



AMENDMENT NO. _____ Calendar No. _____

Purpose: In the nature of a substitute.

IN THE SENATE OF THE UNITED STATES—119th Cong., 2d Sess.

S. 3597

To reauthorize the National Quantum Initiative Act, 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 Mr. YOUNG (for himself and Ms.
CANTWELL)

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 “National Quantum Initiative Reauthorization Act of
6 2026”.

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

- Sec. 1. Short title; table of contents.
- Sec. 2. Definitions.
- Sec. 3. Purposes.
- Sec. 4. National Quantum Initiative Program.
- Sec. 5. National Quantum Coordination Office.
- Sec. 6. Subcommittee on Quantum Information Science.
- Sec. 7. National Quantum Initiative Advisory Committee.

- Sec. 8. Subcommittee on the Economic and Security Implications of Quantum Information Science.
- Sec. 9. International Quantum Cooperation Strategy.
- Sec. 10. Prize challenges.
- Sec. 11. Sunset of National Quantum Initiative.
- Sec. 12. National Institute of Standards and Technology activities and quantum consortium.
- Sec. 13. National Institute of Standards and Technology Quantum Centers.
- Sec. 14. National Science Foundation Quantum Information Science Research and Education Activities.
- Sec. 15. Multidisciplinary Centers for Quantum Research and Education.
- Sec. 16. Quantum testbeds; research security.
- Sec. 17. National Science Foundation cryptography research.
- Sec. 18. National Aeronautics and Space Administration quantum activities.
- Sec. 19. Comptroller General review and report.
- Sec. 20. Review of regulatory barriers to quantum information science, engineering, and technology development.
- Sec. 21. Sunset of National Nanotechnology Program.
- Sec. 22. Clerical amendments.

1 **SEC. 2. DEFINITIONS.**

2 Section 2 of the National Quantum Initiative Act (15
3 U.S.C. 8801) is amended—

4 (1) by redesignating paragraphs (4), (5), (6),
5 (7), the first paragraph (8) (relating to the defini-
6 tion of the “Subcommittee on Economic and Secu-
7 rity Implications”), and the second paragraph (8)
8 (relating to the definition of the “Subcommittee on
9 Quantum Information Science”) as paragraphs (7),
10 (9), (12), (13), (18), and (19), respectively;

11 (2) by inserting after paragraph (3) the fol-
12 lowing:

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

1 “(5) FOREIGN COUNTRY OF CONCERN.—The
2 term ‘foreign country of concern’ means—

3 “(A) a country that is a covered nation (as
4 such term is defined in section 4872(f) of title
5 10, United States Code); and

6 “(B) any country that the Secretary of
7 Commerce, in consultation with the Secretary of
8 Defense, the Secretary of State, and the Direc-
9 tor of National Intelligence, determines to be
10 engaged in conduct that is detrimental to the
11 national security or foreign policy of the United
12 States.

13 “(6) FOREIGN ENTITY OF CONCERN.—The
14 term ‘foreign entity of concern’ means a foreign en-
15 tity that is—

16 “(A) designated as a foreign terrorist orga-
17 nization by the Secretary of State under section
18 219(a) of the Immigration and Nationality Act
19 (8 U.S.C. 1189(a));

20 “(B) included on the list of specially des-
21 ignated nationals and blocked persons main-
22 tained by the Office of Foreign Assets Control
23 of the Department of the Treasury (commonly
24 known as the ‘SDN list’);

1 “(C) owned by, controlled by, or subject to
2 the jurisdiction or direction of a government of
3 a foreign country that is a covered nation (as
4 such term is defined in section 4872(f) of title
5 10, United States Code);

6 “(D) alleged by the Attorney General to
7 have been involved in activities for which a con-
8 viction was obtained under—

9 “(i) chapter 37 of title 18, United
10 States Code (commonly known as the ‘Es-
11 pionage Act’);

12 “(ii) section 951 or 1030 of title 18,
13 United States Code;

14 “(iii) chapter 90 of title 18, United
15 States Code (commonly known as the ‘Eco-
16 nomic Espionage Act of 1996’);

17 “(iv) the Arms Export Control Act
18 (22 U.S.C. 2751 et seq.);

19 “(v) section 224, 225, 226, 227, or
20 236 of the Atomic Energy Act of 1954 (42
21 U.S.C. 2274, 2275, 2276, 2277, and
22 2284);

23 “(vi) the Export Control Reform Act
24 of 2018 (50 U.S.C. 4801 et seq.); or

1 “(vii) the International Emergency
2 Economic Powers Act (50 U.S.C. 1701 et
3 seq.); or

4 “(E) determined by the Secretary of Com-
5 merce, in consultation with the Secretary of De-
6 fense and the Director of National Intelligence,
7 to be engaged in unauthorized conduct that is
8 detrimental to the national security or foreign
9 policy of the United States.”;

10 (3) in paragraph (7), as so redesignated, by
11 striking “(a)” each place it appears;

12 (4) by inserting after paragraph (7), as so re-
13 designated, the following new paragraph:

14 “(8) NATIONAL LABORATORY.—The term ‘Na-
15 tional Laboratory’ has the meaning given such term
16 in section 2 of the Energy Policy Act of 2005 (42
17 U.S.C. 15801).”;

18 (5) by inserting after paragraph (9), as so re-
19 designated, the following:

20 “(10) QUANTUM APPLICATIONS.—The term
21 ‘quantum applications’ means uses of quantum in-
22 formation science, engineering, and technology, in-
23 cluding quantum algorithms and software, quantum
24 computing and quantum-classical hybrids, quantum
25 sensing, quantum networking, quantum encryption,

1 quantum simulation, or quantum communications
2 applications.

3 “(11) QUANTUM COMPUTING.—The term ‘quan-
4 tum computing’ means any of a variety of quantum
5 computing technologies, including quantum anneal-
6 ing and quantum gate-model systems that utilize a
7 variety of architectures, such as superconductors,
8 ion traps, photonics, neutral atoms, atomic spin,
9 electron spin, or topological qubits.”;

10 (6) by amending paragraph (12), as so redesign-
11 nated, to read as follows:

12 “(12) QUANTUM INFORMATION SCIENCE, ENGI-
13 NEERING, AND TECHNOLOGY.—The term ‘quantum
14 information science, engineering, and technology’
15 means the understanding, translation, use, or appli-
16 cation of the laws of quantum physics for the stor-
17 age, transmission, manipulation, computing, simula-
18 tion, or measurement of information.”; and

19 (7) by inserting after paragraph (13), as so re-
20 designated, the following:

21 “(14) QUANTUM NETWORKING.—The term
22 ‘quantum networking’ means the transmission of
23 quantum information and the distribution and use of
24 entanglement across nodes to enable new informa-

1 tion technology applications and fundamental
2 science.

3 “(15) QUANTUM SENSING.—The term ‘quan-
4 tum sensing’—

5 “(A) means the use of quantum mechanics
6 to enhance or enable new sensors; and

7 “(B) can include uses of superposition and
8 entanglement, nonclassical states, and advances
9 in accuracy and precision enabled by quantum
10 control.

11 “(16) STEM.—The term ‘STEM’ means the
12 academic and professional disciplines of science,
13 technology, engineering, and mathematics, including
14 computer science.

15 “(17) SUPPLY CHAIN SHOCK.—The term ‘sup-
16 ply chain shock’—

17 “(A) means an event causing severe or se-
18 rious disruption to normal operations or capac-
19 ity in a supply chain; and

20 “(B) includes—

21 “(i) a natural disaster;

22 “(ii) a pandemic;

23 “(iii) a biological threat;

24 “(iv) a cyber attack;

25 “(v) a geopolitical conflict;

1 “(vi) a terrorist or geopolitical attack;
2 “(vii) a trade disruption caused by—
3 “(I) a foreign country of concern;
4 or
5 “(II) an entity or an individual
6 subject to the jurisdiction of such a
7 country; and
8 “(viii) an event for which the Presi-
9 dent declares a major disaster or an emer-
10 gency under section 401 or 501, respec-
11 tively, of the Robert T. Stafford Disaster
12 Relief and Emergency Assistance Act (42
13 U.S.C. 5170; 42 U.S.C. 5191).”.

14 **SEC. 3. PURPOSES.**

15 Section 3 of the National Quantum Initiative Act (15
16 U.S.C. 8802) is amended—

17 (1) in paragraph (1)—

18 (A) by amending subparagraph (A) to read
19 as follows:

20 “(A) to expand the number of researchers,
21 educators, and students with training in quan-
22 tum information science, engineering, and tech-
23 nology to develop a domestic workforce pipeline
24 and retain international talent to the extent

1 consistent with national security and inter-
2 national competitiveness;”;

3 (B) in subparagraph (B), by striking
4 “science at the” and inserting “science, engi-
5 neering, and technology at the”;

6 (C) in subparagraph (D)—

7 (i) by striking “science and tech-
8 nology” and inserting “science, engineer-
9 ing, and technology”; and

10 (ii) by striking “and” after the semi-
11 colon; and

12 (D) by adding at the end the following:

13 “(F) to facilitate development of quantum
14 applications, including quantum-hybrid applica-
15 tions, to promote innovation; and

16 “(G) to support advancements in emerging
17 technologies that could benefit from or benefit
18 the development of quantum technology and
19 promote research, development, demonstration,
20 and application of such emerging technologies
21 in quantum information science, engineering,
22 and technology and scientific discovery.”;

23 (2) in paragraph (2), by striking “science and
24 technology” and inserting “science, engineering, and
25 technology”;

1 (3) in paragraph (3), by striking “science and
2 technology” and inserting “science, engineering, and
3 technology”;

4 (4) in paragraph (4)—

5 (A) by inserting “National Laboratories,”
6 after “Federal laboratories,”; and

7 (B) by striking “and” after the semicolon;

8 (5) in paragraph (5)—

9 (A) in the matter preceding subparagraph
10 (A)—

11 (i) by inserting “partnerships, re-
12 search collaborations, and” after “inter-
13 national”; and

14 (ii) by striking “science and tech-
15 nology security” and inserting “science,
16 engineering, and technology”;

17 (B) in subparagraph (A), by striking
18 “and” after the semicolon;

19 (C) in subparagraph (B), by striking the
20 period at the end and inserting a semicolon;
21 and

22 (D) by adding at the end the following:

23 “(C) to facilitate cooperation in the ad-
24 vancement of quantum capabilities among the
25 United States and its strategic allies and part-

1 ners to strengthen and secure the quantum-rel-
2 evant supply chain and related ecosystem; and

3 “(D) to coordinate on potential export or
4 strategic trade controls where appropriate;
5 and”;

6 (6) by adding at the end the following:

7 “(6) improving the maturity and scale of the
8 quantum industry.”.

9 **SEC. 4. NATIONAL QUANTUM INITIATIVE PROGRAM.**

10 Subsection (b) of section 101 of the National Quan-
11 tum Initiative Act (15 U.S.C. 8811) is amended—

12 (1) in paragraph (1)—

13 (A) by striking “development” and insert-
14 ing “research, development, and near-, medium-
15 , and long-term demonstration”; and

16 (B) by striking “information science and
17 technology”;

18 (2) in paragraph (2)—

19 (A) by striking “science and technology”
20 and inserting “science, engineering, and tech-
21 nology”; and

22 (B) by inserting “infrastructure,” after
23 “demonstration,”;

24 (3) in paragraph (3)—

1 (A) by inserting “and retain” after “to de-
2 velop”; and

3 (B) by striking “science and technology”
4 and inserting “science, engineering, and tech-
5 nology”;

6 (4) by amending paragraph (4) to read as fol-
7 lows:

8 “(4) provide for interagency planning and co-
9 ordination of Federal quantum information science,
10 engineering, and technology research, development,
11 demonstration, standards engagement, and other ac-
12 tivities under the Program, including activities au-
13 thorized pursuant to section 234 of the John S.
14 McCain National Defense Authorization Act for Fis-
15 cal Year 2019 (Public Law 115–232; 10 U.S.C.
16 4001 note), quantum educational activities and pro-
17 grams authorized pursuant to section 10661 of the
18 Research and Development, Competition, and Inno-
19 vation Act (42 U.S.C. 19261), and activities con-
20 ducted at any Federal laboratory or National Lab-
21 oratory;” and

22 (5) in paragraph (5)—

23 (A) by striking “industry and universities”
24 and inserting “industry, universities, and stra-
25 tegic allies and partners”; and

1 (B) by inserting “, including human re-
2 sources” after “resources”.

3 **SEC. 5. NATIONAL QUANTUM COORDINATION OFFICE.**

4 Section 102 of the National Quantum Initiative Act
5 (15 U.S.C. 8812) is amended—

6 (1) in subsection (a)(2)—

7 (A) in subparagraph (A), by inserting
8 “who shall be” before “appointed”; and

9 (B) by amending subparagraph (B) to read
10 as follows:

11 “(B) staff comprised of employees detailed
12 from the Federal departments and agencies
13 specified in section 103(b).”; and

14 (2) in subsection (b)—

15 (A) in paragraph (3), by striking “science
16 and technology” and inserting “science, engi-
17 neering, and technology research, development,
18 workforce, and international”;

19 (B) by amending paragraph (4) to read as
20 follows:

21 “(4) ensure coordination among the collabo-
22 rative ventures or consortia established under this
23 Act, including under section 201(a), the Multidisci-
24 plinary Centers for Quantum Research and Edu-
25 cation established under section 302(a), and the Na-

1 tional Quantum Information Science Research Cen-
2 ters established under section 402(a), and the Quan-
3 tum Economic Development Consortium;”;

4 (C) in paragraph (6), by striking “; and”
5 and inserting a semicolon;

6 (D) in paragraph (7)—

7 (i) by inserting “nonprofit research
8 organizations,” after “universities,”; and

9 (ii) by striking the period at the end
10 and inserting a semicolon; and

11 (E) by adding after paragraph (7), the fol-
12 lowing:

13 “(8) promote understanding and adoption of
14 viable quantum capabilities that strengthen the
15 United States economy, as may be appropriate;

16 “(9) track, monitor, and promote policies that
17 will ensure the stability of the United States quan-
18 tum workforce, quantum supply chain, domestic
19 quantum industry, and international trade; and

20 “(10) ensure coordination and avoid unneces-
21 sary duplication of existing quantum-related activi-
22 ties, other activities carried out under this Act, and
23 other related programs, as appropriate.”.

1 **SEC. 6. SUBCOMMITTEE ON QUANTUM INFORMATION**
2 **SCIENCE.**

3 Section 103 of the National Quantum Initiative Act
4 (15 U.S.C. 8813) is amended—

5 (1) in subsection (d)—

6 (A) in paragraph (1), by striking “the
7 quantum information science and technology re-
8 search,” and inserting “quantum information
9 science, engineering, and technology research,
10 quantum application development, and dem-
11 onstration,”;

12 (B) in paragraph (4)—

13 (i) by inserting “, engineering, and
14 technology” after “science”; and

15 (ii) by inserting “skillset” before “di-
16 versity”;

17 (C) in paragraph (5)—

18 (i) by inserting “, engineering, and
19 technology” after “science”; and

20 (ii) by inserting “and conduct com-
21 parative benchmarking of Federal invest-
22 ments and research strategies relative to
23 those of strategic allies and partners of the
24 United States and other countries” after
25 “development efforts”;

26 (D) in paragraph (6)—

1 (i) by striking “science and tech-
2 nology” and inserting “science, engineer-
3 ing, and technology”; and

4 (ii) by striking “and” after the semi-
5 colon;

6 (E) in paragraph (7)—

7 (i) by inserting “, engineering, and
8 technology” after “science”; and

9 (ii) by striking the period and insert-
10 ing a semicolon; and

11 (F) by adding at the end the following:

12 “(8) facilitate interagency partnership opportu-
13 nities to advance quantum applications related to
14 advanced manufacturing, biotechnology, critical min-
15 erals, chemistry, space, and other sectors; and

16 “(9) evaluate the competitiveness and capabili-
17 ties of the United States in quantum technologies
18 with respect to quantum computing, sensing, net-
19 working, and applications.”;

20 (2) in subsection (g)(2)—

21 (A) in paragraph (A), by inserting “num-
22 bers” after “budget”;

23 (B) in paragraph (B), by inserting “num-
24 bers” after “budget”; and

1 (C) by adding at the end the following new
2 paragraphs:

3 “(D) Metrics for measuring the impact of
4 the Program for the current fiscal year, for
5 each Federal department and agency described
6 in subsection (b).

7 “(E) Value proposition as a result of each
8 interagency partnership opportunity”;

9 (3) in subsection (h)(2)(A), by inserting “, in-
10 cluding a description of agency roles and responsibil-
11 ities” before the period; and

12 (4) by adding at the end the following new sub-
13 section:

14 “(i) QUANTUM USE CASES.—

15 “(1) IN GENERAL.—The Subcommittee shall
16 identify potential use cases for quantum technologies
17 that could advance the missions of Federal depart-
18 ments and agencies participating in the Program.

19 “(2) QUANTUM ON-RAMP.—For each potential
20 use case identified pursuant to paragraph (1) for a
21 Federal department or agency, the head of the Fed-
22 eral department or agency may, in consultation with
23 the Subcommittee, develop a plan to enable such de-
24 partment or agency to address the potential use
25 case.

1 “(3) COMPARISON TO ARTIFICIAL INTEL-
2 LIGENCE TECHNOLOGIES.—For any potential use
3 case identified under paragraph (1) for a Federal
4 department or agency, the head of the department
5 or agency may, in consultation with the Sub-
6 committee, consider the quantum use case’s inter-
7 play with artificial intelligence and compare its an-
8 ticipated costs, functionality, and benefits.

9 “(4) REPORTING.—The Subcommittee, as part
10 of the annual report on the budget for the Program
11 under subsection (g), shall report progress in car-
12 rying out the activities under this subsection, includ-
13 ing information relating to the following:

14 “(A) The potential use cases identified
15 pursuant to paragraph (1).

16 “(B) The status of plans developed pursu-
17 ant to paragraph (2).

18 “(C) Any obstacles to addressing such po-
19 tential use cases, including lack of funding.”.

20 **SEC. 7. NATIONAL QUANTUM INITIATIVE ADVISORY COM-**
21 **MITTEE.**

22 Section 104 of the National Quantum Initiative Act
23 (15 U.S.C. 8814) is amended—

24 (1) by amending subsection (b) to read as fol-
25 lows:

1 “(b) QUALIFICATIONS.—The Advisory Committee
2 shall consist of members, appointed by the President,
3 who—

4 “(1) are representative of—

5 “(A) industry; and

6 “(B) universities and Federal laboratories
7 that are qualified to provide advice and infor-
8 mation on quantum information science, engi-
9 neering, and technology research, development,
10 demonstrations, standards, STEM education
11 and workforce, technology transfer, economics,
12 and national security, or research security; and

13 “(2) may hold doctoral degrees in physical
14 sciences, mathematics, computer science, engineer-
15 ing, or related fields.”;

16 (2) in subsection (d)(2)—

17 (A) in subparagraph (A), by striking
18 “science and technology” and inserting
19 “science, engineering, and technology”;

20 (B) in subparagraph (D)—

21 (i) by striking “to” and inserting
22 “promote innovation, foster a robust
23 United States quantum industry, and”;
24 and

1 (ii) by striking “science and tech-
2 nology” and inserting “science, engineer-
3 ing, and technology”;

4 (C) in subparagraph (E), by inserting “,
5 including to address any gaps that may exist in
6 basic research, capabilities, workforce, supply
7 chain, or coordination among participating Fed-
8 eral agencies” before the semicolon;

9 (D) in subparagraph (F), by striking
10 “open standards for, quantum information
11 science and technology; and” and inserting
12 “international standards in open and trans-
13 parent standardization systems for quantum in-
14 formation science, engineering, and tech-
15 nology;”;

16 (E) in subparagraph (G)—

17 (i) by striking “societal,”; and

18 (ii) by striking the period and insert-
19 ing a semicolon; and

20 (F) by adding at the end the following new
21 subparagraphs:

22 “(H) the domestic and international co-
23 operation needs and goals of the Program, in-
24 cluding those related to infrastructure and the

1 supply chain of quantum information science,
2 engineering, and technology; and

3 “(I) the degree to which quantum informa-
4 tion science, engineering, and technology—

5 “(i) is enhancing or can enhance—

6 “(I) the capabilities of the United
7 States advanced industrial economy;
8 and

9 “(II) Federal, State, and local
10 government capabilities and services;
11 and

12 “(ii) can protect or optimize critical
13 infrastructure (as such term is defined in
14 section 1016(e) of Public Law 107–56 (42
15 U.S.C. 5195c(e)).”;

16 (3) in subsection (e)—

17 (A) by inserting “through December 31,
18 2030” after “thereafter”; and

19 (B) by adding at the end the following new
20 sentence: “In the first such report required
21 after the date of the enactment of the National
22 Quantum Initiative Reauthorization Act of
23 2026, the Advisory Committee shall assess the
24 benefits and opportunities to strengthen quan-
25 tum communications corridors in which Federal

1 laboratories, institutions of higher education,
2 and other entities conducting quantum informa-
3 tion science, engineering, and technology re-
4 search are connected via quantum communica-
5 tion networks capable of securely transmitting
6 information.”;

7 (4) by redesignating subsections (e) through (g)
8 as subsections (f) through (h), respectively; and

9 (5) by inserting after subsection (d) the fol-
10 lowing:

11 “(e) PERFORMANCE AND USEFULNESS ASSESSMENT
12 OF NATIONAL QUANTUM INITIATIVE PROGRAM.—

13 “(1) ANNUAL EVALUATION REQUIRED.—Not
14 less frequently than once each year, the Advisory
15 Committee shall, in coordination with the Sub-
16 committee on Quantum Information Science, con-
17 duct an evaluation of the effectiveness, progress, and
18 usefulness of activities carried out under the Pro-
19 gram.

20 “(2) ELEMENTS.—Each evaluation under para-
21 graph (1) shall assess—

22 “(A) which Federal programs or activities
23 within the Program have made measurable
24 progress toward program goals;

1 “(B) which Federal programs within the
2 Program have produced tangible scientific,
3 workforce, or commercial outcomes;

4 “(C) which programs or activities within
5 the Program have overlapping missions or du-
6 plicative structures;

7 “(D) resource utilization and return on in-
8 vestment of each major component of the Pro-
9 gram; and

10 “(E) barriers to performance or implemen-
11 tation of the Program, including structural,
12 regulatory, or administrative challenges.

13 “(3) REPORT TO CONGRESS.—Not later than
14 March 1 of each year, the Advisory Committee shall
15 submit to the Committee on Commerce, Science, and
16 Transportation of the Senate, the Committee on En-
17 ergy and Natural Resources of the Senate, and the
18 Committee on Science, Space, and Technology of the
19 House of Representatives a report summarizing the
20 findings of the Advisory Committee with respect to
21 the evaluation most recently conducted under para-
22 graph (1), including specific recommendations for—

23 “(A) improvements to the Program;

24 “(B) consolidation or termination of pro-
25 grams or activities within the Program; and

1 “(C) realignment of funding to high-im-
2 pact areas within the Program.

3 “(4) PUBLIC SUMMARY.—The Advisory Com-
4 mittee shall make a public-facing summary of each
5 report submitted under paragraph (3) available on
6 the website of the Advisory Committee to promote
7 transparency and accountability.”.

8 **SEC. 8. SUBCOMMITTEE ON THE ECONOMIC AND SECURITY**
9 **IMPLICATIONS OF QUANTUM INFORMATION**
10 **SCIENCE.**

11 Section 105 of the National Quantum Initiative Act
12 (15 U.S.C. 8814a) is amended—

13 (1) in subsection (b)—

14 (A) in paragraph (10), by striking “and”
15 after the semicolon;

16 (B) by redesignating paragraph (11) as
17 paragraph (12); and

18 (C) by inserting after paragraph (10) the
19 following:

20 “(11) the National Aeronautics and Space Ad-
21 ministration; and”; and

22 (2) in subsection (c)—

23 (A) in paragraph (1), by striking “infor-
24 mation science” and inserting “information
25 science, engineering, and technology”;

1 (B) in paragraph (2), by inserting “or to
2 supply chains” before the semicolon;

3 (C) in paragraph (3), by inserting “or sup-
4 ply chains” before the semicolon;

5 (D) in paragraph (5)—

6 (i) by inserting “, engineering, and
7 technology” after “quantum information
8 science”; and

9 (ii) by inserting “any” before “export
10 controls”;

11 (E) in paragraph (6), by striking “infor-
12 mation science” and inserting “information
13 science, engineering, and technology”;

14 (F) in paragraph (7), by striking “and”
15 after the semicolon;

16 (G) in paragraph (8)—

17 (i) by striking “information science”
18 and inserting “information science, engi-
19 neering, and technology”; and

20 (ii) by striking the period and insert-
21 ing a semicolon; and

22 (H) by adding at the end the following:

23 “(9) in coordination with the Subcommittee on
24 Quantum Information Science, identify opportunities
25 to increase coordination between civilian, military,

1 and intelligence quantum research entities, reduce
2 unnecessary duplicative quantum research activities,
3 and facilitate collaboration between quantum re-
4 search agencies with specialized capabilities or ex-
5 pertise in one or more aspects of quantum informa-
6 tion science, engineering, and technology; and

7 “(10) recommend strategies for attracting and
8 retaining students and scholars with expertise in
9 quantum related fields to Federal departments and
10 agencies.”.

11 **SEC. 9. INTERNATIONAL QUANTUM COOPERATION STRAT-**
12 **EGY.**

13 The National Quantum Initiative Act (15 U.S.C.
14 8801 et seq.) is amended by inserting after section 105
15 the following new section:

16 **“SEC. 105A. INTERNATIONAL QUANTUM COOPERATION**
17 **STRATEGY.**

18 “(a) **STRATEGY REQUIRED.**—Not later than one year
19 after the date of the enactment of this section, the Direc-
20 tor of the Office of Science and Technology Policy shall,
21 in consultation with the Secretary of Commerce, the Sec-
22 retary of State, the Secretary of Energy, the Director of
23 the National Science Foundation, the Director of the Na-
24 tional Institute of Standards and Technology, the Admin-
25 istrator of the National Aeronautics and Space Adminis-

1 tration, and the heads of other Federal agencies, as appro-
2 priate, develop and submit to the Committee on Com-
3 merce, Science, and Transportation, the Committee on
4 Energy and Natural Resources, and the Committee on
5 Foreign Relations of the Senate, and the Committee on
6 Science, Space, and Technology and the Committee on
7 Foreign Affairs of the House of Representatives a strat-
8 egy—

9 “(1) to establish collaborative international
10 partnerships to advance research and development,
11 testing and evaluation, and interoperability in quan-
12 tum information science, engineering, and tech-
13 nology with allies and partners of the United States,
14 and other countries, when in the security, strategic,
15 technological, and scientific interests of the United
16 States;

17 “(2) to ensure continued participation by the
18 United States in bilateral and multilateral efforts to
19 advance quantum information science, engineering,
20 and technology on the international stage, including
21 programs to advance research and development, test-
22 ing and evaluation, and interoperability in quantum
23 information science, engineering, and technology
24 with allies and partners of the United States;

1 “(3) to promote the integrity and impartiality
2 of international standards organizations and proc-
3 esses related to quantum information science, engi-
4 neering, and technology; and

5 “(4) to ensure responsible and ethical research
6 and development, testing and evaluation, and inter-
7 operability in quantum information science, engi-
8 neering, and technology.

9 “(b) DESIGNATION.—The strategy developed under
10 subsection (a) shall be known as the ‘International Quan-
11 tum Cooperation Strategy’ (in this section referred to as
12 the ‘Strategy’).

13 “(c) ELEMENTS.—In the development of the Strat-
14 egy, the Director of the Office of Science and Technology
15 Policy, the National Quantum Coordination Office, the
16 Subcommittee on Quantum Information Science, the Sub-
17 committee on the Economic and Security Implications of
18 Quantum Information Science, and the relevant agencies
19 shall consider including the following:

20 “(1) The establishment of international part-
21 nerships to advance research and development in
22 quantum information science, engineering, and tech-
23 nology.

24 “(2) Key strategic allies and partners of the
25 United States that have demonstrated unique capa-

1 bilities in one or more areas of quantum information
2 science, engineering, and technology.

3 “(3) Efforts and plans to address risks to the
4 national security and economic interests of the
5 United States during development and deployment
6 of quantum technologies worldwide, including plans
7 for diplomatic engagement with allies and partners,
8 and other countries.

9 “(4) Efforts and plans to promote global devel-
10 opment and deployment of quantum technologies, in-
11 cluding through international engagement and lead-
12 ership in the development of international standards
13 that are aligned with United States national inter-
14 ests.

15 “(5) Efforts and plans to develop, attract, and
16 retain international talent.

17 “(6) The ability and risks of domestic manufac-
18 turers and suppliers and those of allies and partners
19 of the United States to meet the needs of the global
20 quantum supply chain, including raw materials such
21 as helium-3, plans for engagement with allies and
22 partners, manufacturers, and suppliers, and options
23 to mitigate gaps and vulnerabilities in the global
24 quantum supply chain.

1 “(7) A plan to safeguard research and tech-
2 nology supported through international cooperation,
3 as appropriate, in whole or in part, including in
4 quantum technologies critical to national security,
5 from malign influence, theft, or exfiltration by for-
6 eign entities of concern.

7 “(8) As necessary, a description of such legisla-
8 tive or administrative action needed to carry out the
9 Strategy.

10 “(d) BRIEFING.—Not later than 30 days after the
11 date on which the Strategy is completed, the Director shall
12 brief the committees specified in subsection (a) on the
13 Strategy.”.

14 **SEC. 10. PRIZE CHALLENGES.**

15 The National Quantum Initiative Act (15 U.S.C.
16 8801 et seq.) is amended—

17 (1) by redesignating section 106 as section 107;
18 and

19 (2) by inserting after section 105A, as added by
20 section 9, the following:

21 **“SEC. 106. NATIONAL QUANTUM PRIZE CHALLENGES.**

22 “(a) IN GENERAL.—Subject to the availability of ap-
23 propriations, any head of a Federal agency with a rep-
24 resentative serving on the Subcommittee on Quantum In-
25 formation Science established under section 103 may, in-

1 dividually or in cooperation with one or more heads of
2 Federal agencies—

3 “(1) conduct a prize competition under section
4 24 of the Stevenson-Wydler Technology Innovation
5 Act of 1980 (15 U.S.C. 3719), or such other prize
6 competition authority as may be available to the
7 head of an agency, to accelerate the development of
8 applications and algorithms in quantum information
9 science, engineering, and technology; and

10 “(2) define a measurable set of performance
11 goals for participants in the prize competitions to
12 demonstrate their solutions on a level playing field
13 while making a significant advancement over the
14 current state of the art.

15 “(b) PURPOSE.—Any prize competition carried out
16 under subsection (a) shall be for the purpose of stimu-
17 lating innovation to advance the ability of the United
18 States to achieve high-priority breakthroughs for applica-
19 tions in quantum information science, engineering, and
20 technology, such as in quantum computing, quantum sens-
21 ing, quantum communications, quantum networking,
22 quantum algorithms, and quantum cryptography.

23 “(c) COORDINATION WITH SUBCOMMITTEES.—Each
24 prize competition conducted under subsection (a) may be
25 conducted in coordination with members of the Sub-

1 committee on Quantum Information Science and the Sub-
2 committee on the Economic and Security Implications of
3 Quantum Information Science.

4 “(d) RECOMMENDATIONS.—To assist in the adminis-
5 tration of this section, the Subcommittee on Quantum In-
6 formation Science may provide recommendations on key
7 challenges in quantum information science, engineering,
8 and technology that would be well-suited for a prize com-
9 petition under subsection (a). The recommendations shall
10 include a scope for efforts carried out under such sub-
11 section.”

12 **SEC. 11. SUNSET OF NATIONAL QUANTUM INITIATIVE.**

13 Subsection (a) of section 107 of the National Quan-
14 tum Initiative Act (15 U.S.C. 8815), as redesignated by
15 section 10, is amended to read as follows:

16 “(a) IN GENERAL.—Except as provided in subsection
17 (b), the authority to carry out sections 101, 102, 103, 104,
18 and 105 shall terminate on December 30, 2034.”

19 **SEC. 12. NATIONAL INSTITUTE OF STANDARDS AND TECH-**
20 **NOLOGY ACTIVITIES AND QUANTUM CONSOR-**
21 **TIUM.**

22 Section 201 of the National Quantum Initiative Act
23 (15 U.S.C. 8831) is amended—

24 (1) in subsection (a)—

1 (A) in paragraph (1), by striking “science
2 and technology” and inserting “science, engi-
3 neering, and technology”;

4 (B) in paragraph (2)—

5 (i) by inserting “attract, educate,
6 and” before “train”; and

7 (ii) by striking “science and tech-
8 nology” and inserting “science, engineer-
9 ing, and technology”;

10 (C) by amending paragraph (3) to read as
11 follows:

12 “(3) shall carry out research to facilitate the
13 development and standardization, as appropriate, of
14 quantum cryptography, post-quantum cryptography
15 (as such term is defined in section 3 of the Quantum
16 Computing Cybersecurity Preparedness Act (6
17 U.S.C. 1526 note; Public Law 117–260)), and prac-
18 tices to replace cryptographic keys or algorithms
19 with minimal disruption to current applications and
20 systems;”;

21 (D) by amending paragraph (4) to read as
22 follows:

23 “(4) shall carry out research, development, and
24 demonstration projects, as appropriate, to facilitate
25 the development of quantum applications, including

1 research on quantum supply chain enabling tech-
2 nologies, such as lasers, cryogenics, and other sup-
3 porting technologies;”;

4 (E) by redesignating paragraphs (5), (6),
5 and (7) as paragraphs (7), (8), and (9), respec-
6 tively;

7 (F) by inserting after paragraph (4) the
8 following:

9 “(5) shall promote United States participation
10 in international standards organizations related to
11 quantum information science, engineering, and tech-
12 nology;

13 “(6) shall establish or expand partnerships with
14 the public sector and private sector—

15 “(A) to accelerate the development of do-
16 mestic quantum supply chain and supply chain-
17 supporting technologies;

18 “(B) to reduce quantum supply chain
19 vulnerabilities; and

20 “(C) to avoid offshoring to, or dependence
21 on, foreign countries of concern for critical com-
22 ponents of capabilities in the quantum supply
23 chain;”;

1 (G) in paragraph (7), as so redesignated,
2 by striking “infrastructure” and inserting “,
3 communications, sensing, and computing”; and

4 (H) in paragraph (8), as so redesignated—

5 (i) by inserting “nonprofit research
6 organizations,” after “universities,”; and

7 (ii) by striking “and engineering” and
8 inserting “, engineering, and technology
9 and expanding the domestic STEM work-
10 force”;

11 (2) in subsection (b)—

12 (A) in paragraph (1)—

13 (i) by striking “future measurement”
14 and inserting “research, measurement”;
15 and

16 (ii) by striking “science and tech-
17 nology” and inserting “science, engineer-
18 ing, and technology”;

19 (B) in paragraph (2)—

20 (i) by amending subparagraph (A) to
21 read as follows:

22 “(A) to gather and assess information on
23 the quantum industry to address the needs
24 identified in paragraph (1);” and

1 (ii) by striking subparagraphs (B) and
2 (C) and inserting the following new sub-
3 paragraphs:

4 “(B) to provide recommendations regard-
5 ing how the National Institute of Standards
6 and Technology, the Program, and other Fed-
7 eral agencies, as appropriate, can address the
8 gaps in the research necessary to meet the
9 needs identified in paragraph (1); and

10 “(C) to assess and identify key areas for
11 establishing, expanding, or developing inter-
12 national partnerships that will meet the needs
13 identified in paragraph (1).”;

14 (C) in paragraph (3)—

15 (i) by striking “Not later than 2 years
16 after the date of the enactment of this Act,
17 the” and inserting “The”; and

18 (ii) by inserting “periodically, but not
19 less frequently than once every five years,”
20 after “shall”; and

21 (D) by adding at the end the following new
22 paragraph:

23 “(4) SENSE OF CONGRESS ON COORDINA-
24 TION.—It is the sense of Congress that, as may be
25 appropriate, Federal agencies that are involved in

1 the transition or translation of research results to
2 practical quantum applications or that have a mis-
3 sion that could benefit from the development of
4 quantum technologies, should engage with the con-
5 sortium to inform and accelerate progress in such
6 areas.”; and

7 (3) by striking subsection (c) and inserting the
8 following new subsections:

9 “(c) QUANTUM SUPPLY CHAINS.—

10 “(1) MAPPING AND PLANNING.—The Assistant
11 Secretary of Commerce for Industry and Analysis
12 shall carry out the following activities:

13 “(A) Assess, map, and model supply chains
14 for quantum networking, quantum computing,
15 quantum communications, quantum simulation,
16 and quantum sensing technologies and applica-
17 tions.

18 “(B) Identify current and future high-pri-
19 ority gaps and vulnerabilities in quantum sup-
20 ply chains, such as—

21 “(i) single points of failure, sole
22 source, consolidated manufacturing, or
23 where there are limited United States and
24 partner national suppliers; and

1 “(ii) critical components, elements,
2 materials, equipment, and infrastructure.

3 “(C) Identify potential supply chain shocks
4 to the quantum supply chain that may disrupt,
5 strain, or eliminate the supply chain.

6 “(2) STUDY ON CRITICAL QUANTUM SUPPLY
7 CHAINS.—Not later than 2 years after the date of
8 the enactment of the National Quantum Initiative
9 Reauthorization Act of 2026, the Secretary of Com-
10 merce and the Secretary of Energy shall jointly—

11 “(A) complete a study documenting the
12 critical quantum supply chains and identified
13 high-priority gaps and vulnerabilities; and

14 “(B) submit to the appropriate committees
15 of Congress a report on the findings with re-
16 spect to the study completed pursuant to sub-
17 paragraph (A).

18 “(3) RECOMMENDATIONS FOR AVOIDING
19 SHOCKS TO QUANTUM SUPPLY CHAINS.—Not later
20 than 2 years after the date of the enactment of the
21 National Quantum Initiative Reauthorization Act of
22 2026, the Secretary of Commerce shall, in coordina-
23 tion with the Secretary of Energy, the Director of
24 the National Science Foundation, the Secretary of
25 Defense, the Administrator of the National Aero-

1 nautics and Space Administration, the Adminis-
2 trator of the Small Business Administration, and the
3 heads of such other Federal agencies as the Sec-
4 retary of Commerce considers relevant, develop and
5 submit to the appropriate committees of Congress
6 specific recommendations for actions to mitigate
7 harm to quantum supply chains from a supply chain
8 shock.

9 “(4) PLAN TO STRENGTHEN AND SECURE
10 QUANTUM SUPPLY CHAINS.—Not later than 3 years
11 after the date of the enactment of the National
12 Quantum Initiative Reauthorization Act of 2026, the
13 Secretary of Commerce shall submit to the appro-
14 priate committees of Congress a plan identifying op-
15 portunities to strengthen supply chains and build ca-
16 pacity.

17 “(d) INTERNATIONAL QUANTUM RESEARCH AND
18 METROLOGY.—

19 “(1) IN GENERAL.—The Director of the Na-
20 tional Institute of Standards and Technology shall,
21 in coordination with the Secretary of State and the
22 Director of the National Science Foundation, pro-
23 mote, establish, and support international quantum
24 information science, engineering, and technology re-
25 search, metrology research, and standardization, as

1 appropriate, to enhance international cooperation,
2 meet United States commitments, and support
3 United States engagement in international voluntary
4 standards for quantum information science, engi-
5 neering, and technology.

6 “(2) ALIGNMENT.—In carrying out this section,
7 the Director of the National Institute of Standards
8 and Technology shall ensure alignment with the Na-
9 tional Quantum Information Science Strategy and
10 the U.S. Government National Standards Strategy
11 for Critical and Emerging Technology, or successor
12 strategies.

13 “(3) PROHIBITIONS.—

14 “(A) CONFUCIUS INSTITUTE.—None of the
15 funds made available under this subsection may
16 be obligated or expended to an institution of
17 higher education that maintains a contract or
18 agreement between such institution and a Con-
19 fucius Institute (as defined in section 10339A
20 of the Research and Development, Competition,
21 and Innovation Act (42 U.S.C. 19039)) or any
22 successor of a Confucius Institute.

23 “(B) FOREIGN COUNTRIES OR ENTITIES
24 OF CONCERN.—None of the funds made avail-
25 able under this subsection may be obligated or

1 expended to promote, establish, or finance
2 quantum research activities between a United
3 States entity and a foreign country of concern
4 or foreign entity of concern, including the enti-
5 ty's subsidiaries, except such restriction shall
6 not apply to participation by award recipients
7 in consensus-based international standardiza-
8 tion activities.

9 “(e) POST-QUANTUM CRYPTOGRAPHY DEPLOY-
10 MENT.—

11 “(1) DEFINITION OF POST-QUANTUM CRYPTOG-
12 RAPHY.—In this subsection, the term ‘post-quantum
13 cryptography’ has the meaning given such term in
14 section 3 of the Quantum Computing Cybersecurity
15 Preparedness Act (Public Law 117–260; 6 U.S.C.
16 1526 note).

17 “(2) IN GENERAL.—The Director of the Na-
18 tional Institute of Standards and Technology shall,
19 in consultation with the Secretary of Homeland Se-
20 curity, the heads of Sector Risk Management Agen-
21 cies (as such term is defined in section 2200 of the
22 Homeland Security Act of 2002 (6 U.S.C. 650)),
23 and private sector entities, as the Director considers
24 appropriate, promote the voluntary development,

1 adoption, and deployment of voluntary standards re-
2 lating to post-quantum cryptography, including by—

3 “(A) disseminating and making publicly
4 available guidelines and resources to help orga-
5 nizations adopt and deploy standards relating
6 to post-quantum cryptography and minimize
7 disruptions to current applications and systems
8 caused by cryptographic updates; and

9 “(B) providing technical assistance, as
10 practicable, to entities that are at high risk of
11 quantum cryptoanalytic attacks, such as enti-
12 ties determined to be critical infrastructure (as
13 such term is defined in section 1016(e) of Pub-
14 lic Law 107–56 (42 U.S.C. 5195c(e))) or dig-
15 ital infrastructure providers.

16 “(f) FUNDING.—

17 “(1) AUTHORIZATION OF APPROPRIATIONS.—
18 There is authorized to be appropriated to the Direc-
19 tor of the National Institute of Standards and Tech-
20 nology to carry out this section \$85,000,000 for
21 each of fiscal years 2026 through 2030.

22 “(2) DERIVATION OF FUNDS.—Amounts made
23 available pursuant to paragraph (1) for each of fis-
24 cal years 2026 and 2027 shall be derived from
25 amounts authorized to be appropriated for the Na-

1 tional Institute of Standards and Technology pursu-
2 ant to section 10211 of the Research and Develop-
3 ment, Competition, and Innovation Act (Public Law
4 117–167) for scientific and technical research and
5 services laboratory activities.”

6 **SEC. 13. NATIONAL INSTITUTE OF STANDARDS AND TECH-**
7 **NOLOGY QUANTUM CENTERS.**

8 Title II of the National Quantum Initiative Act is
9 amended by adding at the end the following new sections:

10 **“SEC. 202. NATIONAL INSTITUTE OF STANDARDS AND**
11 **TECHNOLOGY QUANTUM CENTERS.**

12 “(a) ESTABLISHMENT.—

13 “(1) IN GENERAL.—Subject to the availability
14 of appropriations, the Director of the National Insti-
15 tute of Standards and Technology shall, in consulta-
16 tion with such heads of other Federal departments
17 and agencies as the Director considers appropriate,
18 carry out a program to establish and operate at least
19 1, but not more than 3, centers to accelerate re-
20 search, development, deployment, and standardiza-
21 tion of quantum information science, engineering,
22 and technology.

23 “(2) PROGRAM DETAILS.—

24 “(A) COMPETITIVE, MERIT-REVIEWED
25 PROCESS.—The centers established and oper-

1 ated under paragraph (1) shall be established
2 through a competitive, merit-reviewed process
3 described in paragraph (5).

4 “(B) APPLICATIONS.—An eligible applicant
5 described in subparagraph (C) seeking to estab-
6 lish and operate a center described in para-
7 graph (1) shall submit to the Director of the
8 National Institute of Standards and Technology
9 an application therefor at such time, in such
10 manner, and containing such information as the
11 Director determines to be necessary to evaluate
12 the application using the criteria described in
13 paragraph (5).

14 “(C) ELIGIBLE APPLICANTS.—Eligible ap-
15 plicants described in this subparagraph are the
16 following:

17 “(i) Institutions of higher education.

18 “(ii) Nonprofit organizations.

19 “(iii) Multi-institution collaborations,
20 including multiple types of research insti-
21 tutions, private sector entities, Federal lab-
22 oratories, and nonprofit organizations, or
23 consortia thereof.

24 “(3) SELECTION OF APPLICATIONS AND
25 PRIORITIZED TOPICS.—The Director of the National

1 Institute of Standards and Technology shall solicit
2 proposals and prioritize the following topics in the
3 initial selection of applications submitted under
4 paragraph (2)(B), subject to merit-review (including
5 review of the criteria described in paragraph (5)):

6 “(A) Advancing quantum sensing and
7 measurement technologies.

8 “(B) Advancing the manufacturing and
9 scale-up of quantum systems and quantum-ena-
10 bling technologies.

11 “(C) Addressing technology barriers to
12 quantum networking and communications.

13 “(4) GRANTS.—

14 “(A) IN GENERAL.—The Director shall
15 carry out the program required by paragraph
16 (1) through the award of grants to eligible ap-
17 plicants seeking to establish and operate centers
18 under the program.

19 “(B) DURATION OF GRANT AWARDS.—
20 Subject to the availability of appropriations, the
21 duration of a grant awarded under subpara-
22 graph (A) shall be a period of 5 years.

23 “(C) RENEWAL.—Subject to the avail-
24 ability of appropriations, each grant awarded
25 under subparagraph (A) may be renewed for

1 successive periods of 5 years following a suc-
2 cessful merit-based review by the Director.

3 “(D) TERMINATION.—Consistent with the
4 authorities of the Institute, the Director may
5 terminate a grant awarded under subparagraph
6 (A) for an underperforming center for cause
7 during the performance period of the grant.

8 “(5) COMPETITIVE, MERIT-REVIEWED PROC-
9 ESS.—The Director shall award grants under this
10 subsection using a formal, merit-reviewed process for
11 evaluating applications received by the Director
12 under paragraph (2)(B) that shall—

13 “(A) ensure that grants are awarded to the
14 most technically sound and strategically aligned
15 quantum technology proposals;

16 “(B) prioritize proposals that demonstrate
17 strong potential to enhance leadership by the
18 United States in quantum applications, quan-
19 tum metrology, and the development of quan-
20 tum standards;

21 “(C) support initiatives that align with the
22 strategic goals of the National Institute of
23 Standards and Technology while avoiding un-
24 necessary duplication with efforts led by other
25 Federal agencies;

1 “(D) facilitate a competitive, transparent,
2 and objective selection process, utilizing quali-
3 fied subject-matter experts; and

4 “(E) include appropriate consideration of
5 project feasibility, cost-effectiveness, techno-
6 logical maturity, and risk mitigation.

7 “(b) REQUIREMENTS.—To the maximum extent
8 practicable, centers established and operated under this
9 section shall serve the mission of the National Institute
10 of Standards and Technology, for the benefit of the broad-
11 er United States quantum information science community,
12 for the following purposes:

13 “(1) Advancing research and standardization in
14 quantum information science, engineering, and tech-
15 nology.

16 “(2) Advancing technology development.

17 “(3) Improving the competitiveness of the
18 United States.

19 “(c) COORDINATION.—The Director of the National
20 Institute of Standards and Technology shall ensure coordi-
21 nation and avoid unnecessary duplication of the activities
22 carried out under this section with existing activities of
23 the Institute, other activities carried out under this Act,
24 and other related programs, as appropriate.

1 “(d) COMMERCIAL TECHNOLOGY.—Each center es-
2 tablished under this section may leverage commercially
3 available hardware and software to carry out the activities
4 described in subsection (a), unless such hardware or soft-
5 ware is manufactured in, or by, a foreign country of con-
6 cern.

7 “(e) FUNDING.—The Director of the National Insti-
8 tute of Standards and Technology shall allocate up to
9 \$18,000,000 for each center established under this section
10 for each of fiscal years 2026 through 2030, subject to the
11 availability of appropriations. Such amounts shall be de-
12 rived from amounts appropriated pursuant to section
13 10211 of the Research and Development, Competition,
14 and Innovation Act (Public Law 117–167).

15 “(f) BRIEFING REQUIREMENTS.—Not later than 1
16 year after the date of the enactment of the National Quan-
17 tum Initiative Reauthorization Act of 2026, and not less
18 frequently than once each year thereafter, the Director of
19 the National Institute of Standards and Technology shall
20 provide the Committee on Commerce, Science, and Trans-
21 portation of the Senate and the Committee on Science,
22 Space, and Technology of the House of Representatives
23 a briefing on current and planned activities under this sec-
24 tion.

1 **“SEC. 203. RESEARCH SECURITY.**

2 “The activities authorized under this title shall be
3 carried out in a manner consistent with subtitle D of title
4 VI of the Research and Development, Competition, and
5 Innovation Act (42 U.S.C. 19231 et seq.) and section
6 6432 of the Servicemember Quality of Life Improvement
7 and National Defense Authorization Act for Fiscal Year
8 2025 (Public Law 118–159; 42 U.S.C. 7144b note).”.

9 **SEC. 14. NATIONAL SCIENCE FOUNDATION QUANTUM IN-**
10 **FORMATION SCIENCE RESEARCH AND EDU-**
11 **CATION ACTIVITIES.**

12 Section 301 of the National Quantum Initiative Act
13 (15 U.S.C. 8841) is amended—

14 (1) in the section heading, by inserting “, **EN-**
15 **GINEERING, AND TECHNOLOGY**” after
16 **“SCIENCE**”;

17 (2) in subsection (a), by striking “science and
18 engineering” and inserting “science, engineering,
19 and technology”;

20 (3) in subsection (b)—

21 (A) in paragraph (1)—

22 (i) in subparagraph (A), by striking
23 “science and engineering” and inserting
24 “science, engineering, and technology”;
25 and

26 (ii) in subparagraph (B)—

1 (I) by striking “human re-
2 sources” and inserting “education and
3 workforce”; and

4 (II) by striking “science and en-
5 gineering” and inserting “science, en-
6 gineering, and technology”; and

7 (B) in paragraph (2)—

8 (i) in subparagraph (A)—

9 (I) in clause (i)—

10 (aa) by striking “science and
11 engineering” and inserting
12 “science, engineering, and tech-
13 nology”; and

14 (bb) by striking “and” after
15 the semicolon;

16 (II) in clause (ii), by inserting
17 “and” after the semicolon; and

18 (III) by adding at the end the
19 following:

20 “(iii) to pursue research at the fron-
21 tiers of quantum information science, engi-
22 neering, and technology, and explore solu-
23 tions to important challenges for the devel-
24 opment and application of quantum tech-
25 nologies;”;

1 (ii) in subparagraph (B), by striking
2 “science and engineering” and inserting
3 “science, engineering, and technology”;
4 and

5 (iii) in subparagraph (C), by striking
6 “science and engineering” and inserting
7 “science, engineering, and technology”;

8 (4) by striking subsection (c) and inserting the
9 following:

10 “(c) STUDENT TRAINEESHIPS, FELLOWSHIPS, AND
11 OTHER MODELS.—

12 “(1) QUANTUM TRAINEESHIPS.—The Director
13 of the National Science Foundation, in consultation
14 with heads of Federal agencies as the Director con-
15 siders appropriate, may use existing programs to
16 make awards to institutions of higher education or
17 nonprofit organizations (or consortia thereof)—

18 “(A) to provide traineeships to graduate
19 students at institutions of higher education
20 within the United States who are citizens of the
21 United States and who choose or plan to pursue
22 master or doctoral degrees in quantum informa-
23 tion science, engineering, and technology, or re-
24 lated fields; and

1 “(B) to provide such graduate students
2 with opportunities for research experiences in
3 government or industry related to such stu-
4 dents’ quantum studies.

5 “(2) QUANTUM FELLOWSHIPS AND SCHOLAR-
6 SHIPS.—

7 “(A) IN GENERAL.—The Director of the
8 National Science Foundation, in consultation
9 with heads of Federal agencies as the Director
10 considers appropriate, may use existing pro-
11 grams to support fellowships and scholarships
12 for students at institutions of higher education
13 for the purpose of—

14 “(i) increasing quantum information
15 science, engineering, and technology expo-
16 sure for undergraduate and graduate
17 STEM students; and

18 “(ii) increasing postgraduation em-
19 ployment opportunities for STEM students
20 who demonstrate potential to pursue ca-
21 reers in quantum information science, en-
22 gineering, and technology.

23 “(B) REQUIREMENTS.—An eligible partici-
24 pant in the fellowship and scholarship program
25 under this paragraph shall—

1 “(i) be enrolled in or have graduated
2 from a STEM degree program at an insti-
3 tution of higher education within the
4 United States; and

5 “(ii) have demonstrated interest in
6 quantum information science, engineering,
7 and technology, such as by taking not less
8 than 1 quantum science or quantum-rel-
9 evant course as part of the participant’s
10 degree program or by participating in a
11 summer school program that focuses on
12 quantum information science, engineering,
13 and technology.

14 “(C) CONSIDERATIONS.—Eligible fellow-
15 ships and scholarship programs under this
16 paragraph may include temporary quantum-re-
17 lated positions at Federal or State agencies,
18 National Laboratories, private sector entities,
19 institutions of higher education, the quantum
20 centers established under section 202, the Mul-
21 tidisciplinary Centers for Quantum Research
22 and Education established under section 302,
23 the National Quantum Information Science Re-
24 search Centers established under section 402,
25 and the initiatives established under section

1 503, or other quantum-relevant entities, as de-
2 termined appropriate by the Director.

3 “(D) COMPETITIVE AWARDS.—Fellowships
4 and scholarships awarded under this paragraph
5 shall be competitively awarded through a merit-
6 review process. The Director of the National
7 Science Foundation may prioritize fellowships
8 that include an industry partner that provides
9 financial assistance to awardees for direct or in-
10 direct costs.

11 “(3) QUANTUM RESEARCH EXPERIENCES FOR
12 UNDERGRADUATES.—The Director of the National
13 Science Foundation shall seek to increase opportuni-
14 ties for quantum research for undergraduate stu-
15 dents by encouraging proposals in quantum informa-
16 tion science, engineering, and technology, through
17 the research experiences for undergraduates pro-
18 vided under section 514 of the America COM-
19 PETES Reauthorization Act of 2010 (42 U.S.C.
20 1862p-6).

21 “(4) COOPERATIVE EDUCATION PROGRAMS.—
22 The Director of the National Science Foundation, in
23 consultation with heads of Federal agencies the Di-
24 rector considers appropriate, may establish, or use
25 existing, programs to support cooperative education

1 programs between institutions of higher education
2 and employers that increase opportunities for under-
3 graduate students to acquire experiential learning
4 and professional experiences in quantum information
5 science, engineering, and technology.

6 “(5) PARTNERSHIPS.—In carrying out the ac-
7 tivities under this subsection, the Director of the
8 National Science Foundation shall encourage recipi-
9 ents of awards under this subsection to partner with
10 relevant Federal agencies, Federal laboratories, in-
11 dustry and other private sector organizations, and
12 nonprofit organizations to facilitate the expansion of
13 workforce pathways and hands-on learning experi-
14 ences.”;

15 (5) in subsection (d)—

16 (A) in the subsection heading, by striking
17 “QISE” and inserting “QISET”;

18 (B) in paragraph (1)—

19 (i) by striking “information science
20 and engineering (referred to in this sub-
21 section as ‘QISE’)” and inserting “infor-
22 mation science, engineering, and tech-
23 nology (referred to in this subsection as
24 ‘QISET’)”;

1 (ii) by striking “at all education lev-
2 els, including community colleges” and in-
3 sserting “at appropriate education levels,
4 including community colleges and career
5 and technical education entities”;

6 (C) in paragraph (2)—

7 (i) in subparagraph (A), by striking
8 “QISE” and inserting “quantum informa-
9 tion science, engineering, and technology”;

10 (ii) by striking subparagraph (C);

11 (iii) by redesignating subparagraphs
12 (D) and (E), as subparagraphs (C) and
13 (D), respectively;

14 (iv) in subparagraph (C), as so redes-
15 ignated—

16 (I) by inserting “, engineering,
17 and technology” after “science”; and

18 (II) by inserting “, including
19 those principles relevant to emerging
20 technologies, such as artificial intel-
21 ligence, microelectronics, and nano-
22 technology” after “fields”; and

23 (v) by inserting after subparagraph
24 (D), as so redesignated, the following:

1 “(E) Methods to introduce security dimen-
 2 sions associated with quantum information
 3 science, engineering, and technology into STEM
 4 curricula.”;

5 (D) in paragraph (3), by striking “QISE”
 6 and inserting “quantum information science,
 7 engineering, and technology”; and

8 (E) by striking paragraph (4); and
 9 (6) by adding at the end the following:

10 “(e) INTERNATIONAL RESEARCH ON QUANTUM IN-
 11 FORMATION SCIENCE, ENGINEERING, AND TECH-
 12 NOLOGY.—

13 “(1) IN GENERAL.—The Director of the Na-
 14 tional Science Foundation, in coordination with the
 15 Secretary of State and the heads of other Federal
 16 agencies, as appropriate, shall support international
 17 quantum information science, engineering, and tech-
 18 nology research, as appropriate, to enhance inter-
 19 national cooperation and meet United States com-
 20 mitments, including as part of the terms and condi-
 21 tions of bilateral or multilateral quantum informa-
 22 tion science, engineering, and technology research
 23 agreements.

24 “(2) ALIGNMENT.—In carrying out this sub-
 25 section, the Director of the National Science Foun-

1 dation shall ensure alignment with the national
2 strategy for quantum information science in accord-
3 ance with Executive Order 14073 (87 Fed. Reg.
4 27909; relating to enhancing the National Quantum
5 Initiative Advisory Committee) or successor strate-
6 gies.

7 “(3) PRIORITY.—The Director shall prioritize
8 research programs with countries that have signed a
9 quantum cooperation statement with the United
10 States.

11 “(4) RESTRICTIONS.—

12 “(A) CONFUCIUS INSTITUTE.—None of the
13 funds made available under this subsection may
14 be obligated or expended to an institution of
15 higher education that maintains a contract or
16 agreement between such institution and a Con-
17 fucius Institute, as defined in section 10339A
18 of the Research and Development, Competition,
19 and Innovation Act (42 U.S.C. 19039) or any
20 successor of a Confucius Institute.

21 “(B) FOREIGN COUNTRY OF CONCERN AND
22 FOREIGN ENTITY OF CONCERN.—None of the
23 funds made available under this subsection may
24 be obligated or expended to promote, establish,
25 or finance quantum research activities between

1 a United States entity and a foreign country of
2 concern or foreign entity of concern, including
3 the entity's subsidiaries.

4 “(f) UPGRADING AND IMPROVING ACCESS TO QUAN-
5 TUM RESEARCH RESOURCES.—

6 “(1) IN GENERAL.—In carrying out the activi-
7 ties described in this section, the Director of the Na-
8 tional Science Foundation, in consultation with the
9 heads of other Federal departments and agencies, as
10 appropriate, shall award grants to institutions of
11 higher education or eligible nonprofit organizations
12 (or consortia thereof) to upgrade research facilities
13 and improve access to research resources, such as
14 equipment and instrumentation, that is needed for
15 research and development in quantum information
16 science, engineering, and technology.

17 “(2) PURPOSE.—Grants under paragraph (1)
18 shall be used to facilitate quantum information
19 science, engineering, and technology research and
20 development, including by carrying out the following:

21 “(A) Upgrading or adding research re-
22 sources to—

23 “(i) accelerate the development of
24 quantum technologies, including capabili-

1 ties focused on addressing the roadblocks
2 to implementation; and

3 “(ii) meet the materials, advanced
4 materials development, high-performance
5 computing, heterogeneous computing, net-
6 working, software, data, clean room, and
7 device needs of the scientific community
8 and the quantum supply chain.

9 “(B) Enhancing access to equipment and
10 instrumentation, including at partnering insti-
11 tutions, by facilitating information sharing, co-
12 ordination, education, and training, including
13 activities that provide meaningful hands-on
14 learning experiences for students, including at
15 community and technical colleges.

16 “(C) Enabling professional staff to support
17 the operation, scheduling, and improvement of
18 research resources used for quantum informa-
19 tion science, engineering, and technology.

20 “(3) REQUIREMENTS.—An institution of higher
21 education or an eligible nonprofit organization (or a
22 consortium thereof) seeking funding under this sub-
23 section shall submit to the Director of the National
24 Science Foundation an application at such time, in

1 such manner, and containing such information as
2 the Director may require.”.

3 **SEC. 15. MULTIDISCIPLINARY CENTERS FOR QUANTUM RE-**
4 **SEARCH AND EDUCATION.**

5 Section 302 of the National Quantum Initiative Act
6 (15 U.S.C. 8842) is amended—

7 (1) in subsection (a), by striking “5” and in-
8 serting “8”;

9 (2) in subsection (c)—

10 (A) in paragraph (1), by striking “science
11 and engineering” and inserting “science, engi-
12 neering, and technology”;

13 (B) in paragraph (2), by striking “and en-
14 gineering” and inserting “; engineering, and
15 technology, including leveraging or expanding
16 activities established pursuant to section
17 301(d)”;

18 (C) in paragraph (3), by inserting “, such
19 as commercially available hardware and soft-
20 ware” after “resources”;

21 (3) in subsection (d)(2)—

22 (A) in subparagraph (A), by striking
23 “quantum science,” and inserting “quantum in-
24 formation science, engineering, and tech-
25 nology.”;

1 (B) in subparagraph (B), by inserting
2 “biotechnology,” after “chemistry.”;

3 (C) in subparagraph (D), by striking
4 “and” after the semicolon;

5 (D) in subparagraph (E), by striking the
6 period and inserting a semicolon; and

7 (E) by adding at the end the following:

8 “(F) how the Center will participate in
9 international collaborations, as appropriate, to
10 build a trusted global research network with al-
11 lies and partners of the United States and
12 other countries that share values with the
13 United States;

14 “(G) how the Center will protect research
15 from foreign countries of concern and foreign
16 entities of concern, and the subsidiaries of such
17 foreign entities, to ensure the competitiveness of
18 the United States; and

19 “(H) how the Center will regularly assess
20 and report on progress toward achieving self-
21 sustainability, including metrics, milestones,
22 and a timeline for meeting the long-term goal
23 described in subparagraph (E).”;

24 (4) in subsection (e), by striking paragraph (2)
25 and inserting the following:

1 “(2) REAPPLICATION.—An awardee may re-
2 apply for an additional, subsequent period of 5 years
3 following a successful, merit-based review.”;

4 (5) in subsection (f), by striking “2019 through
5 2023” and inserting “2026 through 2030”; and

6 (6) by adding at the end the following:

7 “(g) BRIEFING REQUIREMENTS.—Not later than 1
8 year after the date of the enactment of the National Quan-
9 tum Initiative Reauthorization Act of 2026, and not less
10 frequently than annually thereafter, the Director of the
11 National Science Foundation shall brief the appropriate
12 committees of Congress on current and planned activities
13 under this section. Each briefing shall include—

14 “(1) an assessment of how each Center is pro-
15 gressing toward the goal of self-sustainability de-
16 scribed in subsection (d)(2)(E); and

17 “(2) a summary of the most recent reports sub-
18 mitted by the Centers regarding such progress in ac-
19 cordance with subsection (d)(2)(H).”.

20 **SEC. 16. QUANTUM TESTBEDS; RESEARCH SECURITY.**

21 Title III of the National Quantum Initiative Act (15
22 U.S.C. 8841 et seq.) is amended by adding at the end
23 the following:

1 **“SEC. 303. QUANTUM TESTBEDS.**

2 “(a) **IN GENERAL.**—Not later than 1 year after the
3 date of enactment of the National Quantum Initiative Re-
4 authorization Act of 2026, the Director of the National
5 Science Foundation, in coordination with the Director of
6 the National Institute of Standards and Technology, the
7 Secretary of Energy, the Administrator of the National
8 Aeronautics and Space Administration, and the heads of
9 other Federal agencies, as determined appropriate by the
10 Director of the National Science Foundation, shall make
11 awards on a competitive, merit-reviewed basis to institu-
12 tions of higher education, nonprofit organizations, feder-
13 ally funded research and development centers, or consortia
14 thereof, to establish testbeds focused on quantum applica-
15 tions.

16 “(b) **PURPOSES.**—The quantum testbeds established
17 under subsection (a) shall focus on advancing early-stage
18 quantum research toward validated and deployable quan-
19 tum applications, as determined by the Director of the Na-
20 tional Science Foundation, through proof-of-concept test-
21 ing, demonstrations, pilot projects, benchmarking, and
22 prototyping, by—

23 “(1) supporting translational quantum research
24 and development activities for quantum application
25 use cases, including, for testbeds featuring quantum
26 software and quantum algorithms driving toward

1 utility, leveraging approaches such as algorithm in-
2 novation and tools such as resource estimators;

3 “(2) providing accessible research resources for
4 developing, testing, and benchmarking the applica-
5 tion of quantum technologies to likely use cases, in-
6 cluding enabling quantum cloud access;

7 “(3) investing in quantum computing tech-
8 nologies that show promise for viability, including di-
9 recting funding to advance each layer of the stack
10 and related systems engineering and integration; and

11 “(4) demonstrating feasibility and establishing
12 cost and benefit to facilitate transition to real-world
13 applications or agency adoption.

14 “(c) APPLICATIONS.—An applicant for an award
15 under this section shall submit to the Director of the Na-
16 tional Science Foundation an application at such time, in
17 such manner, and containing such information as the Di-
18 rector determines to be necessary to evaluate the applica-
19 tion using the criteria described in subsection (d). The ap-
20 plication shall, at a minimum, describe the following:

21 “(1) How the applicant will assemble a work-
22 force with the skills needed to operate a quantum
23 testbed.

1 “(2) How the applicant will ensure broad access
2 to a quantum testbed, including for start-ups and
3 research institutions.

4 “(3) How a quantum testbed will operate after
5 Federal funding has ended.

6 “(4) How the applicant will contribute to the
7 quantum testbed, such as through funding or other
8 resources required to develop quantum applications.

9 “(5) How the applicant will protect any re-
10 search or advancements made as a result of using
11 the quantum testbed.

12 “(6) How the applicant will facilitate transition
13 of testbed outcomes to subsequent development
14 stages, including real-world applications or agency
15 use.

16 “(d) COMPETITIVE, MERIT-REVIEWED PROCESS.—
17 The Director of the National Science Foundation shall se-
18 lect applications submitted under subsection (c) for
19 awards using a formal, merit review process that shall—

20 “(1) ensure that applications selected are the
21 most technically sound and strategically aligned;

22 “(2) prioritize applications that demonstrate
23 strong potential to enhance United States leadership
24 in quantum applications;

1 “(3) support initiatives that align with the stra-
2 tegic goals of the National Science Foundation while
3 avoiding unnecessary duplication with efforts led by
4 other Federal agencies;

5 “(4) facilitate a competitive, transparent, and
6 objective selection process, utilizing qualified subject-
7 matter experts; and

8 “(5) include appropriate consideration of appli-
9 cation feasibility, cost-effectiveness, technological
10 maturity, and risk mitigation.

11 “(e) PRIORITIZATION.—In awarding grants under
12 this section, the Director of the National Science Founda-
13 tion shall prioritize the following:

14 “(1) Applicants that ensure not less than 25
15 percent of the cost for a quantum testbed estab-
16 lished under this section is provided by private or
17 non-Federal entities, including through in-kind con-
18 tributions.

19 “(2) Awards for consortia that include quantum
20 industry participation.

21 “(3) Applicants that demonstrate a plan for
22 transitioning quantum testbed outcomes, including
23 through partnerships with industry or Federal agen-
24 cy end-users.

1 “(f) ROLES AND RESPONSIBILITIES.—The Director
2 of the National Science Foundation shall be responsible
3 for the following:

4 “(1) Maintaining a record of notable outcomes
5 from each quantum testbed established under this
6 section.

7 “(2) Partnering with other Federal agencies to
8 enable opportunities for quantum testbed outcomes
9 to be transitioned to such agencies in alignment with
10 the missions of such agencies.

11 “(3) Not later than 1 year after the date of the
12 enactment of the National Quantum Initiative Reau-
13 thorization Act of 2026 and every 2 years thereafter
14 until December 31, 2030, briefing the appropriate
15 committees of Congress on the status of such quan-
16 tum testbeds and providing recommendations for im-
17 proving such quantum testbeds.

18 “(g) COORDINATION.—In supporting quantum
19 testbeds established under this section, the Director of the
20 National Science Foundation shall ensure coordination
21 with other testbeds and other quantum facilities hosting
22 Federal quantum technology and infrastructure supported
23 by the National Science Foundation, including those
24 testbeds and facilities authorized pursuant to section
25 10390 of the Research and Development, Competition,

1 and Innovation Act (42 U.S.C. 19110), or by other Fed-
2 eral agencies as determined appropriate by the Director,
3 to avoid duplication and maximize use of Federal re-
4 sources.

5 “(h) **STAKEHOLDER COLLABORATION.**—In carrying
6 out this section, the Director of the National Science
7 Foundation shall collaborate with the Quantum Consor-
8 tium established pursuant to section 201(b) to accomplish
9 the purposes of the quantum testbeds program described
10 in subsection (b) and ensure there is strong collaboration
11 with industry stakeholders. The Director may also engage
12 with National Laboratories, federally funded research and
13 development centers, industry, and other members of the
14 United States quantum ecosystem.

15 **“SEC. 304. RESEARCH SECURITY.**

16 “(a) **RESEARCH SECURITY.**—The activities author-
17 ized under this title shall be carried out in a manner con-
18 sistent with subtitle D of title VI of the Research and De-
19 velopment, Competition, and Innovation Act (42 U.S.C.
20 19231 et seq.).

21 “(b) **REVIEW OF VISITORS AND ASSIGNEES FROM**
22 **COUNTRIES OF RISK.**—The Director of the National
23 Science Foundation shall establish policies and procedures
24 to assess and screen visitors and assignees to National
25 Science Foundation-supported facilities that are similar,

1 to the extent practicable, to the policies and procedures
2 regarding visitors and assignees to the National Labora-
3 tories that were established in accordance with section
4 6432 of the Servicemember Quality of Life Improvement
5 and National Defense Authorization Act for Fiscal Year
6 2025 (42 U.S.C. 7144b note).”.

7 **SEC. 17. NATIONAL SCIENCE FOUNDATION CRYPTOGRAPHY**
8 **RESEARCH.**

9 Section 4(a)(1)(A) of the Cyber Security Research
10 and Development Act (15 U.S.C. 7403) is amended by in-
11 serting “, including post-quantum cryptography (as such
12 term is defined in section 3 of the Quantum Computing
13 Cybersecurity Preparedness Act (6 U.S.C. 1526 note;
14 Public Law 117–260))” before the semicolon.

15 **SEC. 18. NATIONAL AERONAUTICS AND SPACE ADMINIS-**
16 **TRATION QUANTUM ACTIVITIES.**

17 (a) IN GENERAL.—The National Quantum Initiative
18 Act (15 U.S.C. 8801 et seq.) is amended by adding at
19 the end the following new title:

1 **“TITLE V—NATIONAL AERO-**
2 **NAUTICS AND SPACE ADMIN-**
3 **ISTRATION QUANTUM ACTIVI-**
4 **TIES**

5 **“SEC. 501. DEFINITION OF ADMINISTRATOR.**

6 “In this title, the term ‘Administrator’ means the Ad-
7 ministrator of the National Aeronautics and Space Admin-
8 istration.

9 **“SEC. 502. QUANTUM INFORMATION SCIENCE, ENGINEER-**
10 **ING, AND TECHNOLOGY RESEARCH FOR**
11 **SPACE AND AERONAUTICS.**

12 “(a) IN GENERAL.—The Administrator is authorized
13 to carry out research on quantum information science, en-
14 gineering, and technology.

15 “(b) COOPERATION.—In carrying out subsection (a),
16 the Administrator—

17 “(1) shall consider cooperative arrangements
18 with the Department of Energy and other Federal
19 Government agencies, as practicable, on areas of
20 shared benefit; and

21 “(2) may enter into memoranda of under-
22 standing or memoranda of agreement to establish
23 such cooperative arrangements.

24 “(c) STRATEGY.—Not later than 180 days after the
25 date of the enactment of this title, the Administrator shall

1 submit to the appropriate committees of Congress a strat-
2 egy for National Aeronautics and Space Administration
3 research on quantum information science, engineering,
4 and technology. The strategy shall identify resources re-
5 quired to support implementation of the strategy, includ-
6 ing budgets, workforce, and infrastructure, describe coop-
7 erative efforts with other Federal Government agencies,
8 and address areas of research and applications, including
9 the following:

10 “(1) Quantum sensing.

11 “(2) Quantum networking.

12 “(3) Quantum communications, including quan-
13 tum satellite communications.

14 “(4) Quantum computing.

15 “(5) Science, aeronautics, and exploration-re-
16 lated applications.

17 “(6) Any other area of quantum information,
18 science, engineering, and technology that furthers
19 the mission of the National Aeronautics and Space
20 Administration and is consistent with the purposes
21 of this Act, as the Administrator considers appro-
22 priate.

23 “(d) CONSULTATION.—In developing the strategy de-
24 scribed in subsection (c), the Administrator may seek
25 input from relevant external stakeholders, including insti-

1 tutions of higher education, industry, and nonprofit re-
2 search organizations.

3 **“SEC. 503. NATIONAL AERONAUTICS AND SPACE ADMINIS-**
4 **TRATION QUANTUM INITIATIVES.**

5 “(a) IN GENERAL.—Subject to the availability of ap-
6 propriations, the Administrator, in consultation with the
7 heads of other Federal departments and agencies, as ap-
8 propriate, may establish one or more initiatives focused
9 on space and aeronautics applications of quantum infor-
10 mation science, engineering, and technology.

11 “(b) INITIATIVE DETAILS.—

12 “(1) MERIT-BASED REVIEW PROCESS.—

13 “(A) IN GENERAL.—The Administrator
14 shall develop and implement a formal, merit-
15 based review process for evaluating proposals,
16 applications, and initiatives submitted to the
17 National Aeronautics and Space Administration
18 with respect to the research, development, or
19 deployment of quantum technologies with po-
20 tential relevance to the civil space and aéro-
21 nautics missions of the National Aeronautics
22 and Space Administration.

23 “(B) CRITERIA.—The process established
24 under subparagraph (A) shall be designed—

1 “(i) to ensure taxpayer dollars are di-
2 rected to the most technically sound and
3 strategically aligned quantum technology
4 proposals;

5 “(ii) to prioritize applications that
6 demonstrate strong potential to enhance
7 United States leadership in space-based
8 quantum applications, including sensing,
9 navigation, communications, simulation,
10 and computing;

11 “(iii) to support initiatives that align
12 with the strategic goals of the National
13 Aeronautics and Space Administration and
14 avoid unnecessary duplication of efforts led
15 by other Federal agencies;

16 “(iv) to facilitate a competitive, trans-
17 parent, and objective selection process
18 using qualified subject-matter experts; and

19 “(v) to include appropriate consider-
20 ation of project feasibility, cost-effective-
21 ness, technological maturity, and risk miti-
22 gation.

23 “(2) APPLICATION REQUIREMENTS.—An appli-
24 cant under this section shall submit to the Adminis-
25 trator an application at such time, in such manner,

1 and containing such technical, programmatic, and
2 budgetary information as the Administrator deter-
3 mines necessary to evaluate the application through
4 the review process developed under paragraph (1).

5 “(3) ELIGIBLE APPLICANTS.—In carrying out
6 the process under paragraph (1), the Administrator
7 shall consider applications from institutions of high-
8 er education, research centers, multi-institutional
9 collaborations, and any other entity the Adminis-
10 trator considers appropriate.

11 “(4) COLLABORATIONS.—A collaboration that
12 receives an award under this section may include
13 multiple types of research institutions, including in-
14 stitution of higher education, private sector entities,
15 and nonprofit organizations.

16 “(5) COORDINATION AND ACCOUNTABILITY.—
17 The Administrator shall ensure that an awardee
18 under this section—

19 “(A) coordinates with the National Aero-
20 nautics and Space Administration, including by
21 identifying personnel designated to serve as
22 program liaisons for technical and pro-
23 grammatic oversight; and

24 “(B) avoids unnecessary duplication of ex-
25 isting activities of the National Aeronautics and

1 Space Administration, other activities carried
2 out under the National Quantum Initiative Re-
3 authorization Act of 2026 or the amendments
4 made by that Act, and other related programs.

5 “(6) COMMERCIAL TECHNOLOGY.—An initiative
6 established under this section may leverage commer-
7 cially-available hardware and software to carry out
8 the activities described in subsection (c).

9 “(c) INITIATIVE ACTIVITIES.—An initiative estab-
10 lished under this section may carry out activities that—

11 “(1) support research focused on developing
12 and demonstrating space, aeronautics, and explo-
13 ration applications for quantum information science,
14 engineering, and technology, including research re-
15 lating to the strategy developed under section
16 502(c); and

17 “(2) support quantum information science, en-
18 gineering, and technology education and public out-
19 reach.

20 “(d) INITIATIVE REQUIREMENTS.—To the maximum
21 extent practicable, an initiative established under this sec-
22 tion shall serve the needs of the National Aeronautics and
23 Space Administration for the benefit of the broader
24 United States quantum information science community,
25 for the purpose of advancing space and aeronautics appli-

1 eations in quantum information science, engineering, and
2 technology, and improving the competitiveness of the
3 United States.

4 “(e) INITIATIVE SELECTION AND DURATION.—

5 “(1) IN GENERAL.—Subject to the availability
6 of appropriations, an initiative established under this
7 section may carry out activities for a period of 5
8 years.

9 “(2) REAPPLICATION.—Subject to the avail-
10 ability of appropriations, an awardee may reapply
11 for an additional, subsequent period of 5 years fol-
12 lowing a successful, merit-based review.

13 “(3) TERMINATION.—Consistent with the au-
14 thorities of the National Aeronautics and Space Ad-
15 ministration, the Administrator may terminate the
16 initiative for cause during the performance period.

17 **“SEC. 504. RESEARCH SECURITY.**

18 “The activities authorized under this title shall be
19 carried out in a manner consistent with—

20 “(1) subtitle D of title VI of the Research and
21 Development, Competition, and Innovation Act (42
22 U.S.C. 19231 et seq.); and

23 “(2) section 6432 of the Servicemember Quality
24 of Life Improvement and National Defense Author-

1 ization Act for Fiscal Year 2025 (42 U.S.C. 7144b
2 note; Public Law 118–159).

3 **“SEC. 505. AUTHORIZATION OF APPROPRIATIONS.**

4 “The Administrator shall allocate up to \$25,000,000
5 for each of fiscal years 2026 through 2030 to carry out
6 this title, subject to the availability of appropriations.
7 Amounts made available to carry out this title shall be
8 derived from amounts appropriated or otherwise made
9 available to the National Aeronautics and Space Adminis-
10 tration.”.

11 **SEC. 19. COMPTROLLER GENERAL REVIEW AND REPORT.**

12 (a) REVIEW.—Not later than 1 year after the date
13 of the enactment of this Act, the Comptroller General of
14 the United States shall conduct a review of existing proc-
15 esses and reporting requirements associated with research
16 and development programs established within the National
17 Institute of Standards and Technology, the National
18 Science Foundation, and the Department of Energy pur-
19 suant to the National Quantum Initiative Act (15 U.S.C.
20 8801 et seq.) to identify potential opportunities—

21 (1) to reduce duplicative and unnecessary pa-
22 perwork and reporting requirements without com-
23 promising security, transparency, and accountability;
24 and

1 2 of the National Quantum Initiative Act (15 U.S.C.
2 8801).

3 (2) QUANTUM INFORMATION SCIENCE, ENGI-
4 NEERING, AND TECHNOLOGY.—The term “quantum
5 information science, engineering, and technology”
6 has the meaning given such term in section 2 of the
7 National Quantum Initiative Act (15 U.S.C. 8801),
8 as amended by section 2 of this Act.

9 (b) REVIEW AND ASSESSMENT REQUIRED.—Not
10 later than 540 days after the date of the enactment of
11 this Act, the Director of the Office of Science and Tech-
12 nology Policy shall, in coordination with the National
13 Quantum Coordination Office, conduct a review to identify
14 and assess any existing or potential regulatory barriers
15 that inhibit research, development, deployment, or scaling
16 of quantum information science, engineering, and tech-
17 nology.

18 (c) ELEMENTS.—The review and assessment con-
19 ducted pursuant to subsection (b) shall include the fol-
20 lowing:

21 (1) An inventory of existing Federal regula-
22 tions, policies, and guidance documents that are ap-
23 plicable to quantum information science, engineer-
24 ing, and technology.

1 (2) An analysis of whether regulations, policies,
2 and guidance inventoried pursuant to paragraph (1)
3 impose undue burdens on academic, private sector,
4 or government-led quantum information science, en-
5 gineering, and technology research or development.

6 (3) Recommendations to modernize, streamline,
7 or eliminate duplicative or outdated regulatory bar-
8 riers identified pursuant to subsection (b).

9 (4) Input from stakeholders across industry,
10 academia, and the National Laboratories with re-
11 spect to such regulatory barriers.

12 (5) Recommended actions to harmonize regu-
13 latory requirements relating to quantum information
14 science, engineering, and technology across Federal
15 agencies where inconsistencies exist.

16 (d) REPORT.—Not later than 180 days after the date
17 on which the Director completes the review and assess-
18 ment required by subsection (b), the Director shall submit
19 to the appropriate congressional committees a report de-
20 tailing the findings and recommendations described in
21 subsection (c).

22 (e) QUINQUENNIAL UPDATES.—Not later than 5
23 years after the date on which the Director completes the
24 review and assessment required by subsection (b), and
25 every 5 years thereafter, the Director shall update the re-

1 view and assessment required by subsection (b) and sub-
2 mit to the appropriate congressional committees an up-
3 dated report detailing the findings and recommendations
4 of the Director.

5 **SEC. 21. SUNSET OF NATIONAL NANOTECHNOLOGY PRO-**
6 **GRAM.**

7 (a) **SUNSET OF NATIONAL NANOTECHNOLOGY PRO-**
8 **GRAM.**—The National Nanotechnology Program (in this
9 section referred to as the “Program”) and the authorities
10 and requirements of the 21st Century Nanotechnology Re-
11 search and Development Act (15 U.S.C. 7501 et seq.) are
12 terminated on the date that is 180 days after the date
13 of the enactment of this Act.

14 (b) **WIND-DOWN.**—The Director of the Office of
15 Science and Technology Policy shall take such actions as
16 may be necessary to terminate and wind down the Pro-
17 gram before the date specified in subsection (a).

18 (c) **PLAN AND BRIEFING.**—

19 (1) **IN GENERAL.**—Not later than 90 days after
20 the date of the enactment of this Act, the Director
21 of the Office of Science and Technology Policy shall
22 provide to the Committee on Commerce, Science,
23 and Transportation of the Senate and the Com-
24 mittee on Science, Space, and Technology of the
25 House of Representatives a briefing in which the Di-

1 rector shall present a plan on how the Director will
2 carry out subsection (b).

3 (2) ELEMENTS.—The plan presented under
4 paragraph (1) shall—

5 (A) ensure minimal disruption to ongoing
6 federally funded research and development ac-
7 tivities;

8 (B) ensure transfer or reassignment of
9 nanotechnology research infrastructure pro-
10 grams and facilities to minimize disruption of
11 researcher access to critical tools that support
12 other national priorities;

13 (C) provide for the orderly disposition or
14 transfer of active grants, contracts, and per-
15 sonnel associated with the National Nanotech-
16 nology Coordination Office established under
17 section 3(a) of the 21st Century Nanotechnol-
18 ogy Research and Development Act (15 U.S.C.
19 7502(a));

20 (D) identify any relevant responsibilities
21 that should be reassigned to existing programs
22 at the Office of Science and Technology Policy;
23 and

24 (E) minimize duplication and ensure fiscal
25 efficiency in the conclusion of the Program.

1 **SEC. 22. CLERICAL AMENDMENTS.**

2 The table of contents in section 1(b) of the National
3 Quantum Initiative Act is amended as follows:

4 (1) By inserting after the item relating to sec-
5 tion 105 the following new items:

“Sec. 105A. International Quantum Cooperation Strategy.
“Sec. 106. National quantum prize challenges.”.

6 (2) By inserting after the item relating to sec-
7 tion 201 the following new items:

“Sec. 202. National Institute of Standards and Technology Quantum Centers.
“Sec. 203. Research security.”.

8 (3) By striking the item relating to section 301
9 and inserting the following new item:

“Sec. 301. Quantum information science, engineering, and technology research
and education program.”.

10 (4) By inserting after the item relating to sec-
11 tion 302 the following new items:

“Sec. 303. Quantum testbeds.
“Sec. 304. Research security.”.

12 (5) By adding at the end the following new
13 items:

“TITLE V—NATIONAL AERONAUTICS AND SPACE
ADMINISTRATION QUANTUM ACTIVITIES

“Sec. 501. Definition of Administrator.
“Sec. 502. Quantum information science, engineering, and technology research
for space and aeronautics.
“Sec. 503. National Aeronautics and Space Administration quantum initiatives.
“Sec. 504. Research security.
“Sec. 505. Authorization of appropriations.”.