultation with the Secretary of Defense,*

14 *the Secretary of State, the Secretary of Energy, and*

15 *the Director of National Intelligence, determines to be*

16 *engaged in conduct that is detrimental to the national*

17 *security or foreign policy of the United States.*

18 *"(c) AVAILABILITY OF DATASETS.—Datasets that are*

19 *created or improved pursuant to this section—*

20   *"(1) shall, in the case of a dataset created or im-*

21 *proved by a Federal agency, be made available to the*

22 *comprehensive data inventory developed and main-*

23 *tained by the Federal agency pursuant to section*

24 *3511(a) of title 44, United States Code, in accordance*

25 *with all applicable regulations; and*

1   *"(2) may be made available to the National Ar-*

2   *tificial Intelligence Research Resource pilot program*

3   *established by the Director of the National Science*

4   *Foundation, and the applicable programs established*

5   *by the Department of Energy, in accordance with Ex-*

6   *ecutive Order 14110 (88 Fed. Reg. 75191; relating to*

7   *safe, secure, and trustworthy development and use of*

8   *artificial intelligence), or any successor program.*

9   *"(d) REPORT.—Not later than 1 year after the date*

10 *of the enactment of the Future of Artificial Intelligence In-*

11 *novation Act of 2024, the Director shall, acting through the*

12 *National Science and Technology Council and the Inter-*

13 *agency Committee, submit to the Committee on Commerce,*

14 *Science, and Transportation of the Senate and the Com-*

15 *mittee on Science, Space, and Technology of the House of*

16 *Representatives a report that includes—*

17   *"(1) best practices in developing publicly curated*

18   *artificial intelligence datasets;*

19   *"(2) lessons learned and challenges encountered*

20   *in developing the curated artificial intelligence*

21   *datasets;*

22   *"(3) principles used for artificial intelligence-*

23   *ready data; and*

1   *"(4) recommendations related to artificial intel-*

2   *ligence-ready data standards and potential processes*

3   *for development of such standards.*

4   *"(e) RULES OF CONSTRUCTION.—*

5   *"(1) IN GENERAL.—Nothing in this section shall*

6   *be construed to require the Federal Government or*

7   *other contributors to disclose any information—*

8   *"(A) relating to a trade secret or other pro-*

9   *tected intellectual property right;*

10   *"(B) that is confidential business informa-*

11   *tion; or*

12   *"(C) that is privileged.*

13   *"(2) DISCLOSURE TO PUBLIC DATASETS.—Ex-*

14   *cept as specifically provided for in this section, noth-*

15   *ing in this section shall be construed to prohibit the*

16   *head of a Federal agency from withholding informa-*

17   *tion from a public dataset.".*

18   *(b) CLERICAL AMENDMENTS.—The table of contents at*

19 *the beginning of section 2 of the William M. (Mac) Thorn-*

20 *berry National Defense Authorization Act for Fiscal Year*

21 *2021 and the table of contents at the beginning of title LI*

22 *of such Act are both amended by inserting after the items*

23 *relating to section 5103 the following new item:*

"5103A. Public data for artificial intelligence systems.".

1 **SEC. 202. FEDERAL GRAND CHALLENGES IN ARTIFICIAL IN-**

2 **TELLIGENCE.**

3 *(a) IN GENERAL.—Title LI of the National Artificial*

4 *Intelligence Initiative Act of 2020 (15 U.S.C. 9411 et seq.),*

5 *as amended by section 201, is further amended by adding*

6 *at the end the following new section:*

7 **"SEC. 5107. FEDERAL GRAND CHALLENGES IN ARTIFICIAL**

8 **INTELLIGENCE.**

9 *"(a) ESTABLISHMENT OF PROGRAM.—*

10 *"(1) IN GENERAL.—Not later than 1 year after*

11 *the date of the enactment of the Future of Artificial*

12 *Intelligence Innovation Act of 2024, the Director of*

13 *the Office of Science and Technology Policy (acting*

14 *through the National Science and Technology Coun-*

15 *cil) and the Interagency Committee may establish a*

16 *program to award prizes, using the authorities and*

17 *processes established under section 24 of the Steven-*

18 *son-Wydler Technology Innovation Act of 1980 (15*

19 *U.S.C. 3719), to eligible participants as determined*

20 *by the co-chairs of the Interagency Committee pursu-*

21 *ant to subsection (e).*

22 *"(2) PURPOSES.—The purposes of the program*

23 *required by paragraph (1) are as follows:*

24 *"(A) To expedite the development of artifi-*

25 *cial intelligence systems in the United States.*

1   *"(B) To stimulate artificial intelligence re-*

2   *search, development, and commercialization that*

3   *solves or advances specific, well-defined, and*

4   *measurable challenges in 1 or more of the cat-*

5   *egories established pursuant to subsection (b).*

6   *"(b) FEDERAL GRAND CHALLENGES IN ARTIFICIAL IN-*

7 *TELLIGENCE.—*

8   *"(1) LIST OF PRIORITIES.—The Director of the*

9 *Office of Science and Technology Policy (acting*

10 *through the National Science and Technology Coun-*

11 *cil) and the Interagency Committee and in consulta-*

12 *tion with industry, civil society, and academia, iden-*

13 *tify, and annually review and update as the Director*

14 *considers appropriate, a list of priorities for Federal*

15 *grand challenges in artificial intelligence pursuant to*

16 *the purposes set forth under subsection (a)(2).*

17   *"(2) INITIAL LIST.—*

18   *"(A) CONTENTS.—The list established pur-*

19   *suant to paragraph (1) may include the fol-*

20   *lowing priorities:*

21   *"(i) To overcome challenges with engi-*

22   *neering of and applied research on micro-*

23   *electronics, including through integration of*

24   *artificial intelligence with emerging tech-*

25   *nologies, such as neuromorphic and quan-*

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tum computing, or with respect to the phys-

ical limits on transistors, advanced inter-

connects, and memory elements.

"(ii) To promote transformational or

long-term advancements in computing and

artificial intelligence technologies through—

"(I) next-generation algorithm de-

sign;

"(II) next-generation compute ca-

pability;

"(III) generative and adaptive ar-

tificial intelligence for design applica-

tions;

"(IV) photonics-based micro-

processors and optical communication

networks, including electrophotonics;

"(V) the chemistry and physics of

new materials;

"(VI) energy use or energy effi-

ciency;

"(VII) techniques to establish

cryptographically secure content prove-

nance information; or

"(VIII) safety and controls for ar-

tificial intelligence applications.

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1   "(iii) To promote explainability and
2   mechanistic interpretability of artificial in-
3   telligence systems.

4   "(iv) To develop artificial intelligence
5   solutions, including through integration
6   among emerging technologies such as
7   neuromorphic and quantum computing to
8   overcome barriers relating to innovations in
9   advanced manufacturing in the United
10   States, including areas such as—

11   "(I) materials, nanomaterials,
12   and composites;

13   "(II) rapid, complex design;

14   "(III) sustainability and environ-
15   mental impact of manufacturing oper-
16   ations;

17   "(IV) predictive maintenance of
18   machinery;

19   "(V) improved part quality;

20   "(VI) process inspections;

21   "(VII) worker safety; and

22   "(VIII) robotics.

23   "(v) To develop artificial intelligence
24   solutions in sectors of the economy, such as
25   expanding the use of artificial intelligence

1 *in maritime vessels, including in naviga-*

2 *tion and in the design of propulsion systems*

3 *and fuels.*

4 *"(vi) To develop artificial intelligence*

5 *solutions to improve border security, includ-*

6 *ing solutions relevant to the detection of*

7 *fentanyl, illicit contraband, and other ille-*

8 *gal activities.*

9 *"(vii) To develop artificial intelligence*

10 *for science applications.*

11 *"(viii) To develop cybersecurity for ar-*

12 *tificial intelligence-related intellectual prop-*

13 *erty, such as artificial intelligence systems*

14 *and artificial intelligence algorithms.*

15 *"(ix) To develop artificial intelligence*

16 *solutions to modernize code and software*

17 *systems that are deployed in government*

18 *agencies and critical infrastructure and are*

19 *at risk of maintenance difficulties due to*

20 *code obsolescence or challenges finding ex-*

21 *pertise in outdated code bases.*

22 *"(3) CONSULTATION ON IDENTIFICATION AND SE-*

23 *LECTION OF GRAND CHALLENGES.—The Director of*

24 *the Office of Science and Technology Policy, the Di-*

25 *rector of the National Institute of Standards and*

1 *Technology, the Director of the Defense Advanced Re-*

2 *search Projects Agency, such agency heads as the Di-*

3 *rector of the Office of Science and Technology Policy*

4 *considers relevant, and the National Artificial Intel-*

5 *ligence Advisory Committee shall each identify and*

6 *select artificial intelligence research and development*

7 *grand challenges in which eligible participants will*

8 *compete to solve or advance for prize awards under*

9 *subsection (a).*

10 *"(4) PUBLIC INPUT ON IDENTIFICATION.—The*

11 *Director of the Office of Science and Technology Pol-*

12 *icy shall also seek public input on the identification*

13 *of artificial intelligence research and development*

14 *grand challenges under subsection (a).*

15 *"(5) PROBLEM STATEMENTS; SUCCESS*

16 *METRICS.—For each priority for a Federal grand*

17 *challenge identified under paragraph (1) and the*

18 *grand challenges identified and selected under para-*

19 *graph (3), the Director of the Office of Science and*

20 *Technology Policy shall—*

21 *"(A) establish a specific and well-defined*

22 *grand challenge problem statement and ensure*

23 *that such problem statement is published on a*

24 *website linking out to relevant prize competition*

25 *listings on the website Challenge.gov, or successor*

1   *website, that is managed by the General Services*

2   *Administration; and*

3   *"(B) establish and publish on the website*

4   *Challenge.gov, or successor website, clear targets,*

5   *success metrics, and validation protocols for the*

6   *prize competitions designed to address each*

7   *grand challenge, in order to provide specific*

8   *benchmarks that will be used to evaluate submis-*

9   *sions to the prize competition.*

10   *"(c) FEDERAL INVESTMENT INITIATIVES AUTHOR-*

11 *IZED.—Subject to the availability of amounts appropriated*

12 *for this purpose, the Secretary of Commerce, the Secretary*

13 *of Transportation, the Director of the National Science*

14 *Foundation may, consistent with the missions or respon-*

15 *sibilities of each Federal agency, establish 1 or more prize*

16 *competitions under section 24 of the Stevenson-Wydler*

17 *Technology Innovation Act of 1980 (15 U.S.C. 3719), chal-*

18 *lenge-based acquisitions, or other research and development*

19 *investments that each agency head deems appropriate con-*

20 *sistent with the list of priorities established pursuant to*

21 *subsection (b)(1).*

22   *"(d) REQUIREMENTS.—*

23   *"(1) IN GENERAL.—The Director of the Office of*

24   *Science and Technology Policy shall develop require-*

25   *ments for—*

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1   *"(A) the process for prize competitions*

2   *under subsections (a) and (c), including eligi-*

3   *bility criteria for participants, consistent with*

4   *the requirements under paragraph (2); and*

5   *"(B) testing, judging, and verification pro-*

6   *cedures for submissions to receive a prize award*

7   *under subsection (c).*

8   *"(2) ELIGIBILITY REQUIREMENT AND JUDG-*

9   ING.—

10   *"(A) ELIGIBILITY.—In accordance with the*

11   *requirement described in section 24(g)(3) of the*

12   *Stevenson-Wydler Technology Innovation Act of*

13   *1980 (15 U.S.C. 3719(g)(3)), a recipient of a*

14   *prize award under subsection (c)—*

15   *"(i) that is a private entity shall be*

16   *incorporated in and maintain a primary*

17   *place of business in the United States; and*

18   *"(ii) who is an individual, whether*

19   *participating singly or in a group, shall be*

20   *a citizen or permanent resident of the*

21   *United States.*

22   *"(B) JUDGES.—In accordance with section*

23   *24(k) of the Stevenson-Wydler Technology Inno-*

24   *vation Act of 1980 (15 U.S.C. 3719(k)), a judge*

1   *of a prize competition under subsection (c) may*

2   *be an individual from the private sector.*

3   *"(3) AGENCY LEADERSHIP.—Each agency head*

4 *carrying out an investment initiative under sub-*

5 *section (c) shall ensure that—*

6   *"(A) for each prize competition or invest-*

7   *ment initiative carried out by the agency head*

8   *under such subsection, there is—*

9   *"(i) a positive impact on the economic*

10   *competitiveness of the United States;*

11   *"(ii) a benefit to United States indus-*

12   *try;*

13   *"(iii) to the extent possible, leveraging*

14   *of the resources and expertise of industry*

15   *and philanthropic partners in shaping the*

16   *investments; and*

17   *"(iv) in a case involving development*

18   *and manufacturing, use of advanced manu-*

19   *facturing in the United States; and*

20   *"(B) all research conducted for purposes of*

21   *the investment initiative is conducted in the*

22   *United States.*

23 *"(e) REPORTS.—*

24   *"(1) NOTIFICATION OF WINNING SUBMISSION.—*

25 *Not later than 60 days after the date on which a prize*

1 *is awarded under subsection (c), the agency head*

2 *awarding the prize shall submit to the Committee on*

3 *Commerce, Science, and Transportation of the Senate,*

4 *the Committee on Science, Space, and Technology of*

5 *the House of Representatives, and such other commit-*

6 *tees of Congress as the agency head considers relevant*

7 *a report that describes the winning submission to the*

8 *prize competition and its benefits to the United*

9 *States.*

10 *"(2) BIENNIAL REPORT.—*

11 *"(A) IN GENERAL.—Not later than 2 years*

12 *after the date of the enactment of the Future of*

13 *Artificial Intelligence Innovation Act of 2024,*

14 *and biennially thereafter, the heads of agencies*

15 *described in subsection (c) shall submit to the*

16 *Committee on Commerce, Science, and Transpor-*

17 *tation of the Senate, the Committee on Science,*

18 *Space, and Technology of the House of Rep-*

19 *resentatives, and such other committees of Con-*

20 *gress as the agency heads consider relevant a re-*

21 *port that includes—*

22 *"(i) a description of the activities car-*

23 *ried out by the agency heads under this sec-*

24 *tion;*

1   *"(ii) a description of the active com-*

2   *petitions and the results of completed com-*

3   *petitions under subsection (c); and*

4   *"(iii) efforts to provide information to*

5   *the public on active competitions under sub-*

6   *section (c) to encourage participation.*

7   *"(B) PUBLIC ACCESSIBILITY.—The agency*

8   *heads described in subsection (c) shall make the*

9   *biennial report required under subparagraph (A)*

10   *publicly accessible, including by posting the bi-*

11   *ennial report on a website in an easily accessible*

12   *location, such as the GovInfo website of the Gov-*

13   *ernment Publishing Office.*

14   *"(f) ACCESSIBILITY.—In carrying out any competi-*

15 *tion under subsection (c), the head of an agency shall post*

16 *the active prize competitions and available prize awards*

17 *under subsection (b) to Challenge.gov, or successor website,*

18 *after the grand challenges are selected and the prize com-*

19 *petitions are designed pursuant to subsections (c) and (e)*

20 *to ensure the prize competitions are widely accessible to eli-*

21 *gible participants.*

22   *"(g) SUNSET.—This section shall terminate on the*

23 *date that is 5 years after the date of the enactment the Fu-*

24 *ture of Artificial Intelligence Innovation Act of 2024.".*

1   *(b) COMPTROLLER GENERAL OF THE UNITED STATES*

2 *STUDIES AND REPORTS.—*

3   *(1) INITIAL STUDY.—*

4   *(A) IN GENERAL.—Not later than 1 year*

5 *after the date of enactment of this Act, the*

6 *Comptroller General of the United States shall*

7 *conduct a study of Federal prize competitions,*

8 *which shall include an assessment of the efficacy*

9 *and impact of prize competitions generally.*

10   *(B) ELEMENTS.—The study conducted*

11 *under subparagraph (A) shall include, to the ex-*

12 *tent practicable, the following:*

13   *(i) A survey of all existing, current*

14 *and ongoing Federal prize competitions car-*

15 *ried out under authorities enacted before the*

16 *date of the enactment of this Act.*

17   *(ii) An assessment of those existing,*

18 *current, and ongoing Federal prize competi-*

19 *tions that includes addressing—*

20   *(I) whether and what technology*

21 *or innovation would have been devel-*

22 *oped in the absence of the prize com-*

23 *petitions;*

24   *(II) whether the prize competi-*

25 *tions shortened the timeframe for the*

1   *development of the technology or inno-*

2   *vation;*

3   *(III) whether the prize competi-*

4   *tion was cost effective;*

5   *(IV) what, if any, other benefits*

6   *were gained from conducting the prize*

7   *competitions;*

8   *(V) whether the use of a more tra-*

9   *ditional policy tool such as a grant or*

10   *contract have resulted in the develop-*

11   *ment of a similar technology or inno-*

12   *vation;*

13   *(VI) whether prize competitions*

14   *might be designed differently in a way*

15   *that would result in a more effective or*

16   *revolutionary technology being devel-*

17   *oped;*

18   *(VII) what are appropriate*

19   *metrics that could be used for deter-*

20   *mining the success of a prize competi-*

21   *tion, and whether those metrics differ*

22   *when evaluating near-term and long-*

23   *term impacts of prize competitions;*

24   *and*

1   *(VIII) suggested best practices of*

2   *prize competitions.*

3   *(C) CONGRESSIONAL BRIEFING.—Not later*

4   *than 540 days after the date of the enactment of*

5   *this Act, the Comptroller General shall provide*

6   *the Committee on Science, Space, and Tech-*

7   *nology and the Committee on Energy and Nat-*

8   *ural Resources of the Senate and the Committee*

9   *on Energy and Commerce of the House of Rep-*

10   *resentatives a briefing on the findings of the*

11   *Comptroller General with respect to the study*

12   *conducted under subparagraph (A).*

13   *(D) REPORT.—Not later than 540 days*

14   *after the date of the enactment of this Act, the*

15   *Comptroller General shall submit to the congres-*

16   *sional committees specified in subparagraph (C)*

17   *a report on the findings and recommendations of*

18   *Comptroller General from the study conducted*

19   *under subparagraph (A).*

20   *(2) INTERIM STUDY.—*

21   *(A) IN GENERAL.—The Comptroller General*

22   *of the United States shall conduct a study of the*

23   *Federal prize challenges implemented under sec-*

24   *tion 5108 of the of the National Artificial Intel-*

25   *ligence Initiative Act of 2020, as added by sub-*

1   *section (a), which shall include an assessment of*

2   *the efficacy and effect of such prize competitions.*

3   *(B) ELEMENTS.—The study conducted*

4   *under subparagraph (A) shall include, to the ex-*

5   *tent practicable, the following:*

6   *(i) A survey of all Federal prize com-*

7   *petitions implemented under section 5108 of*

8   *the of the National Artificial Intelligence*

9   *Initiative Act of 2020, as added by sub-*

10   *section (a).*

11   *(ii) An assessment of the Federal prize*

12   *competitions implemented such section,*

13   *which shall include addressing the same*

14   *considerations as set forth under paragraph*

15   *(1)(B)(ii).*

16   *(iii) An assessment of the efficacy, im-*

17   *pact, and cost-effectiveness of prize competi-*

18   *tions implemented under section 5108 of the*

19   *of the National Artificial Intelligence Ini-*

20   *tiative Act of 2020, as added by subsection*

21   *(a), compared to other Federal prize com-*

22   *petitions.*

23   *(C) CONGRESSIONAL BRIEFING.—Not later*

24   *than 1 year after completing the study required*

25   *by subparagraph (A), the Comptroller General*

1   *shall provide the Committee on Science, Space,*

2   *and Technology and the Committee on Energy*

3   *and Natural Resources of the Senate and the*

4   *Committee on Energy and Commerce of the*

5   *House of Representatives a briefing on the find-*

6   *ings of the Comptroller General with respect to*

7   *the study conducted under subparagraph (A).*

8   *(D) REPORT.—Not later than 180 days*

9   *after the date of the enactment of this Act, the*

10   *Comptroller General shall submit to the congres-*

11   *sional committees specified in subparagraph (C)*

12   *a report on the findings and recommendations of*

13   *the Comptroller General with respect to the study*

14   *conducted under subparagraph (A).*

15   *(c) CLERICAL AMENDMENTS.—The table of contents at*

16 *the beginning of section 2 of the William M. (Mac) Thorn-*

17 *berry National Defense Authorization Act for Fiscal Year*

18 *2021 and the table of contents at the beginning of title LI*

19 *of such Act, as amended by section 201, are both amended*

20 *by inserting after the items relating to section 5107 the fol-*

21 *lowing new item:*

"5107. Federal grand challenges in artificial intelligence.".

TITLE III—RESEARCH SECURITY AND OTHER MATTERS

SEC. 301. RESEARCH SECURITY.

The activities authorized under this Act shall be carried out in accordance with the provision of subtitle D of title VI of the Research and Development, Competition, and Innovation Act (42 U.S.C. 19231 et seq.; enacted as part of division B of Public Law 117–167) and section 223 of the William M. (Mac) Thornberry National Defense Authorization Act for Fiscal Year 2021 (42 U.S.C. 6605).

SEC. 302. EXPANSION OF AUTHORITY TO HIRE CRITICAL TECHNICAL EXPERTS.

(a) IN GENERAL.—Subsection (b) of section 6 of the National Institute of Standards and Technology Act (15 U.S.C. 275) is amended, in the second sentence, by striking "15" and inserting "30

(b) MODIFICATION OF SUNSET.—Subsection (c) of such section is amended by striking "under section (b) shall expire on the date that is 5 years after the date of the enactment of this section" and inserting "under subsection (b) shall expire on December 30, 2035".

SEC. 303. FOUNDATION FOR STANDARDS AND METROLOGY.

(a) IN GENERAL.—Subtitle B of title II of the Research and Development, Competition, and Innovation Act (42 U.S.C. 18931 et seq.; relating to measurement research of

1 *the National Institute of Standards and Technology for the*

2 *future; enacted as part of division B of Public Law 117–*

3 *167) is amended by adding at the end the following new*

4 *section:*

5 **"SEC. 10236. FOUNDATION FOR STANDARDS AND METROL-**

6 **OGY.**

7 *"(a) ESTABLISHMENT.—The Secretary, acting through*

8 *the Director, shall establish a nonprofit corporation to be*

9 *known as the 'Foundation for Standards and Metrology'.*

10 *"(b) MISSION.—The mission of the Foundation shall*

11 *be to—*

12 *"(1) support the Institute in carrying out its ac-*

13 *tivities and mission to advance measurement science,*

14 *technical standards, and technology in ways that en-*

15 *hance the economic security and prosperity of the*

16 *United States; and*

17 *"(2) advance collaboration with researchers, in-*

18 *stitutions of higher education, industry, and non-*

19 *profit and philanthropic organizations to accelerate*

20 *the development of technical standards, measurement*

21 *science, and the commercialization of emerging tech-*

22 *nologies in the United States.*

23 *"(c) ACTIVITIES.—In carrying out its mission under*

24 *subsection (b), the Foundation may carry out the following:*

1   *"(1) Support international metrology and tech-*
2   *nical standards engagement activities.*

3   *"(2) Support studies, projects, and research on*
4   *metrology and the development of benchmarks and*
5   *technical standards infrastructure across the Insti-*
6   *tute's mission areas.*

7   *"(3) Advance collaboration between the Institute*
8   *and researchers, industry, nonprofit and philan-*
9   *thropic organizations, institutions of higher edu-*
10   *cation, federally funded research and development*
11   *centers, and State, Tribal, and local governments.*

12   *"(4) Support the expansion and improvement of*
13   *research facilities and infrastructure at the Institute*
14   *to advance the development of emerging technologies.*

15   *"(5) Support the commercialization of federally*
16   *funded research.*

17   *"(6) Conduct education and outreach activities.*

18   *"(7) Offer direct support to NIST associates, in-*
19   *cluding through the provision of fellowships, grants,*
20   *stipends, travel, health insurance, professional devel-*
21   *opment training, housing, technical and administra-*
22   *tive assistance, recognition awards for outstanding*
23   *performance, and occupational safety and awareness*
24   *training and support, and other appropriate expendi-*
25   *tures.*

1   *"(8) Conduct such other activities as determined*

2 *necessary by the Foundation to carry out its mission.*

3   *"(d) AUTHORITY OF THE FOUNDATION.—The Founda-*

4 *tion shall be the sole entity responsible for carrying out the*

5 *activities described in subsection (c).*

6   *"(e) STAKEHOLDER ENGAGEMENT.—The Foundation*

7 *shall convene, and may consult with, representatives from*

8 *the Institute, institutions of higher education, the private*

9 *sector, non-profit organizations, and commercialization or-*

10 *ganizations to develop activities for the mission of the Foun-*

11 *dation under subsection (b) and to advance the activities*

12 *of the Foundation under subsection (c).*

13   *"(f) LIMITATION.—The Foundation shall not be an*

14 *agency or instrumentality of the Federal Government.*

15   *"(g) SUPPORT.—The Foundation may receive, admin-*

16 *ister, solicit, accept, and use funds, gifts, devises, or be-*

17 *quests, either absolutely or in trust of real or personal prop-*

18 *erty or any income therefrom or other interest therein to*

19 *support activities under subsection (c), except that this sub-*

20 *section shall not apply if any of such is from a foreign coun-*

21 *try of concern or a foreign entity of concern.*

22   *"(h) TAX EXEMPT STATUS.—The Board shall take all*

23 *necessary and appropriate steps to ensure the Foundation*

24 *is an organization described in section 501(c) of the Inter-*

1 *nal Revenue Code of 1986 and exempt from taxation under*

2 *section 501(a) of such Code.*

3   *"(i) BOARD OF DIRECTORS.—*

4   *"(1) ESTABLISHMENT.—The Foundation shall be*

5 *governed by a Board of Directors.*

6   *"(2) COMPOSITION.—*

7   *"(A) IN GENERAL.—The Board shall be*

8 *composed of the following:*

9   *"(i) Eleven appointed voting members*

10 *described in subparagraph (B).*

11   *"(ii) Ex officio nonvoting members de-*

12 *scribed in subparagraph (C).*

13   *"(B) APPOINTED MEMBERS.—*

14   *"(i) INITIAL MEMBERS.—The Sec-*

15 *retary, acting through the Director, shall—*

16   *"(I) seek to enter into an agree-*

17 *ment with the National Academies of*

18 *Sciences, Engineering, and Medicine to*

19 *develop a list of individuals to serve as*

20 *members of the Board who are well*

21 *qualified and will meet the require-*

22 *ments of clauses (ii) and (iii); and*

23   *"(II) appoint the initial members*

24 *of the Board from such list, if applica-*

25 *ble, in consultation with the National*

1   *Academies of Sciences, Engineering,*

2   *and Medicine.*

3   *"(ii) REPRESENTATION.—The ap-*

4   *pointed members of the Board shall reflect*

5   *a broad cross-section of stakeholders across*

6   *diverse sectors, regions and communities,*

7   *including from academia, private sector en-*

8   *tities, technical standards bodies, the invest-*

9   *ment community, the philanthropic commu-*

10   *nity, and other nonprofit organizations.*

11   *"(iii) EXPERIENCE.—The Secretary,*

12   *acting through the Director, shall ensure the*

13   *appointed members of the Board have the*

14   *experience and are qualified to provide ad-*

15   *vice and information to advance the Foun-*

16   *dation's mission, including in science and*

17   *technology research and development, tech-*

18   *nical standards, education, technology*

19   *transfer, commercialization, or other aspects*

20   *of the Foundation's mission.*

21   *"(C) NONVOTING MEMBERS.—*

22   *"(i) EX OFFICIO MEMBERS.—The Di-*

23   *rector (or Director's designee) shall be an ex*

24   *officio member of the Board.*

1   *"(ii) NO VOTING POWER.—The ex offi-*

2   *cio members described in clause (i) shall not*

3   *have voting power on the Board.*

4   *"(3) CHAIR AND VICE CHAIR.—*

5   *"(A) IN GENERAL.—The Board shall des-*

6   *ignate, from among its members—*

7   *"(i) an individual to serve as the chair*

8   *of the Board; and*

9   *"(ii) an individual to serve as the vice*

10   *chair of the Board.*

11   *"(B) TERMS.—The term of service of the*

12   *Chair and Vice Chair of the Board shall end on*

13   *the earlier of—*

14   *"(i) the date that is 3 years after the*

15   *date on which the Chair or Vice Chair of*

16   *the Board, as applicable, is designated for*

17   *the respective position; and*

18   *"(ii) the last day of the term of service*

19   *of the member, as determined under para-*

20   *graph (4)(A), who is designated to be Chair*

21   *or Vice Chair of the Board, as applicable.*

22   *"(C) REPRESENTATION.—The Chair and*

23   *Vice Chair of the Board—*

1   "(i) may not be representatives of the

2   same area of subject matter expertise, or en-

3   tity, as applicable; and

4   "(ii) may not be representatives of any

5   area of subject matter expertise, or entity,

6   as applicable, represented by the imme-

7   diately preceding Chair and Vice Chair of

8   the Board.

9   "(4) TERMS AND VACANCIES.—

10   "(A) TERM LIMITS.—Subject to subpara-

11   graph (B), the term of office of each member of

12   the Board shall be not more than five years, ex-

13   cept that a member of the Board may continue

14   to serve after the expiration of the term of such

15   member until the expiration of the 180-day pe-

16   riod beginning on the date on which the term of

17   such member expires, if no new member is ap-

18   pointed to replace the departing board member.

19   "(B) INITIAL APPOINTED MEMBERS.—Of the

20   initial members of the Board appointed under

21   paragraph (4)(A), half of such members shall

22   serve for four years and half of such members

23   shall serve for five years, as determined by the

24   Chair of the Board.

1   "(C) VACANCIES.—Any vacancy in the
2   membership of the appointed members of the
3   Board—

4   "(i) shall be filled in accordance with
5   the bylaws of the Foundation by an indi-
6   vidual capable of representing the same
7   area or entity, as applicable, as represented
8   by the vacating board member under para-
9   graph (2)(B)(ii);

10   "(ii) shall not affect the power of the
11   remaining appointed members to carry out
12   the duties of the Board; and

13   "(iii) shall be filled by an individual
14   selected by the Board.

15   "(5) QUORUM.—A majority of the members of
16   the Board shall constitute a quorum for the purposes
17   of conducting the business of the Board.

18   "(6) DUTIES.—The Board shall carry out the
19   following:

20   "(A) Establish bylaws for the Foundation
21   in accordance with paragraph (7).

22   "(B) Provide overall direction for the activi-
23   ties of the Foundation and establish priority ac-
24   tivities.

1   "(C) Coordinate with the Institute the ac-

2   tivities of the Foundation to ensure consistency

3   with the programs and policies of the Institute.

4   "(D) Evaluate the performance of the Exec-

5   utive Director of the Foundation.

6   "(E) Actively solicit and accept funds, gifts,

7   grants, devises, or bequests of real or personal

8   property to the Foundation, including from pri-

9   vate entities.

10   "(F) Carry out any other necessary activi-

11 ties of the Foundation.

12 "(7) BYLAWS.—The Board shall establish bylaws

13 for the Foundation. In establishing such bylaws, the

14 Board shall ensure the following:

15   "(A) The bylaws of the Foundation include

16 the following:

17   "(i) Policies for the selection of the

18   Board members, officers, employees, agents,

19   and contractors of the Foundation.

20   "(ii) Policies, including ethical and

21   disclosure standards, for the following:

22   "(I) The acceptance, solicitation,

23   and disposition of donations and

24   grants to the Foundation, including

25   appropriate limits on the ability of do-

1   *nors to designate, by stipulation or re-*

2   *striction, the use or recipient of do-*

3   *nated funds.*

4   *"(II) The disposition of assets of*

5   *the Foundation.*

6   *"(iii) Policies that subject all employ-*

7   *ees, fellows, trainees, and other agents of the*

8   *Foundation (including appointed voting*

9   *members and ex officio members of the*

10   *Board) to conflict of interest standards.*

11   *"(iv) The specific duties of the Execu-*

12   *tive Director of the Foundation.*

13   *"(B) The bylaws of the Foundation and ac-*

14   *tivities carried out under such bylaws do not—*

15   *"(i) reflect unfavorably upon the abil-*

16   *ity of the Foundation to carry out its re-*

17   *sponsibilities or official duties in a fair and*

18   *objective manner; or*

19   *"(ii) compromise, or appear to com-*

20   *promise, the integrity of any governmental*

21   *agency or program, or any officer or em-*

22   *ployee employed by, or involved in a gov-*

23   *ernmental agency or program.*

24   *"(8) RESTRICTIONS ON MEMBERSHIP.—*

1   *"(A) EMPLOYEES.—No employee of the De-*

2   *partment of Commerce may be appointed as a*

3   *voting member of the Board.*

4   *"(B) STATUS.—Each voting member of the*

5   *Board shall be—*

6   *"(i) a citizen of the United States;*

7   *"(ii) a national of the United States*

8   *(as such term is defined in section 101(a) of*

9   *the Immigration and Nationality Act (8*

10   *U.S.C. 1101(a));*

11   *"(iii) an alien admitted as a refugee*

12   *under section 207 of such Act (8 U.S.C.*

13   *1157); or*

14   *"(iv) an alien lawfully admitted to the*

15   *United States for permanent residence.*

16   *"(9) COMPENSATION.—*

17   *"(A) IN GENERAL.—Members of the Board*

18   *may not receive compensation for serving on the*

19   *Board.*

20   *"(B) CERTAIN EXPENSES.—In accordance*

21   *with the bylaws of the Foundation, members of*

22   *the Board may be reimbursed for travel expenses,*

23   *including per diem in lieu of subsistence, and*

24   *other necessary expenses incurred in carrying*

25   *out the duties of the Board.*

1   "(10) LIAISON REPRESENTATIVES.—The Sec-

2   retary, acting through the Director, shall designate

3   representatives from across the Institute to serve as

4   the liaisons to the Board and the Foundation.

5   "(11) PERSONAL LIABILITY OF BOARD MEM-

6   BERS.—The members of the Board shall not be per-

7   sonally liable, except for malfeasance.

8   "(j) ADMINISTRATION.—

9   "(1) EXECUTIVE DIRECTOR.—

10   "(A) IN GENERAL.—The Foundation shall

11   have an Executive Director who shall be ap-

12   pointed by the Board, and who shall serve at the

13   pleasure of the Board, and for whom the Board

14   shall establish the rate of compensation. Subject

15   to the bylaws established under subsection (i)(7),

16   the Executive Director shall be responsible for the

17   daily operations of the Foundation in carrying

18   out the activities of the Foundation under sub-

19   section (c).

20   "(B) RESPONSIBILITIES.—In carrying out

21   the daily operations of the Foundation, the Exec-

22   utive Director of the Foundation shall carry out

23   the following:

24   "(i) Hire, promote, compensate, and

25   discharge officers and employees of the

1   *Foundation, and define the duties of such*

2   *officers and employees.*

3   *"(ii) Accept and administer donations*

4   *to the Foundation, and administer the as-*

5   *sets of the Foundation.*

6   *"(iii) Enter into such contracts and*

7   *execute legal instruments as are appropriate*

8   *in carrying out the activities of the Founda-*

9   *tion.*

10   *"(iv) Perform such other functions as*

11   *necessary to operate the Foundation.*

12   *"(C) RESTRICTIONS.—*

13   *"(i) EXECUTIVE DIRECTOR.—The Ex-*

14   *ecutive Director shall be—*

15   *"(I) a citizen of the United States;*

16   *"(II) a national of the United*

17   *States (as such term is defined in sec-*

18   *tion 101(a) of the Immigration and*

19   *Nationality Act (8 U.S.C. 1101(a));*

20   *"(III) an alien admitted as a ref-*

21   *ugee under section 207 of such Act (8*

22   *U.S.C. 1157); or*

23   *"(IV) an alien lawfully admitted*

24   *to the United States for permanent res-*

25   *idence.*

1   *"(ii) OFFICERS AND EMPLOYEES.—*

2   *Each officer or employee of the Foundation*

3   *shall be—*

4   *"(I) a citizen of the United States;*

5   *"(II) a national of the United*

6   *States (as such term is defined in sec-*

7   *tion 101(a) of the Immigration and*

8   *Nationality Act (8 U.S.C. 1101(a));*

9   *"(III) an alien admitted as a ref-*

10   *ugee under section 207 of such Act (8*

11   *U.S.C. 1157); or*

12   *"(IV) an alien lawfully admitted*

13   *to the United States for permanent res-*

14   *idence.*

15   *"(2) ADMINISTRATIVE CONTROL.—No member of*

16 *the Board, officer or employee of the Foundation or*

17 *of any program established by the Foundation, or*

18 *participant in a program established by the Founda-*

19 *tion, may exercise administrative control over any*

20 *Federal employee.*

21   *"(3) TRANSFER OF FUNDS TO INSTITUTE.—The*

22 *Foundation may transfer funds and property to the*

23 *Institute, which the Institute may accept and use and*

24 *which shall be subject to all applicable Federal limita-*

25 *tions relating to federally funded research.*

1   *"(4) STRATEGIC PLAN.—Not later than one year*

2   *after the establishment of the Foundation, the Foun-*

3   *dation shall submit to the Committee on Science,*

4   *Space, and Technology of the House of Representa-*

5   *tives and the Committee on Commerce, Science, and*

6   *Transportation of the Senate a strategic plan that*

7   *contains the following:*

8   *"(A) A plan for the Foundation to become*

9   *financially self-sustaining in the next five years.*

10   *"(B) Short- and long-term objectives of the*

11   *Foundation, as identified by the Board.*

12   *"(C) A description of the efforts the Foun-*

13   *dation will take to be transparent in the proc-*

14   *esses of the Foundation, including processes re-*

15   *lating to the following:*

16   *"(i) Grant awards, including selection,*

17   *review, and notification.*

18   *"(ii) Communication of past, current,*

19   *and future research priorities.*

20   *"(iii) Solicitation of and response to*

21   *public input on the priorities identified by*

22   *the Foundation.*

23   *"(D) A description of the financial goals*

24   *and benchmarks of the Foundation for the fol-*

25   *lowing ten years.*

1   *"(E) A description of the efforts undertaken*

2   *by the Foundation to ensure maximum*

3   *complementarity and minimum redundancy*

4   *with investments made by the Institute.*

5   *"(5) REPORT.—*

6   *"(A) IN GENERAL.—Not later than 18*

7   *months after the establishment of the Foundation*

8   *and not later than February 1 of each year*

9   *thereafter, the Foundation shall publish a report*

10   *describing the activities of the Foundation dur-*

11   *ing the immediately preceding fiscal year. Each*

12   *such report shall include with respect to such fis-*

13   *cal year a comprehensive statement of the oper-*

14   *ations, activities, financial condition, progress,*

15   *and accomplishments of the Foundation.*

16   *"(B) FINANCIAL CONDITION.—With respect*

17   *to the financial condition of the Foundation,*

18   *each report under subparagraph (A) shall in-*

19   *clude the source, and a description of, all sup-*

20   *port under subsection (g) provided to the Foun-*

21   *dation. Each such report shall identify the per-*

22   *sons or entities from which such support is re-*

23   *ceived, and include a specification of any restric-*

24   *tions on the purposes for which such support*

25   *may be used.*

1   "(C) PUBLICATION.—The Foundation shall

2   make copies of each report submitted under sub-

3   paragraph (A) available—

4   "(i) for public inspection, and shall

5   upon request provide a copy of the report to

6   any individual for a charge not to exceed

7   the cost of providing such copy; and

8   "(ii) to the Committee on Science,

9   Space, and Technology of the House of Rep-

10   resentatives and the Committee on Com-

11   merce, Science, and Transportation of the

12   Senate.

13   "(6) AUDITS AND DISCLOSURE.—The Founda-

14   tion shall—

15   "(A) provide for annual audits of the finan-

16   cial condition of the Foundation, including a

17   full list of the Foundation's donors and any re-

18   strictions on the purposes for which gifts to the

19   Foundation may be used; and

20   "(B) make such audits, and all other

21   records, documents, and other papers of the

22   Foundation, available to the Secretary and the

23   Comptroller General of the United States for ex-

24   amination or audit.

1   *"(7) EVALUATION BY COMPTROLLER GENERAL.—*

2   *Not later than five years after the date on which the*

3   *Foundation is established, the Comptroller General of*

4   *the United States shall submit to the Committee on*

5   *Science, Space, and Technology of the House of Rep-*

6   *resentatives and the Committee on Commerce,*

7   *Science, and Transportation of the Senate the fol-*

8   *lowing:*

9   *"(A) An evaluation of the following:*

10   *"(i) The extent to which the Founda-*

11   *tion is achieving the mission of the Founda-*

12   *tion.*

13   *"(ii) The operation of the Foundation.*

14   *"(B) Any recommendations on how the*

15   *Foundation may be improved.*

16   *"(k) INTEGRITY.—*

17   *"(1) IN GENERAL.—To ensure integrity in the*

18   *operations of the Foundation, the Board shall develop*

19   *and enforce procedures relating to standards of con-*

20   *duct, financial disclosure statements, conflicts of in-*

21   *terest (including recusal and waiver rules), audits,*

22   *and any other matters determined appropriate by the*

23   *Board.*

24   *"(2) FINANCIAL CONFLICTS OF INTEREST.—To*

25   *mitigate conflicts of interest and risks from malign*

1 *foreign influence, any individual who is an officer,*

2 *employee, or member of the Board is prohibited from*

3 *any participation in deliberations by the Foundation*

4 *of a matter that would directly or predictably affect*

5 *any financial interest of any of the following:*

6   *"(A) Such individual.*

7   *"(B) A relative of such individual.*

8   *"(C) A business organization or other entity*

9   *in which such individual or relative of such in-*

10   *dividual has an interest, including an organiza-*

11   *tion or other entity with which such individual*

12   *is negotiating employment.*

13 *"(3) SECURITY.—This section shall be carried*

14 *out in accordance with the provision of subtitle D of*

15 *title VI of the Research and Development, Competi-*

16 *tion, and Innovation Act (42 U.S.C. 19231 et seq.;*

17 *enacted as part of division B of Public Law 117–167)*

18 *and section 223 of the William M. (Mac) Thornberry*

19 *National Defense Authorization Act for Fiscal Year*

20 *2021 (42 U.S.C. 6605).*

21 *"(l) INTELLECTUAL PROPERTY.—The Board shall*

22 *adopt written standards to govern the ownership and licens-*

23 *ing of any intellectual property rights developed by the*

24 *Foundation or derived from the collaborative efforts of the*

25 *Foundation*

1   *"(m) FULL FAITH AND CREDIT.—The United States*

2 *shall not be liable for any debts, defaults, acts, or omissions*

3 *of the Foundation. The full faith and credit of the United*

4 *States shall not extend to any obligations of the Founda-*

5 *tion.*

6   *"(n) SUPPORT SERVICES.—The Secretary, acting*

7 *through the Director, may provide facilities, utilities, and*

8 *support services to the Foundation if it is determined by*

9 *the Director to be advantageous to the research programs*

10 *of the Institute.*

11   *"(o) NONAPPLICABILITY.—Chapter 10 of title 5,*

12 *United States Code, shall not apply to the Foundation.*

13   *"(p) SEPARATE FUND ACCOUNTS.—The Board shall*

14 *ensure that amounts received pursuant to the authorization*

15 *of appropriations under subsection (q) are held in a sepa-*

16 *rate account from any other funds received by the Founda-*

17 *tion.*

18   *"(q) FUNDING; AUTHORIZATION OF APPROPRIA-*

19 *TIONS.—Notwithstanding any other provision of law, from*

20 *amounts authorized to be appropriated for a fiscal year be-*

21 *ginning with fiscal year 2025 to the Secretary of Commerce*

22 *pursuant to section 10211, the Director may transfer not*

23 *less than $500,000 and not more than $1,250,000 to the*

24 *Foundation each such fiscal year.*

25   *"(r) DEFINITIONS.—In this section:*

1   *"(1) BOARD.—The term 'Board' means the*

2   *Board of Directors of the Foundation, established pur-*

3   *suant to subsection (i).*

4   *"(2) DIRECTOR.—The term 'Director' means the*

5   *Director of the National Institute of Standards and*

6   *Technology.*

7   *"(3) FOREIGN COUNTRY OF CONCERN.—The term*

8   *'foreign country of concern' has the meaning given*

9   *such term in section 10638 of the Research and Devel-*

10   *opment, Competition, and Innovation Act (42 U.S.C.*

11   *19237; enacted as part of division B of Public Law*

12   *117–167).*

13   *"(4) FOREIGN ENTITY OF CONCERN.—The term*

14   *'foreign entity of concern' has the meaning given such*

15   *term in section 10638 of the Research and Develop-*

16   *ment, Competition, and Innovation Act (42 U.S.C.*

17   *19237; enacted as part of division B of Public Law*

18   *117–167).*

19   *"(5) FOUNDATION.—The term 'Foundation'*

20   *means the Foundation for Standards and Metrology*

21   *established pursuant to subsection (a).*

22   *"(6) INSTITUTE.—The term 'Institute' means the*

23   *National Institute of Standards and Technology.*

24   *"(7) INSTITUTION OF HIGHER EDUCATION.—The*

25   *term 'institution of higher education' has the meaning*

1 *given such term in section 101 of the Higher Edu-*

2 *cation Act of 1965 (20 U.S.C. 1001).*

3   *"(8) NIST ASSOCIATE.—The term 'NIST asso-*

4 *ciate' means any guest researcher, facility user, vol-*

5 *unteer, or other nonemployee of the National Institute*

6 *of Standards and Technology who conducts research*

7 *or otherwise engages in an authorized activity with*

8 *National Institute of Standards and Technology per-*

9 *sonnel or at a National Institute of Standards and*

10 *Technology facility.*

11   *"(9) RELATIVE.—The term 'relative' has the*

12 *meaning given such term in section 13101 of title 5,*

13 *United States Code.*

14   *"(10) SECRETARY.—The term 'Secretary' means*

15 *the Secretary of Commerce.*

16   *"(11) TECHNICAL STANDARD.—The term 'tech-*

17 *nical standard' has the meaning given such term in*

18 *section 12(d)(5) of the National Technology Transfer*

19 *and Advancement Act of 1995 (15 U.S.C. 272 note).".*

20   *(b) CLERICAL AMENDMENT.—The table of contents in*

21 *section 1 of Public Law 117–167 is amended by inserting*

22 *after the item relating to section 10235 the following new*

23 *item:*

"Sec. 10236. Foundation for Standards and Metrology.".

SEC. 304. PROHIBITION ON CERTAIN POLICIES RELATING

TO THE USE OF ARTIFICIAL INTELLIGENCE

OR OTHER AUTOMATED SYSTEMS.

Not later than 7 days after the date of the enactment

of this Act, the President, acting through the Director of

the Office of Science and Technology Policy, shall issue a

technology directive with respect to artificial intelligence or

other automated systems that prohibits any action, direc-

tive, rule, regulation, policy, principle, or guidance by a

Federal agency that includes policies that require, rec-

ommend, promote, or encourage any of the following con-

cepts or rules:

(1) One race or sex is inherently superior to an-

other race or sex.

(2) The United States is fundamentally racist or

sexist.

(3) An individual, by virtue of his or her race

or sex, is inherently racist, sexist, or oppressive,

whether consciously or unconsciously.

(4) An individual should be discriminated

against or receive adverse treatment solely or partly

because of his or her race or sex.

(5) Members of one race or sex cannot and

should not attempt to treat others without respect to

race or sex.

1   *(6) The moral character of an individual is nec-*

2 *essarily determined by his or her race or sex.*

3   *(7) An individual, by virtue of his or her race*

4 *or sex, bears responsibility for actions committed in*

5 *the past by other members of the same race or sex.*

6   *(8) An individual should feel discomfort, guilt,*

7 *anguish, or another form of psychological distress on*

8 *account of his or her race or sex.*

9   *(9) Meritocracy or traits such as a hard work*

10 *ethic are racist or sexist, or were created by a par-*

11 *ticular race to oppress another.*

12   *(10) Artificial intelligence, algorithms, or other*

13 *automated systems should be designed in an equitable*

14 *way that prevents disparate impacts based on a pro-*

15 *tected class or other societal classification.*

16   *(11) Input data used by designers, developers, or*

17 *deployers of artificial intelligence, algorithms, or*

18 *other automated systems should be modified to pre-*

19 *vent disparate impacts based on a protected class or*

20 *other societal classification.*

21   *(12) Designers, developers, integrators, or*

22 *deployers of artificial intelligence, algorithms, or*

23 *other automated systems should conduct disparate im-*

24 *pact or equity impact assessments prior to deploy-*

25 *ment or implementation of such technology to ensure*

1   *inclusivity and equity in the creation, design, or de-*

2   *velopment of the technology.*

3   *(13) Federal agencies should review input data*

4   *used by designers, developers, or deployers of artificial*

5   *intelligence, algorithms, or other automated systems*

6   *to ensure the technology—*

7   *(A) meets the view of that Federal agency of*

8   *what constitutes bias or misinformation; and*

9   *(B) contains no positions contrary to the*

10   *position of the Federal Government.*

11   ***SEC. 305. CERTIFICATIONS AND AUDITS OF TEMPORARY***

12   ***FELLOWS.***

13   *(a) DEFINITIONS.—In this section:*

14   *(1) AGENCY.—The term "agency" has the mean-*

15   *ing given such term in section 3502 of title 44,*

16   *United States Code.*

17   *(2) COMMITTEES OF JURISDICTION.—The term*

18   *"committees of jurisdiction" means—*

19   *(A) the Committee on Commerce, Science,*

20   *and Transportation and the Committee on En-*

21   *ergy and Natural Resources of the Senate; and*

22   *(B) the Committee on Energy and Com-*

23   *merce and the Committee on Science, Space, and*

24   *Technology of the House of Representatives.*

(3) CRITICAL AND EMERGING TECHNOLOGIES.—
The term "critical and emerging technologies" means
a subset of artificial intelligence and other critical
and emerging technologies included in the list of such
technologies identified and maintained by the Na-
tional Science and Technology Council of the Office of
Science and Technology Policy.

(4) INHERENTLY GOVERNMENTAL FUNCTION.—
The term "inherently governmental function" has the
meaning given such term in section 5 of the Federal
Activities Inventory Reform Act of 1998 (Public Law
105–270; 31 U.S.C. 501 note) and includes the mean-
ing given such term in subpart 7.5 of part 7 of the
Federal Acquisition Regulation, or successor regula-
tion.

(5) TEMPORARY FELLOW.—The term "temporary
fellow", with respect to an agency, means a fellow,
contractor, consultant, or any other person per-
forming work for the agency who is not a Federal
government employee.

(b) CERTIFICATION.—

(1) IN GENERAL.—Prior to performing any work
for an agency under this Act relating to artificial in-
telligence and other critical and emerging tech-
nologies, a temporary fellow and the head of the agen-

1 cy shall sign a certification that the temporary fellow

2 will not perform any inherently governmental func-

3 tions.

4   (2) SUBMITTAL.—Not later than 30 days after

5 the date on which the head of an agency signs a cer-

6 tification under paragraph (1), the head of the agency

7 shall submit a copy of the certification to the Director

8 of the Office of Management and Budget and the

9 chairpersons and ranking members of the committees

10 of jurisdiction.

11 (c) AUDIT.—

12   (1) IN GENERAL.—For each agency using a tem-

13 porary fellow to carry out this Act, the inspector gen-

14 eral of the agency shall perform an annual audit of

15 the use of temporary fellows by the agency, which in-

16 cludes—

17   (A) the number of temporary fellows used

18   by the agency;

19   (B) the entities paying any temporary fel-

20   low for their work for the agency;

21   (C) the work temporary fellows are per-

22   forming for the agency;

23   (D) the authorities under which the agency

24   hired the temporary fellows; and

1   *(E) whether the temporary fellows and the*

2   *agency are complying with the requirements of*

3   *section (b).*

4   *(2) SUBMITTAL TO CONGRESS.—Not later than*

5 *30 days after the date on which the inspector general*

6 *of an agency completes an audit under paragraph*

7 *(1), the head of the agency shall submit to the chair-*

8 *persons and ranking members of the committees of ju-*

9 *risdiction and the Director of the Office of Manage-*

10 *ment and Budget a report containing the findings of*

11 *inspector general with respect to the audit.*

118TH CONGRESS
2D SESSION

S. 4178

A BILL

To establish artificial intelligence standards, metrics, and evaluation tools, to support artificial intelligence research, development, and capacity building activities, to promote innovation in the artificial intelligence industry by ensuring companies of all sizes can succeed and thrive, and for other purposes.

DECEMBER 18 (legislative day, DECEMBER 16), 2024

Reported with an amendment