

AMENDMENT NO. \_\_\_\_\_ Calendar No. \_\_\_\_\_

Purpose: In the nature of a substitute.

**IN THE SENATE OF THE UNITED STATES—118th Cong., 2d Sess.**

**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.

Referred to the Committee on \_\_\_\_\_ and  
ordered to be printed

Ordered to lie on the table and to be printed

AMENDMENT IN THE NATURE OF A SUBSTITUTE intended  
to be proposed by Ms. CANTWELL (for herself and Mr.  
YOUNG)

Viz:

1 Strike all after the enacting clause and insert the fol-  
2 lowing:

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. 1. Short title; table of contents.

## 2

Sec. 2. Sense of Congress.

TITLE I—VOLUNTARY ARTIFICIAL INTELLIGENCE STANDARDS,  
METRICS, EVALUATION TOOLS, TESTBEDS, AND INTER-  
NATIONAL COOPERATION

Sec. 100. Definitions.

Subtitle A—Artificial Intelligence Safety Institute and Testbeds

Sec. 101. Artificial Intelligence Safety Institute.

Sec. 102. Interagency coordination and program to facilitate artificial intelligence testbeds.

Sec. 103. National Institute of Standards and Technology and Department of Energy testbed to identify, test, and synthesize new materials.

Sec. 104. Coordination, reimbursement, and savings provisions.

Sec. 105. Progress report.

Subtitle B—International Cooperation

Sec. 111. International coalitions on innovation, development, and alignment of standards with respect to artificial intelligence.

Subtitle C—Identifying Regulatory Barriers to Innovation

Sec. 121. Comptroller General of the United States identification of risks and obstacles relating to artificial intelligence and Federal agencies.

TITLE II—ARTIFICIAL INTELLIGENCE RESEARCH,  
DEVELOPMENT, CAPACITY BUILDING ACTIVITIES

Sec. 201. Public data for artificial intelligence systems.

Sec. 202. Federal grand challenges in artificial intelligence.

TITLE III—RESEARCH SECURITY AND OTHER MATTERS

Sec. 301. Research security.

Sec. 302. Expansion of authority to hire critical technical experts.

**1 SEC. 2. SENSE OF CONGRESS.**

2 It is the sense of Congress that policies affecting arti-  
3 ficial intelligence should maximize the potential, develop-  
4 ment, and use of artificial intelligence to benefit all private  
5 and public stakeholders.

1 **TITLE I—VOLUNTARY ARTIFI-**  
2 **CIAL INTELLIGENCE STAND-**  
3 **ARDS, METRICS, EVALUATION**  
4 **TOOLS, TESTBEDS, AND**  
5 **INTERNATIONAL COOPERA-**  
6 **TION**

7 **SEC. 100. DEFINITIONS.**

8 In this title:

9 (1) **ARTIFICIAL INTELLIGENCE.**—The term “ar-  
10 tificial intelligence” has the meaning given such  
11 term in section 5002 of the National Artificial Intel-  
12 ligence Initiative Act of 2020 (15 U.S.C. 9401).

13 (2) **ARTIFICIAL INTELLIGENCE MODEL.**—The  
14 term “artificial intelligence model” means a compo-  
15 nent of an artificial intelligence system that is—

16 (A) derived using mathematical, computa-  
17 tional, statistical, or machine-learning tech-  
18 niques; and

19 (B) used as part of an artificial intel-  
20 ligence system to produce outputs from a given  
21 set of inputs.

22 (3) **ARTIFICIAL INTELLIGENCE SYSTEM.**—The  
23 term “artificial intelligence system” means an engi-  
24 neered or machine-based system that—

1 (A) can, for a given set of objectives, gen-  
2 erate outputs such as predictions, recommenda-  
3 tions, or decisions influencing real or virtual en-  
4 vironments; and

5 (B) is designed to operate with varying lev-  
6 els of autonomy.

7 (4) CRITICAL INFRASTRUCTURE.—The term  
8 “critical infrastructure” has the meaning given such  
9 term in section 1016(e) of the Uniting and  
10 Strengthening America by Providing Appropriate  
11 Tools Required to Intercept and Obstruct Terrorism  
12 (USA PATRIOT ACT) Act of 2001 (42 U.S.C.  
13 5195c(e)).

14 (5) FEDERAL LABORATORY.—The term “Fed-  
15 eral laboratory” has the meaning given such term in  
16 section 4 of the Stevenson-Wydler Technology Inno-  
17 vation Act of 1980 (15 U.S.C. 3703).

18 (6) FOUNDATION MODEL.—The term “founda-  
19 tion model” means an artificial intelligence model  
20 trained on broad data at scale and is adaptable to  
21 a wide range of downstream tasks.

22 (7) NATIONAL LABORATORY.—The term “Na-  
23 tional Laboratory” has the meaning given such term  
24 in section 2 of the Energy Policy Act of 2005 (42  
25 U.S.C. 15801).

1           (8) **TESTBED.**—The term “testbed” means a  
2 facility or mechanism equipped for conducting rig-  
3 orous, transparent, and replicable testing of tools  
4 and technologies, including artificial intelligence sys-  
5 tems, to help evaluate the functionality, trust-  
6 worthiness, usability, and performance of those tools  
7 or technologies.

8           **Subtitle A—Artificial Intelligence**  
9           **Safety Institute and Testbeds**

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

11           The National Institute of Standards and Technology  
12 Act (15 U.S.C. 271 et seq.) is amended by inserting after  
13 section 22A (15 U.S.C. 278h–1) the following:

14 **“SEC. 22B. ARTIFICIAL INTELLIGENCE SAFETY INSTITUTE.**

15           “(a) **DEFINITIONS.**—In this section:

16           “(1) **AGENCY.**—The term ‘agency’ has the  
17 meaning given the term ‘Executive agency’ in section  
18 105 of title 5, United States Code.

19           “(2) **ARTIFICIAL INTELLIGENCE.**—The term  
20 ‘artificial intelligence’ has the meaning given such  
21 term in section 5002 of the National Artificial Intel-  
22 ligence Initiative Act of 2020 (15 U.S.C. 9401).

23           “(3) **ARTIFICIAL INTELLIGENCE BLUE-**  
24 **TEAMING.**—The term ‘artificial intelligence blue-  
25 teaming’ means an effort to conduct operational vul-

1 nerability evaluations and provide mitigation tech-  
2 niques to entities who have a need for an inde-  
3 pendent technical review of the security posture of  
4 an artificial intelligence system.

5 “(4) ARTIFICIAL INTELLIGENCE RED-  
6 TEAMING.—The term ‘artificial intelligence red-  
7 teaming’ means structured adversarial testing efforts  
8 of an artificial intelligence system.

9 “(5) FEDERAL LABORATORY.—The term ‘Fed-  
10 eral laboratory’ has the meaning given such term in  
11 section 4 of the Stevenson-Wydler Technology Inno-  
12 vation Act of 1980 (15 U.S.C. 3703).

13 “(6) FOUNDATION MODEL.—The term ‘founda-  
14 tion model’ means an artificial intelligence model  
15 trained on broad data at scale and is adaptable to  
16 a wide range of downstream tasks.

17 “(7) SYNTHETIC CONTENT.—The term ‘syn-  
18 thetic content’ means information, such as images,  
19 videos, audio clips, and text, that has been signifi-  
20 cantly modified or generated by algorithms, includ-  
21 ing by an artificial intelligence system.

22 “(8) TESTBED.—The term ‘testbed’ means a  
23 facility or mechanism equipped for conducting rig-  
24 orous, transparent, and replicable testing of tools  
25 and technologies, including artificial intelligence sys-

1       tems, to help evaluate the functionality, trust-  
2       worthiness, usability, and performance of those tools  
3       or technologies.

4               “(9)           WATERMARKING.—The           term  
5       ‘watermarking’ means the act of embedding informa-  
6       tion that is intended to be difficult to remove, into  
7       outputs generated by artificial intelligence systems  
8       or in original content, including outputs such as  
9       text, images, audio, videos, software code, or any  
10      other digital content or data, for the purposes of  
11      verifying the authenticity of the output or the iden-  
12      tity or characteristics of its provenance, modifica-  
13      tions, or conveyance.

14           “(b) ESTABLISHMENT OF ARTIFICIAL INTELLIGENCE  
15      SAFETY INSTITUTE.—

16               “(1) IN GENERAL.—Not later than 90 days  
17      after the date of the enactment of the Future of Ar-  
18      tificial Intelligence Innovation Act of 2024, the Di-  
19      rector shall establish an institute on artificial intel-  
20      ligence within the Institute.

21               “(2) DESIGNATION.—The institute established  
22      pursuant to paragraph (1) shall be known as the  
23      ‘Artificial Intelligence Safety Institute’.

24               “(3) MISSION.—The mission of the Artificial  
25      Intelligence Safety Institute is to assist the private

1 sector and agencies in developing voluntary best  
2 practices for the robust assessment of artificial intel-  
3 ligence systems, which may be contributed to or in-  
4 form the work on such practices in standards devel-  
5 opment organizations.

6 “(c) FUNCTIONS.—

7 “(1) IN GENERAL.—The functions of the Artifi-  
8 cial Intelligence Safety Institute, which the Artificial  
9 Intelligence Safety Institute shall carry out in co-  
10 ordination with the laboratories of the Institute, in-  
11 clude the following:

12 “(A) Using publicly available or voluntarily  
13 provided information, assessing artificial intel-  
14 ligence systems and developing best practices  
15 for reliable and secure development, deploy-  
16 ment, and use of artificial intelligence tech-  
17 nology.

18 “(B) Supporting artificial intelligence red-  
19 teaming, sharing best practices, and coordi-  
20 nating on building testbeds and test environ-  
21 ments with allies and international partners of  
22 the United States.

23 “(C) Developing and publishing physical  
24 and cybersecurity tools, methodologies, best  
25 practices, voluntary guidelines, and other sup-



1           porting information to assist persons who main-  
2           tain systems used to create or train artificial in-  
3           telligence models with discovering and miti-  
4           gating vulnerabilities and attacks, including ma-  
5           nipulation through data poisoning, including  
6           those that may be exploited by foreign adver-  
7           saries.

8           “(D) Establishing artificial intelligence  
9           blue-teaming capabilities to support mitigation  
10          approaches and partnering with industry to ad-  
11          dress the reliability of artificial intelligence sys-  
12          tems.

13          “(E) Developing tools, methodologies, best  
14          practices, and voluntary guidelines for detecting  
15          synthetic content, authenticating content and  
16          tracking of the provenance of content, labeling  
17          original and synthetic content, such as by  
18          watermarking, and evaluating software and sys-  
19          tems relating to detection and labeling of syn-  
20          thetic content.

21          “(F) Coordinating or developing metrics  
22          and methodologies for testing artificial intel-  
23          ligence systems, including the following:

1                   “(i) Cataloging existing artificial intel-  
2                   ligence metrics and evaluation methodolo-  
3                   gies used in industry and academia.

4                   “(ii) Testing the efficacy of existing  
5                   metrics and evaluations.

6                   “(G) Coordinating with counterpart inter-  
7                   national institutions, partners, and allies, to  
8                   support global interoperability in the develop-  
9                   ment of research and testing of standards relat-  
10                  ing to artificial intelligence.

11               “(d) ARTIFICIAL INTELLIGENCE SAFETY INSTITUTE  
12               CONSORTIUM.—

13               “(1) ESTABLISHMENT.—

14               “(A) IN GENERAL.—Not later than 180  
15               days after the date of the enactment of this  
16               Act, the Director shall establish a consortium of  
17               stakeholders from academic or research commu-  
18               nities, Federal laboratories, private industry, in-  
19               cluding companies of all sizes with different  
20               roles in the use of artificial intelligence systems,  
21               including developers, deployers, evaluators,  
22               users, and civil society with expertise in matters  
23               relating to artificial intelligence to support the  
24               Artificial Intelligence Safety Institute in car-

1           rying out the functions set forth under sub-  
2           section (c).

3                   “(B) DESIGNATION.—The consortium es-  
4           tablished pursuant to subparagraph (A) shall be  
5           known as the ‘Artificial Intelligence Safety In-  
6           stitute Consortium’.

7                   “(2) CONSULTATION.—The Director shall con-  
8           sult with the consortium established under this sub-  
9           section not less frequently than quarterly.

10                   “(3) ANNUAL REPORTS TO CONGRESS.—Not  
11           later than 1 year after the date of the enactment of  
12           the Future of Artificial Intelligence Innovation Act  
13           of 2024 and not less frequently than once each year  
14           thereafter, the Director shall submit to the Com-  
15           mittee on Commerce, Science, and Transportation of  
16           the Senate and the Committee on Science, Space,  
17           and Technology of the House of Representatives a  
18           report summarizing the contributions of the mem-  
19           bers of the consortium established under this sub-  
20           section in support the efforts of the Artificial Intel-  
21           ligence Safety Institute.

22                   “(e) VOLUNTARY ARTIFICIAL INTELLIGENCE TEST-  
23           ING STANDARDS.—In carrying out the functions under  
24           subsection (c), the Director shall support and contribute  
25           to the development of voluntary, consensus-based technical

1 standards for testing artificial intelligence system compo-  
2 nents, including by addressing, as the Director considers  
3 appropriate, the following:

4           “(1) Physical infrastructure for training or de-  
5 veloping artificial intelligence models and systems,  
6 including cloud infrastructure.

7           “(2) Physical infrastructure for operating artifi-  
8 cial intelligence systems, including cloud infrastruc-  
9 ture.

10           “(3) Data for training artificial intelligence  
11 models.

12           “(4) Data for evaluating the functionality and  
13 trustworthiness of trained artificial intelligence mod-  
14 els and systems.

15           “(5) Trained or partially trained artificial intel-  
16 ligence models and any resulting software systems or  
17 products.

18           “(6) Human-in-the-loop testing of artificial in-  
19 telligence models and systems.

20           “(f) MATTERS RELATING TO DISCLOSURE AND AC-  
21 CESS.—

22           “(1) FOIA EXEMPTION.—Any confidential con-  
23 tent, as deemed confidential by the contributing pri-  
24 vate sector person, shall be exempt from public dis-

1 closure under section 552(b)(3) of title 5, United  
2 States Code.

3 “(2) LIMITATION ON ACCESS TO CONTENT.—  
4 Access to a contributing private sector person’s vol-  
5 untarily provided confidential content, as deemed  
6 confidential 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 Direc-  
10 tor may make aggregated, deidentified information  
11 available to contributing companies, the public, and  
12 other agencies, as the Director considers appro-  
13 priate, in 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 en-  
16 forcement authority that was not in effect on the day be-  
17 fore the date of the enactment of the Future of Artificial  
18 Intelligence Innovation Act of 2024.”.

19 **SEC. 102. INTERAGENCY COORDINATION AND PROGRAM TO**  
20 **FACILITATE ARTIFICIAL INTELLIGENCE**  
21 **TESTBEDS.**

22 (a) DEFINITIONS.—In this section:

23 (1) APPROPRIATE COMMITTEES OF CON-  
24 GRESS.—The term “appropriate committees of Con-  
25 gress” means—

1 (A) the Committee on Commerce, Science,  
2 and Transportation and the Committee on En-  
3 ergy and Natural Resources of the Senate; and

4 (B) the Committee on Science, Space, and  
5 Technology of the House of Representatives.

6 (2) DIRECTOR.—The term “Director” means  
7 the Director of the National Science Foundation.

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

10 (4) SECRETARY.—The term “Secretary” means  
11 the Secretary of Energy.

12 (5) UNDER SECRETARY.—The term “Under  
13 Secretary” means the Under Secretary of Commerce  
14 for Standards and Technology.

15 (b) PROGRAM REQUIRED.—Not later than 1 year  
16 after the date of the enactment of this Act, the Under  
17 Secretary and the Secretary, in coordination with the Di-  
18 rector, shall jointly establish a testbed program to encour-  
19 age collaboration and support partnerships between the  
20 National Laboratories, Federal laboratories, the National  
21 Institute of Standards and Technology, the National Arti-  
22 ficial Intelligence Research Resource pilot program estab-  
23 lished by the Director, or any successor program, and pub-  
24 lic and private sector entities, including companies of all  
25 sizes, to conduct tests, evaluations, and security or vulner-

1 ability risk assessments, and to support research and de-  
2 velopment, of artificial intelligence systems, including  
3 measurement methodologies developed by the Institute, in  
4 order to develop standards and encourage development of  
5 a third-party ecosystem.

6 (c) ACTIVITIES.—In carrying out the program re-  
7 quired by subsection (b), the Under Secretary and the Sec-  
8 retary—

9 (1) may use the advanced computing resources,  
10 testbeds, and expertise of the National Laboratories,  
11 Federal laboratories, the Institute, the National  
12 Science Foundation, and private sector entities to  
13 run tests and evaluations on the capabilities and  
14 limitations of artificial intelligence systems;

15 (2) shall use existing solutions to the maximum  
16 extent practicable;

17 (3) shall develop automated and reproducible  
18 tests and evaluations for artificial intelligence sys-  
19 tems to the extent that is practicable;

20 (4) shall assess the computational resources  
21 necessary to run tests and evaluations of artificial  
22 intelligence systems;

23 (5) shall research methods to effectively mini-  
24 mize the computational resources needed to run

1 tests, evaluations, and security assessments of artificial intelligence systems;  
2

3 (6) shall where practicable, develop tests and  
4 evaluations for artificial intelligence systems that are  
5 designed for high-, medium-, and low-computational  
6 intensity; and

7 (7) shall prioritize assessments by identifying  
8 security vulnerabilities of artificial intelligence systems, including the establishment of and utilization  
9 of existing classified testbeds, at the National Laboratories if necessary, including with respect to—  
10

11 (A) autonomous offensive cyber capabilities;  
12  
13

14 (B) cybersecurity vulnerabilities in the artificial intelligence software ecosystem and beyond;  
15  
16

17 (C) chemical, biological, radiological, nuclear, critical infrastructure, and energy-security threats or hazards; and  
18  
19

20 (D) such other capabilities as the Under Secretary or the Secretary determines necessary.  
21  
22

23 (d) CONSIDERATION GIVEN.—In carrying out the activities required by subsection (c), the Under Secretary  
24 and the Secretary shall take under consideration the appli-  
25



1 capability of any tests, evaluations, and risk assessments to  
2 artificial intelligence systems trained using primarily bio-  
3 logical sequence data that could be used to enhance an  
4 artificial intelligence system's ability to contribute to the  
5 creation of a pandemic or biological weapon, including  
6 those systems used for gene synthesis.

7 (e) METRICS.—The Under Secretary and the Sec-  
8 retary shall jointly develop metrics to assess—

9 (1) the effectiveness of the program in encour-  
10 aging collaboration and supporting partnerships as  
11 described in subsection (b); and

12 (2) the impact of the program on public and  
13 private sector integration and use of artificial intel-  
14 ligence systems.

15 (f) USE OF EXISTING PROGRAM.—In carrying out  
16 the program required by subsection (b), the Under Sec-  
17 retary, the Secretary, and the Director may use a program  
18 that was in effect on the day before the date of the enact-  
19 ment of this Act.

20 (g) EVALUATION AND FINDINGS.—Not later than 3  
21 years after the start of the program required by subsection  
22 (b), the Under Secretary and the Secretary shall jointly—

23 (1) evaluate the success of the program in en-  
24 couraging collaboration and supporting partnerships

1 as described in subsection (b), using the metrics de-  
2 veloped pursuant to subsection (e);

3 (2) evaluate the success of the program in en-  
4 couraging public and private sector integration and  
5 use of artificial intelligence systems by using the  
6 metrics developed pursuant to subsection (e); and

7 (3) submit to the appropriate committees of  
8 Congress the evaluation supported pursuant to para-  
9 graph (1) and the findings of the Under Secretary,  
10 the Secretary, and the Director with respect to the  
11 testbed program.

12 (h) CONSULTATION.—In carrying out subsection (b),  
13 the Under Secretary and the Secretary shall consult, as  
14 the Under Secretary and the Secretary consider appro-  
15 priate, with the following:

16 (1) Industry, including private artificial intel-  
17 ligence laboratories, companies of all sizes, and rep-  
18 resentatives from the United States financial sector.

19 (2) Academia and institutions of higher edu-  
20 cation.

21 (3) Civil society.

22 (i) ESTABLISHMENT OF VOLUNTARY FOUNDATION  
23 MODELS TEST PROGRAM.—In carrying out the program  
24 under subsection (b), the Under Secretary and the Sec-  
25 retary shall, jointly carry out a test program to provide

1 vendors of foundation models, as well as vendors of artifi-  
2 cial intelligence virtual agents and robots that incorporate  
3 foundation models, the opportunity to voluntarily test  
4 foundation models across a range of modalities, such as  
5 models that ingest and output text, images, audio, video,  
6 software code, and mixed modalities.

7 (j) MATTERS RELATING TO DISCLOSURE AND AC-  
8 CESS.—

9 (1) LIMITATION ON ACCESS TO CONTENT.—Ac-  
10 ccess to a contributing private sector person’s volun-  
11 tarily provided confidential content, as deemed con-  
12 fidential by the contributing private sector person,  
13 shall be limited to the contributing private sector  
14 person and the Institute.

15 (2) AGGREGATED INFORMATION.—The Under  
16 Secretary and the Secretary may make aggregated,  
17 deidentified information available to contributing  
18 companies, the public, and other agencies, as the  
19 Under Secretary considers appropriate, in support of  
20 the purposes of this section.

21 (3) FOIA EXEMPTION.—Any confidential con-  
22 tent, as deemed confidential by the contributing pri-  
23 vate sector person, shall be exempt from public dis-  
24 closure under section 552(b)(3) of title 5, United  
25 States Code.

1 (k) 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 (l) SUNSET.—The programs required by subsections  
9 (b) and (i) and the requirements of this section shall ter-  
10minate on the date that is 7 years after the date of the  
11 enactment of this Act.

12 **SEC. 103. NATIONAL INSTITUTE OF STANDARDS AND TECH-**  
13 **NOLOGY AND DEPARTMENT OF ENERGY**  
14 **TESTBED TO IDENTIFY, TEST, AND SYN-**  
15 **THESIZE NEW MATERIALS.**

16 (a) IN GENERAL.—The Secretary of Commerce, act-  
17 ing through the Under Secretary of Commerce for Stand-  
18 ards and Technology, and the Secretary of Energy may  
19 use the program established under section 102(b) to ad-  
20 vance materials science and to support advanced manufac-  
21 turing for the benefit of the United States economy  
22 through the use of artificial intelligence, autonomous lab-  
23 oratories, and artificial intelligence integrated with emerg-  
24 ing technologies, such as quantum hybrid computing and  
25 robotics.

1 (b) SUPPORT FOR ACCELERATED TECHNOLOGIES.—

2 The Secretary of Commerce and the Secretary of Energy  
3 shall ensure that technologies accelerated under subsection  
4 (a) are supported by advanced algorithms and models, un-  
5 certainty quantification, and software and workforce de-  
6 velopment tools to produce benchmark data, model com-  
7 parison tools, and best practices guides.

8 (c) PUBLIC-PRIVATE PARTNERSHIPS.—In carrying  
9 out subsection (a), the Secretary of Commerce and the  
10 Secretary of Energy shall, in consultation with industry,  
11 civil society, and academia, enter into such public-private  
12 partnerships as the Secretaries jointly determine appro-  
13 priate.

14 (d) RESOURCES.—In carrying out this section, the  
15 Secretaries may—

16 (1) use science and technology resources from  
17 the Manufacturing USA Program, the Hollings  
18 Manufacturing Extension Partnership, the National  
19 Laboratories, Federal laboratories, and the private  
20 sector; and

21 (2) the program established under section  
22 102(b).

1 **SEC. 104. COORDINATION, REIMBURSEMENT, AND SAVINGS**  
2 **PROVISIONS.**

3 (a) COORDINATION AND DUPLICATION.—The Sec-  
4 retary of Commerce shall take such actions as may be nec-  
5 essary to ensure no duplication of activities carried out  
6 under this subtitle with the activities of—

7 (1) research entities of the Department of En-  
8 ergy, including—

9 (A) the National Laboratories; and

10 (B) the Advanced Scientific Computing  
11 Research program; and

12 (2) relevant industries.

13 (b) NATIONAL LABORATORY RESOURCES.—Any ad-  
14 vanced computing resources, testbeds, expertise, or other  
15 resources of the Department of Energy or the National  
16 Laboratories that are provided to the National Science  
17 Foundation, the National Institute of Standards and  
18 Technology, or any other applicable entities under this  
19 subtitle shall be provided—

20 (1) on a reimbursable basis; and

21 (2) pursuant to a reimbursable agreement.

22 (c) WAIVER.—The Secretary may waive the require-  
23 ments set forth in subsection (b) if the Secretary deter-  
24 mines the waiver is necessary or appropriate to carry out  
25 the missions of the Department of Commerce.

1 (d) SAVINGS PROVISION.—Nothing in this subtitle  
2 shall be construed—

3 (1) to modify any requirement or authority pro-  
4 vided under section 5501 of the National Artificial  
5 Intelligence Initiative Act of 2020 (15 U.S.C. 9461);  
6 or

7 (2) to allow the Secretary of Commerce (includ-  
8 ing the Under Secretary of Commerce for Standards  
9 and Technology or the Director of the Artificial In-  
10 telligence Safety Institute) or the Director of the  
11 National Science Foundation to use monetary re-  
12 sources of the Department of Energy or any Na-  
13 tional Laboratory.

14 **SEC. 105. PROGRESS REPORT.**

15 (a) IN GENERAL.—Not later than 1 year after the  
16 date of the enactment of this Act, the Under Secretary  
17 of Commerce for Standards and Technology shall, in co-  
18 ordination with the Secretary of Commerce and the Sec-  
19 retary of Energy, submit to Congress a report on the im-  
20 plementation of sections 102 and 103.

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

23 (1) A description of the reimbursable agree-  
24 ments, statements of work, and associated project  
25 schedules and deliverables for the testbed program

1 established pursuant to section 102(b) and section  
2 103(a).

3 (2) Details on the total amount of reimbursable  
4 agreements entered into pursuant to section 104(b).

5 (3) Such additional information as the Under  
6 Secretary determines appropriate.

## 7 **Subtitle B—International** 8 **Cooperation**

### 9 **SEC. 111. INTERNATIONAL COALITIONS ON INNOVATION,** 10 **DEVELOPMENT, AND ALIGNMENT OF STAND-** 11 **ARDS WITH RESPECT TO ARTIFICIAL INTEL-** 12 **LIGENCE.**

13 (a) **IN GENERAL.**—The Under Secretary of Com-  
14 merce for Standards and Technology (in this section re-  
15 ferred to as the “Under Secretary”) and the Secretary of  
16 Energy (in this section referred to as the “Secretary”)   
17 shall jointly lead information exchange and coordination  
18 among Federal agencies and communication from Federal  
19 agencies to the private sector of the United States and  
20 like-minded governments of foreign countries to ensure ef-  
21 fective Federal engagement in the development and use  
22 of international technical standards for artificial intel-  
23 ligence.

24 (b) **REQUIREMENTS.**—To support private sector-led  
25 engagement and ensure effective Federal engagement in



1 the development and use of international technical stand-  
2 ards for artificial intelligence, the Under Secretary shall  
3 seek to form alliances or coalitions with like-minded gov-  
4 ernments of foreign countries—

5 (1) to support the private sector-led develop-  
6 ment and adoption of standards or alignment with  
7 respect to artificial intelligence;

8 (2) to encourage the adoption of technical  
9 standards developed in the United States to be  
10 adopted by international standards organizations;

11 (3) to facilitate international collaboration on  
12 innovation, science, and advancement in artificial in-  
13 telligence research and development, including data  
14 sharing, expertise, and resources; and

15 (4) to develop the government-to-government  
16 infrastructure to support the activities described in  
17 paragraphs (1) through (3), using existing bilateral  
18 and multilateral agreements to the extent prac-  
19 ticable.

20 (c) CRITERIA FOR PARTICIPATION.—In forming an  
21 alliance or coalition of like-minded governments of foreign  
22 countries under subsection (b), the Secretary of Com-  
23 merce, the Secretary of Energy, the Secretary of State,  
24 and the Director, in consultation with the heads of rel-

1 evant agencies, shall jointly establish technology trust cri-  
2 teria—

3           (1) to ensure all partner countries have a high  
4 level of scientific and technological advancement;  
5 and

6           (2) to support the principles for international  
7 standards development as detailed in the Committee  
8 Decision on World Trade Organization Agreement  
9 on Technical Barriers to Trade (Annex 2 of Part 1  
10 of G/TBT/1), on international standards, such as  
11 transparency, openness, and consensus-based deci-  
12 sion-making.

13           (d) CONSULTATION ON INNOVATION AND ADVANCE-  
14 MENTS IN ARTIFICIAL INTELLIGENCE.—In forming an al-  
15 liance or coalition under subsection (b), the Director, the  
16 Secretary of Commerce, and the Secretary of State shall  
17 consult with the Secretary of Energy and the Director of  
18 the National Science Foundation on approaches to innova-  
19 tion and advancements in artificial intelligence.

20           (e) SECURITY AND PROTECTION OF INTELLECTUAL  
21 PROPERTY.—The Director, the Secretary of Commerce,  
22 the Secretary of Energy, and the Secretary of State shall  
23 jointly ensure that an alliance or coalition formed under  
24 subsection (b) is only undertaken with countries that—

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

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

9 (f) RULE OF CONSTRUCTION.—Nothing in this sec-  
10 tion shall be construed—

11 (1) to prohibit a person (as defined in section  
12 551 of title 5, United States Code) from partici-  
13 pating in an international standards body; or

14 (2) to constrain separate engagement with  
15 emerging economies on artificial intelligence.

## 16 **Subtitle C—Identifying Regulatory** 17 **Barriers to Innovation**

### 18 **SEC. 121. COMPTROLLER GENERAL OF THE UNITED** 19 **STATES IDENTIFICATION OF RISKS AND OB-** 20 **STACLES RELATING TO ARTIFICIAL INTEL-** 21 **LIGENCE AND FEDERAL AGENCIES.**

22 (a) REPORT REQUIRED.—Not later than 1 year after  
23 the date of the enactment of this Act, the Comptroller  
24 General of the United States shall submit to Congress a

1 report on regulatory impediments to innovation in artifi-  
2 cial intelligence systems.

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

5 (1) Significant examples of Federal statutes  
6 and regulations that directly affect the innovation of  
7 artificial intelligence systems, including the ability of  
8 companies of all sizes to compete in artificial intel-  
9 ligence, which should also account for the effect of  
10 voluntary standards and best practices developed  
11 with contributions from the Federal Government.

12 (2) An evaluation of the progress in government  
13 adoption of artificial intelligence and use of artificial  
14 intelligence to improve the quality of government  
15 services.

16 (3) Based on the findings of the Comptroller  
17 General with respect to paragraphs (1) and (2), such  
18 recommendations as the Comptroller General may  
19 have for legislative or administrative action to in-  
20 crease the rate of innovation in artificial intelligence  
21 systems.

1 **TITLE II—ARTIFICIAL INTEL-**  
2 **LIGENCE RESEARCH, DEVEL-**  
3 **OPMENT, CAPACITY BUILD-**  
4 **ING ACTIVITIES**

5 **SEC. 201. PUBLIC DATA FOR ARTIFICIAL INTELLIGENCE**  
6 **SYSTEMS.**

7 (a) IN GENERAL.—Title LI of the National Artificial  
8 Intelligence Initiative Act of 2020 (15 U.S.C. 9411 et  
9 seq.) is amended by adding at the end the following new  
10 section:

11 **“SEC. 5103A. PUBLIC DATA FOR ARTIFICIAL INTELLIGENCE**  
12 **SYSTEMS.**

13 “(a) LIST OF PRIORITIES.—

14 “(1) IN GENERAL.—To expedite the develop-  
15 ment of artificial intelligence systems in the United  
16 States, the Director of the Office of Science and  
17 Technology Policy (in this section referred to as the  
18 ‘Director’) shall, acting through the National  
19 Science and Technology Council and the Interagency  
20 Committee and in consultation with the Advisory  
21 Committee on Data for Evidence Building estab-  
22 lished under section 315 of title 5, United States  
23 Code, develop a list of priorities for Federal invest-  
24 ment in creating or improving curated, publicly  
25 available Federal Government data for training and

1       evaluating artificial intelligence systems and identify  
2       an appropriate location to host curated datasets.

3               “(2) REQUIREMENTS.—

4                       “(A) IN GENERAL.—The list developed  
5                       pursuant 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  
10                              independently receive sufficient private sec-  
11                              tor 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-sized United  
9           States businesses.

10           “(D) Opportunities to improve datasets in  
11           effect before the date of the enactment of the  
12           Future of Artificial Intelligence Innovation Act  
13           of 2024.

14           “(E) Inclusion of data representative of  
15           the entire population of the United States.

16           “(F) Potential national security threats to  
17           releasing datasets, consistent with the United  
18           States Government approach to data flows.

19           “(G) Requirements of laws in effect.

20           “(H) Applicability to the priorities listed in  
21           the National Artificial Intelligence Research  
22           and Development Strategic Plan of the Na-  
23           tional Science and Technology Council, dated  
24           October 2016.

1           “(I) Ability to use data already made avail-  
2           able to the National Artificial Intelligence Re-  
3           search Resource Pilot program or any successor  
4           program.

5           “(4) PUBLIC INPUT.—Before finalizing the list  
6           required by paragraph (1), the Director shall imple-  
7           ment public comment procedures for receiving input  
8           and comment from private industry, academia, civil  
9           society, and other relevant stakeholders.

10          “(b) INTERAGENCY COMMITTEE.—In carrying out  
11 this section, the Interagency Committee—

12           “(1) may establish or leverage existing initia-  
13           tives, including through public-private partnerships,  
14           for the creation or improvement of curated datasets  
15           identified in the list developed pursuant to sub-  
16           section (a)(1), including methods for addressing  
17           data scarcity;

18           “(2) may apply the priorities set forth in the  
19           list developed pursuant to subsection (a)(1) to the  
20           enactment of Federal public access and open govern-  
21           ment data policies;

22           “(3) shall ensure consistency with Federal pro-  
23           visions of law relating to privacy, including the tech-  
24           nology and privacy standards applied to the National  
25           Secure Data Service under section 10375(f) of the



1       Research and Development, Competition, and Inno-  
2       vation Act (42 U.S.C. 19085(f)); and

3               “(4) shall ensure data sharing is limited with  
4       any country that the Secretary of Commerce, in con-  
5       sultation with the Secretary of Defense, the Sec-  
6       retary of State, the Secretary of Energy, and the Di-  
7       rector of National Intelligence, determines to be en-  
8       gaged in conduct that is detrimental to the national  
9       security or foreign policy of the United States.

10       “(c) AVAILABILITY OF DATASETS.—Datasets that  
11       are created or improved pursuant to this section—

12               “(1) shall, in the case of a dataset created or  
13       improved by a Federal agency, be made available to  
14       the comprehensive data inventory developed and  
15       maintained by the Federal agency pursuant to sec-  
16       tion 3511(a) of title 44, United States Code, in ac-  
17       cordance with all applicable regulations; and

18               “(2) may be made available to the National Ar-  
19       tificial Intelligence Research Resource pilot program  
20       established by the Director of the National Science  
21       Foundation, and the applicable programs established  
22       by the Department of Energy, in accordance with  
23       Executive Order 14110 (88 Fed. Reg. 75191; relat-  
24       ing to safe, secure, and trustworthy development and

1 use of artificial intelligence), or any successor pro-  
2 gram.

3 “(d) REPORT.—Not later than 1 year after the date  
4 of the enactment of the Future of Artificial Intelligence  
5 Innovation Act of 2024, the Director shall, acting through  
6 the National Science and Technology Council and the  
7 Interagency Committee, submit to the Committee on Com-  
8 merce, Science, and Transportation of the Senate and the  
9 Committee on Science, Space, and Technology of the  
10 House of Representatives a report that includes—

11 “(1) best practices in developing publicly  
12 curated artificial intelligence datasets;

13 “(2) lessons learned and challenges encountered  
14 in developing the curated artificial intelligence  
15 datasets;

16 “(3) principles used for artificial intelligence-  
17 ready data; and

18 “(4) recommendations related to artificial intel-  
19 ligence-ready data standards and potential processes  
20 for development of such standards.

21 “(e) RULES OF CONSTRUCTION.—

22 “(1) IN GENERAL.—Nothing in this section  
23 shall be construed to require the Federal Govern-  
24 ment or other contributors to disclose any informa-  
25 tion—

1           “(A) relating to a trade secret or other  
2           protected intellectual property right;

3           “(B) that is confidential business informa-  
4           tion; or

5           “(C) that is privileged.

6           “(2) DISCLOSURE TO PUBLIC DATASETS.—Ex-  
7           cept as specifically provided for in this section, noth-  
8           ing in this section shall be construed to prohibit the  
9           head of a Federal agency from withholding informa-  
10          tion from a public dataset.”.

11          (b) CLERICAL AMENDMENTS.—The table of contents  
12          at the beginning of section 2 of the William M. (Mac)  
13          Thornberry National Defense Authorization Act for Fiscal  
14          Year 2021 and the table of contents at the beginning of  
15          title LI of such Act are both amended by inserting after  
16          the items relating to section 5103 the following new item:

“5103A. Public data for artificial intelligence systems.”.

17          **SEC. 202. FEDERAL GRAND CHALLENGES IN ARTIFICIAL IN-**  
18                               **TELLIGENCE.**

19          (a) IN GENERAL.—Title LI of the National Artificial  
20          Intelligence Initiative Act of 2020 (15 U.S.C. 9411 et  
21          seq.), as amended by section 201, is further amended by  
22          adding at the end the following new section:

23          **“SEC. 5107. FEDERAL GRAND CHALLENGES IN ARTIFICIAL**  
24                               **INTELLIGENCE.**

25          “(a) ESTABLISHMENT OF PROGRAM.—

1           “(1) IN GENERAL.—Not later than 1 year after  
2           the date of the enactment of the Future of Artificial  
3           Intelligence Innovation Act of 2024, the Director of  
4           the Office of Science and Technology Policy (acting  
5           through the National Science and Technology Coun-  
6           cil) and the Interagency Committee may establish a  
7           program to award prizes, using the authorities and  
8           processes established under section 24 of the Steven-  
9           son-Wylder Technology Innovation Act of 1980 (15  
10          U.S.C. 3719), to eligible participants as determined  
11          by the co-chairs of the Interagency Committee pur-  
12          suant to subsection (e).

13           “(2) PURPOSES.—The purposes of the program  
14          required by paragraph (1) are as follows:

15                   “(A) To expedite the development of artifi-  
16                   cial intelligence systems in the United States.

17                   “(B) To stimulate artificial intelligence re-  
18                   search, development, and commercialization  
19                   that solves or advances specific, well-defined,  
20                   and measurable challenges in 1 or more of the  
21                   categories established pursuant to subsection  
22                   (b).

23          “(b) FEDERAL GRAND CHALLENGES IN ARTIFICIAL  
24          INTELLIGENCE.—

1           “(1) LIST OF PRIORITIES.—The Director of the  
2           Office of Science and Technology Policy (acting  
3           through the National Science and Technology Coun-  
4           cil) and the Interagency Committee and in consulta-  
5           tion with industry, civil society, and academia, iden-  
6           tify, and annually review and update as the Director  
7           considers appropriate, a list of priorities for Federal  
8           grand challenges in artificial intelligence pursuant to  
9           the purposes set forth under subsection (a)(2).

10           “(2) INITIAL LIST.—

11           “(A) CONTENTS.—The list established  
12           pursuant to paragraph (1) may include the fol-  
13           lowing priorities:

14           “(i) To overcome challenges with engi-  
15           neering of and applied research on micro-  
16           electronics, including through integration  
17           of artificial intelligence with emerging  
18           technologies, such as neuromorphic and  
19           quantum computing, or with respect to the  
20           physical limits on transistors, advanced  
21           interconnects, and memory elements.

22           “(ii) To promote transformational or  
23           long-term advancements in computing and  
24           artificial intelligence technologies  
25           through—

1                   “(I) next-generation algorithm  
2 design;

3                   “(II) next-generation compute  
4 capability;

5                   “(III) generative and adaptive  
6 artificial intelligence for design appli-  
7 cations;

8                   “(IV) photonics-based micro-  
9 processors and optical communication  
10 networks, including electrophotonics;

11                   “(V) the chemistry and physics  
12 of new materials;

13                   “(VI) energy use or energy effi-  
14 ciency;

15                   “(VII) techniques to establish  
16 cryptographically secure content prov-  
17 enance information; or

18                   “(VIII) safety and controls for  
19 artificial intelligence applications.

20                   “(iii) To develop artificial intelligence  
21 solutions, including through integration  
22 among emerging technologies such as  
23 neuromorphic and quantum computing to  
24 overcome barriers relating to innovations

1 in advanced manufacturing in the United  
2 States, including areas such as—

3 “(I) materials, nanomaterials,  
4 and composites;

5 “(II) rapid, complex design;

6 “(III) sustainability and environ-  
7 mental impact of manufacturing oper-  
8 ations;

9 “(IV) predictive maintenance of  
10 machinery;

11 “(V) improved part quality;

12 “(VI) process inspections;

13 “(VII) worker safety; and

14 “(VIII) robotics.

15 “(iv) To develop artificial intelligence  
16 solutions in sectors of the economy, such  
17 as expanding the use of artificial intel-  
18 ligence in maritime vessels, including in  
19 navigation and in the design of propulsion  
20 systems and fuels.

21 “(v) To develop artificial intelligence  
22 solutions to improve border security, in-  
23 cluding solutions relevant to the detection  
24 of fentanyl, illicit contraband, and other il-  
25 legal activities.

1                   “(vi) To develop artificial intelligence  
2                   for science applications.

3                   “(3) CONSULTATION ON IDENTIFICATION AND  
4                   SELECTION OF GRAND CHALLENGES.—The Director  
5                   of the Office of Science and Technology Policy, the  
6                   Director of the National Institute of Standards and  
7                   Technology, the Director of the Defense Advanced  
8                   Research Projects Agency, such agency heads as the  
9                   Director of the Office of Science and Technology  
10                  Policy considers relevant, and the National Artificial  
11                  Intelligence Advisory Committee shall each identify  
12                  and select artificial intelligence research and devel-  
13                  opment grand challenges in which eligible partici-  
14                  pants will compete to solve or advance for prize  
15                  awards under subsection (a).

16                  “(4) PUBLIC INPUT ON IDENTIFICATION.—The  
17                  Director of the Office of Science and Technology  
18                  Policy shall also seek public input on the identifica-  
19                  tion of artificial intelligence research and develop-  
20                  ment grand challenges under subsection (a).

21                  “(5) PROBLEM STATEMENTS; SUCCESS  
22                  METRICS.—For each priority for a Federal grand  
23                  challenge identified under paragraph (1) and the  
24                  grand challenges identified and selected under para-



1 graph (3), the Director of the Office of Science and  
2 Technology Policy shall—

3 “(A) establish a specific and well-defined  
4 grand challenge problem statement and ensure  
5 that such problem statement is published on a  
6 website linking out to relevant prize competition  
7 listings on the website Challenge.gov, or suc-  
8 cessor website, that is managed by the General  
9 Services Administration; and

10 “(B) establish and publish on the website  
11 Challenge.gov, or successor website, clear tar-  
12 gets, success metrics, and validation protocols  
13 for the prize competitions designed to address  
14 each grand challenge, in order to provide spe-  
15 cific benchmarks that will be used to evaluate  
16 submissions to the prize competition.

17 “(c) FEDERAL INVESTMENT INITIATIVES AUTHOR-  
18 IZED.—Subject to the availability of amounts appropriated  
19 for this purpose, the Secretary of Commerce, the Sec-  
20 retary of Transportation, the Director of the National  
21 Science Foundation may, consistent with the missions or  
22 responsibilities of each Federal agency, establish 1 or more  
23 prize competitions under section 24 of the Stevenson-  
24 Wydler Technology Innovation Act of 1980 (15 U.S.C.  
25 3719), challenge-based acquisitions, or other research and

1 development investments that each agency head deems ap-  
2 propriate consistent with the list of priorities established  
3 pursuant to subsection (b)(1).

4 “(d) REQUIREMENTS.—

5 “(1) IN GENERAL.—The Director of the Office  
6 of Science and Technology Policy shall develop re-  
7 quirements for—

8 “(A) the process for prize competitions  
9 under subsections (a) and (c), including eligi-  
10 bility criteria for participants, consistent with  
11 the requirements under paragraph (2); and

12 “(B) testing, judging, and verification pro-  
13 cedures for submissions to receive a prize award  
14 under subsection (c).

15 “(2) ELIGIBILITY REQUIREMENT AND JUDG-  
16 ING.—

17 “(A) ELIGIBILITY.—In accordance with  
18 the requirement described in section 24(g)(3) of  
19 the Stevenson-Wydler Technology Innovation  
20 Act of 1980 (15 U.S.C. 3719(g)(3)), a recipient  
21 of a prize award under subsection (c)—

22 “(i) that is a private entity shall be  
23 incorporated in and maintain a primary  
24 place of business in the United States; and

1                   “(ii) who is an individual, whether  
2                   participating singly or in a group, shall be  
3                   a citizen or permanent resident of the  
4                   United States.

5                   “(B) JUDGES.—In accordance with section  
6                   24(k) of the Stevenson-Wydler Technology In-  
7                   novation Act of 1980 (15 U.S.C. 3719(k)), a  
8                   judge of a prize competition under subsection  
9                   (c) may be an individual from the private sec-  
10                  tor.

11                  “(3) AGENCY LEADERSHIP.—Each agency head  
12                  carrying out an investment initiative under sub-  
13                  section (c) shall ensure that—

14                         “(A) for each prize competition or invest-  
15                         ment initiative carried out by the agency head  
16                         under such subsection, there is—

17                                 “(i) a positive impact on the economic  
18                                 competitiveness of the United States;

19                                 “(ii) a benefit to United States indus-  
20                                 try;

21                                 “(iii) to the extent possible, leveraging  
22                                 of the resources and expertise of industry  
23                                 and philanthropic partners in shaping the  
24                                 investments; and

1                   “(iv) in a case involving development  
2                   and manufacturing, use of advanced manu-  
3                   facturing in the United States; and

4                   “(B) all research conducted for purposes of  
5                   the investment initiative is conducted in the  
6                   United States.

7                   “(e) REPORTS.—

8                   “(1) NOTIFICATION OF WINNING SUBMIS-  
9                   SION.—Not later than 60 days after the date on  
10                  which a prize is awarded under subsection (c), the  
11                  agency head awarding the prize shall submit to the  
12                  Committee on Commerce, Science, and Transpor-  
13                  tation of the Senate, the Committee on Science,  
14                  Space, and Technology of the House of Representa-  
15                  tives, and such other committees of Congress as the  
16                  agency head considers relevant a report that de-  
17                  scribes the winning submission to the prize competi-  
18                  tion and its benefits to the United States.

19                  “(2) BIENNIAL REPORT.—

20                  “(A) IN GENERAL.—Not later than 2 years  
21                  after the date of the enactment of the Future  
22                  of Artificial Intelligence Innovation Act of  
23                  2024, and biennially thereafter, the heads of  
24                  agencies described in subsection (c) shall sub-  
25                  mit to the Committee on Commerce, Science,

1 and Transportation of the Senate, the Com-  
2 mittee on Science, Space, and Technology of  
3 the House of Representatives, and such other  
4 committees of Congress as the agency heads  
5 consider relevant a report that includes—

6 “(i) a description of the activities car-  
7 ried out by the agency heads under this  
8 section;

9 “(ii) a description of the active com-  
10 petitions and the results of completed com-  
11 petitions under subsection (c); and

12 “(iii) efforts to provide information to  
13 the public on active competitions under  
14 subsection (c) to encourage participation.

15 “(B) PUBLIC ACCESSIBILITY.—The agency  
16 heads described in subsection (c) shall make the  
17 biennial report required under subparagraph  
18 (A) publicly accessible, including by posting the  
19 biennial report on a website in an easily acces-  
20 sible location, such as the GovInfo website of  
21 the Government Publishing Office.

22 “(f) ACCESSIBILITY.—In carrying out any competi-  
23 tion under subsection (c), the head of an agency shall post  
24 the active prize competitions and available prize awards  
25 under subsection (b) to Challenge.gov, or successor

1 website, after the grand challenges are selected and the  
2 prize competitions are designed pursuant to subsections  
3 (c) and (e) to ensure the prize competitions are widely ac-  
4 cessible to eligible participants.

5 “(g) SUNSET.—This section shall terminate on the  
6 date that is 5 years after the date of the enactment the  
7 Future of Artificial Intelligence Innovation Act of 2024.”.

8 (b) COMPTROLLER GENERAL OF THE UNITED  
9 STATES STUDIES AND REPORTS.—

10 (1) INITIAL STUDY.—

11 (A) IN GENERAL.—Not later than 1 year  
12 after the date of enactment of this Act, the  
13 Comptroller General of the United States shall  
14 conduct a study of Federal prize competitions,  
15 which shall include an assessment of the effi-  
16 cacy and impact of prize competitions generally.

17 (B) ELEMENTS.—The study conducted  
18 under subparagraph (A) shall include, to the  
19 extent practicable, the following:

20 (i) A survey of all existing, current  
21 and ongoing Federal prize competitions  
22 carried out under authorities enacted be-  
23 fore the date of the enactment of this Act.

1 (ii) An assessment of those existing,  
2 current, and ongoing Federal prize com-  
3 petitions that includes addressing—

4 (I) whether and what technology  
5 or innovation would have been devel-  
6 oped in the absence of the prize com-  
7 petitions;

8 (II) whether the prize competi-  
9 tions shortened the timeframe for the  
10 development of the technology or in-  
11 novation;

12 (III) whether the prize competi-  
13 tion was cost effective;

14 (IV) what, if any, other benefits  
15 were gained from conducting the prize  
16 competitions;

17 (V) whether the use of a more  
18 traditional policy tool such as a grant  
19 or contract have resulted in the devel-  
20 opment of a similar technology or in-  
21 novation;

22 (VI) whether prize competitions  
23 might be designed differently in a way  
24 that would result in a more effective

1 or revolutionary technology being de-  
2 veloped;

3 (VII) what are appropriate  
4 metrics that could be used for deter-  
5 mining the success of a prize competi-  
6 tion, and whether those metrics differ  
7 when evaluating near-term and long-  
8 term impacts of prize competitions;  
9 and

10 (VIII) suggested best practices of  
11 prize competitions.

12 (C) CONGRESSIONAL BRIEFING.—Not later  
13 than 540 days after the date of the enactment  
14 of this Act, the Comptroller General shall pro-  
15 vide the Committee on Science, Space, and  
16 Technology and the Committee on Energy and  
17 Natural Resources of the Senate and the Com-  
18 mittee on Energy and Commerce of the House  
19 of Representatives a briefing on the findings of  
20 the Comptroller General with respect to the  
21 study conducted under subparagraph (A).

22 (D) REPORT.—Not later than 540 days  
23 after the date of the enactment of this Act, the  
24 Comptroller General shall submit to the con-  
25 gressional committees specified in subparagraph



1 (C) a report on the findings and recommenda-  
2 tions of Comptroller General from the study  
3 conducted under subparagraph (A).

4 (2) INTERIM STUDY.—

5 (A) IN GENERAL.—The Comptroller Gen-  
6 eral of the United States shall conduct a study  
7 of the Federal prize challenges implemented  
8 under section 5108 of the of the National Arti-  
9 ficial Intelligence Initiative Act of 2020, as  
10 added by subsection (a), which shall include an  
11 assessment of the efficacy and effect of such  
12 prize competitions.

13 (B) ELEMENTS.—The study conducted  
14 under subparagraph (A) shall include, to the  
15 extent practicable, the following:

16 (i) A survey of all Federal prize com-  
17 petitions implemented under section 5108  
18 of the of the National Artificial Intelligence  
19 Initiative Act of 2020, as added by sub-  
20 section (a).

21 (ii) An assessment of the Federal  
22 prize competitions implemented such sec-  
23 tion, which shall include addressing the  
24 same considerations as set forth under  
25 paragraph (1)(B)(ii).

1 (iii) An assessment of the efficacy, im-  
2 pact, and cost-effectiveness of prize com-  
3 petitions implemented under section 5108  
4 of the of the National Artificial Intelligence  
5 Initiative Act of 2020, as added by sub-  
6 section (a), compared to other Federal  
7 prize competitions.

8 (C) CONGRESSIONAL BRIEFING.—Not later  
9 than 1 year after completing the study required  
10 by subparagraph (A), the Comptroller General  
11 shall provide the Committee on Science, Space,  
12 and Technology and the Committee on Energy  
13 and Natural Resources of the Senate and the  
14 Committee on Energy and Commerce of the  
15 House of Representatives a briefing on the find-  
16 ings of the Comptroller General with respect to  
17 the study conducted under subparagraph (A).

18 (D) REPORT.—Not later than 180 days  
19 after the date of the enactment of this Act, the  
20 Comptroller General shall submit to the con-  
21 gressional committees specified in subparagraph  
22 (C) a report on the findings and recommenda-  
23 tions of the Comptroller General with respect to  
24 the study conducted under subparagraph (A).

1 (c) CLERICAL AMENDMENTS.—The table of contents  
2 at the beginning of section 2 of the William M. (Mac)  
3 Thornberry National Defense Authorization Act for Fiscal  
4 Year 2021 and the table of contents at the beginning of  
5 title LI of such Act, as amended by section 201, are both  
6 amended by inserting after the items relating to section  
7 5107 the following new item:

“5107. Federal grand challenges in artificial intelligence.”.

8 **TITLE III—RESEARCH SECURITY**  
9 **AND OTHER MATTERS**

10 **SEC. 301. RESEARCH SECURITY.**

11 The activities authorized under this Act shall be car-  
12 ried out in accordance with the provision of subtitle D of  
13 title VI of the Research and Development, Competition,  
14 and Innovation Act (42 U.S.C. 19231 et seq.; enacted as  
15 part of division B of Public Law 117–167) and section  
16 223 of the William M. (Mac) Thornberry National De-  
17 fense Authorization Act for Fiscal Year 2021 (42 U.S.C.  
18 6605).

19 **SEC. 302. EXPANSION OF AUTHORITY TO HIRE CRITICAL**  
20 **TECHNICAL EXPERTS.**

21 (a) IN GENERAL.—Subsection (b) of section 6 of the  
22 National Institute of Standards and Technology Act (15  
23 U.S.C. 275) is amended, in the second sentence, by strik-  
24 ing “15” and inserting “30

1           (b) MODIFICATION OF SUNSET.—Subsection (c) of  
2 such section is amended by striking “under section (b)  
3 shall expire on the date that is 5 years after the date of  
4 the enactment of this section” and inserting “under sub-  
5 section (b) shall expire on December 30, 2035”.