

#### 117TH CONGRESS 1ST SESSION

# S. 1197

To amend title 10, United States Code, to apply public-private talent exchange programs in the Department of Defense to quantum information sciences and technology research, to increase coordination across agencies and emphasize opportunities in the Department for quantum information sciences and technology research, and for other purposes.

#### IN THE SENATE OF THE UNITED STATES

April 15, 2021

Ms. Hassan (for herself and Mr. Thune) introduced the following bill; which was read twice and referred to the Committee on Armed Services

## A BILL

To amend title 10, United States Code, to apply publicprivate talent exchange programs in the Department of Defense to quantum information sciences and technology research, to increase coordination across agencies and emphasize opportunities in the Department for quantum information sciences and technology research, and for other purposes.

- 1 Be it enacted by the Senate and House of Representa-
- 2 tives of the United States of America in Congress assembled,
- 3 SECTION 1. SHORT TITLE.
- 4 This Act may be cited as the "Quantum for Universal
- 5 Advancement in Nationwide Technology Use and Mod-

- 1 ernization for National Security Act of 2021" or the
- 2 "QUANTUM for National Security Act of 2021".
- 3 SEC. 2. APPLICATION OF PUBLIC-PRIVATE TALENT EX-
- 4 CHANGE PROGRAMS IN THE DEPARTMENT
- 5 OF DEFENSE TO QUANTUM INFORMATION
- 6 SCIENCES AND TECHNOLOGY RESEARCH.
- 7 (a) QUANTUM SCIENCE AND TECHNOLOGY RE-
- 8 SEARCH AS A MODERNIZATION PRIORITY.—Section
- 9 1102(b)(1) of the William M. (Mac) Thornberry National
- 10 Defense Authorization Act for Fiscal Year 2021 (Public
- 11 Law 116–283) is amended by inserting ", including quan-
- 12 tum science and technology research" after "moderniza-
- 13 tion priorities of the Department of Defense".
- 14 (b) Establishment of Public-Private Ex-
- 15 Change Programs.—In carrying out section 1599g of
- 16 title 10, United States Code, the Secretary of Defense
- 17 shall seek to achieve, in the Army, Navy, and Marine
- 18 Corps, the establishment of public-private exchange pro-
- 19 grams, comparable to the Air Force Education with Indus-
- 20 try Program, each with up to 10 program participants,
- 21 focused on private sector entities working on quantum in-
- 22 formation sciences and technology research applications.
- (c) Establishment of Program Billet Of-
- 24 FICE.—The Secretary shall establish a public-private ex-
- 25 change program billet office to temporarily hold billets for

- 1 civilian employees who participate in programs described
- 2 in such section, to ensure that participating Department
- 3 of Defense offices are able to retain their staffing levels
- 4 during the period of participation.
- 5 SEC. 3. MODIFICATION OF SCIENCE, MATHEMATICS, AND
- 6 RESEARCH FOR TRANSFORMATION (SMART)
- 7 DEFENSE EDUCATION PROGRAM.
- 8 (a) PILOT SUBPROGRAM.—Section 2192a of title 10,
- 9 United States Code, as amended by section 242 of the Wil-
- 10 liam M. (Mac) Thornberry National Defense Authoriza-
- 11 tion Act for Fiscal Year 2021 (Public Law 116–283), is
- 12 amended—
- 13 (1) by redesignating subsections (b) through (h)
- as subsections (c) through (i);
- 15 (2) by inserting after subsection (a) the fol-
- lowing new subsection:
- 17 "(b) Requirement for Pilot Subprogram.—(1)
- 18 As a subprogram of the program under subsection (a), the
- 19 Secretary of Defense shall carry out a pilot program to
- 20 be known as the 'National Security Pipeline Pilot Pro-
- 21 gram' (referred to in this section as the 'Pilot Program')
- 22 under which the Secretary shall seek to enter into partner-
- 23 ships with minority-serving institutions to diversify the
- 24 participants in the program under subsection (a).

1	"(2) Under the Pilot Program, the Secretary of De-
2	fense shall—
3	"(A) provide an appropriate amount of financial
4	assistance under subsection (c) to an eligible indi-
5	vidual;
6	"(B) provide such financial assistance to recipi-
7	ents in conjunction with summer internship opportu-
8	nities or other meaningful temporary appointments
9	within the Department; and
10	"(C) periodically evaluate the success of recruit-
11	ing individuals for scholarships under this subsection
12	and on hiring and retaining those individuals in the
13	public sector workforce.
14	"(3)(A) Not later than the date that is three years
15	after the date of the enactment of the Quantum for Uni-
16	versal Advancement in Nationwide Technology Use and
17	Modernization for National Security Act of 2021, the Sec-
18	retary of Defense shall submit to the congressional defense
19	committees a report on the Pilot Program.
20	"(B) The report submitted under subparagraph (A)
21	shall include the following:
22	"(i) Identification of the following:
23	"(I) The number of students participating
24	in the Pilot Program as of the date of the re-
25	port.

1	"(II) The fields of study pursued by such
2	students.
3	"(III) The minority-serving institutions at
4	which such students are enrolled.
5	"(ii) An evaluation of the success of the Pilot
6	Program in recruiting individuals for scholarships
7	under this section and hiring and retaining those in-
8	dividuals in the public sector workforce.
9	"(4) After the date that is five years after the date
10	of the enactment of the Quantum for Universal Advance-
11	ment in Nationwide Technology Use and Modernization
12	for National Security Act of 2021, the Secretary shall ter-
13	minate the Pilot Program or continue the Pilot Program
14	as the Secretary considers appropriate.";
15	(3) in subsection (c)(1), as so redesignated—
16	(A) in subparagraph (A), by striking "sub-
17	section (g)" and inserting "subsection (h)"; and
18	(B) in subparagraph (C), by striking "sub-
19	section (c)" and inserting "subsection (d)"; and
20	(4) by amending subsection (i), as so redesig-
21	nated, to read as follows:
22	"(i) Definitions.—In this section:
23	"(1) The term 'eligible individual' means an in-
24	dividual who—

1	"(A) is pursuing an associate's degree, un-
2	dergraduate degree, or advanced degree; and
3	"(B) is—
4	"(i) a member of a group that is
5	underrepresented in the fields of science
6	and engineering, including women; or
7	"(ii) is enrolled in a degree-program
8	at a minority-serving institution.
9	"(2) The term 'institution of higher education'
10	has the meaning given such term in section 101 of
11	the Higher Education Act of 1965 (20 U.S.C.
12	1001).
13	"(3) The term 'minority-serving institution'
14	means an institution of higher education that is eli-
15	gible under section 371(a) of the Higher Education
16	Act of 1965 (20 U.S.C. 1067q(a)).".
17	(b) Additional Modifications.—Such section
18	2192a is further amended—
19	(1) in subsection (d), as redesignated by sub-
20	section (a)(1), by adding at the end the following
21	new paragraphs:
22	"(4) The Secretary shall, to the degree the Secretary
23	considers practicable and appropriate, allow a person re-
24	ceiving financial assistance under this section to delay

1	completion of the person's service obligation under this
2	section until the person has completed—
3	"(A) the terminal degree program of education
4	that is typically expected in the field the person is
5	pursuing; or
6	"(B) a post-graduate fellowship at a non-De-
7	partment laboratory.
8	"(5) In employing participants during the period of
9	obligated service, the Secretary shall strive to ensure that
10	participants are compensated, to the extent practicable, at
11	a rate that is comparable to the rate of compensation for
12	employment in a similar position in the private sector.";
13	(2) by redesignating subsections (e) through (i),
14	as redesignated by subsection (a)(1), as subsections
15	(f) through (j), respectively;
16	(3) in subsection (h), as so redesignated—
17	(A) by inserting "(1)" before "The Sec-
18	retary of Defense shall"; and
19	(B) by adding at the end the following new
20	paragraph:
21	"(2)(A) The Secretary of Defense shall establish or
22	designate an organization within the Department of De-
23	fense which shall have primary responsibility for building
24	cohesion and collaboration across the various scholarship
25	and employment programs of the Department.

1	"(B) The organization described in subparagraph (A)
2	shall have the following duties—
3	"(i) establish an interconnected network and
4	database across the science, technology, engineering,
5	and mathematics scholarship and employment pro-
6	grams of the Department, including, at a minimum
7	the SMART Defense Education Program, the De-
8	fense Civilian Training Corps, the National Defense
9	Science and Engineering Graduate Fellowship, the
10	Army AEOP apprenticeship program, and the Con-
11	sortium Research Fellows Program;
12	"(ii) aid in matching scholarships to individuals
13	pursuing courses of study in in-demand skill areas;
14	and
15	"(iii) build a network of program participants,
16	past, present, and future whom DOD departments
17	can draw on to fill skills gaps.
18	"(C) On an annual basis, the organization described
19	in subparagraph (A) shall publish, on a publicly accessible
20	website of the Department of Defense, an annual report
21	on the workforce requirements and expected future needs
22	of the civilian workforce of the Department of Defense.";
23	(4) by redesignating subsection (j), as redesig-
24	nated by paragraph (2), as subsection (k); and

- 1 (5) by inserting after subsection (i), as redesig-
- 2 nated by paragraph (2), the following new sub-
- 3 section:
- 4 "(j) Special Rules.—(1) The Secretary shall strive,
- 5 in each year of the program under this section and to the
- 6 greatest extent feasible, to increase the number of appli-
- 7 cants pursuing degrees in quantum sciences or a related
- 8 field of study.
- 9 "(2) The Secretary shall strive to ensure that, in each
- 10 year of the program under this section, at least one new
- 11 graduate level participant is studying in an advanced
- 12 quantum research field.
- 13 "(3) The Secretary shall consider emerging tech-
- 14 nologies, such as quantum computing and information
- 15 sciences and artificial intelligence, as skills and disciplines
- 16 that are critical to the national security functions of the
- 17 Department of Defense.
- 18 "(4) The Secretary shall encourage increased partici-
- 19 pation in the program under this section by students
- 20 studying relevant cross-disciplinary educational tracks
- 21 that touch on more than one area of science, technology,
- 22 engineering, and mathematics.
- 23 "(5) The Secretary shall treat optics, photonics, and
- 24 quantum information sciences as disciplines eligible for the
- 25 program under this section.".

1	(c) Report.—Not later than three years after the
2	date of the enactment of this Act, the Secretary of Defense
3	shall submit to Congress a report on participation and use
4	of the program under section 2192a of title 10, United
5	States Code, as amended by this subsection, with a par-
6	ticular focus on levels of interest from students engaged
7	in studying quantum fields.
8	SEC. 4. MODIFICATION OF AUTHORITY OF SECRETARY OF
9	DEFENSE TO AWARD GRANTS TO SUPPORT
10	SCIENCE, TECHNOLOGY, ENGINEERING, AND
11	MATHEMATICS EDUCATION.
12	Section 2036(g)(2) of title 10, United States Code,
13	as added by section 513 of the William M. (Mac) Thorn-
14	berry National Defense Authorization Act for Fiscal Year
15	2021 (Public Law 116–283), is amended—
16	(1) by redesignating subparagraphs (J) through
17	(M) as subparagraphs (K) through (N), respectively;
18	and
19	(2) by inserting after subparagraph (I) the fol-
20	lowing:
21	"(J) quantum information sciences;".

1	SEC. 5. DEPARTMENT OF DEFENSE FELLOWSHIPS IN QUAN-
2	TUM INFORMATION SCIENCE AND TECH-
3	NOLOGY RESEARCH AND DEVELOPMENT.
4	Section 234 of the John S. McCain National Defense
5	Authorization Act for Fiscal Year 2019 (Public Law 115–
6	232; 10 U.S.C. 2358 note), as amended by section 214
7	of the William M. (Mac) Thornberry National Defense Au-
8	thorization Act for Fiscal Year 2021 (Public Law 116–
9	283), is further amended—
10	(1) by redesignating subsection (f) as sub-
11	section (g); and
12	(2) by inserting after subsection (e) the fol-
13	lowing new subsection (f):
14	"(f) Fellowships.—
15	"(1) Program required.—In carrying out the
16	program required by subsection (a), the Secretary
17	shall, pursuant to another provision of law or
18	through another graduate and postdoctoral fellow-
19	ship program that was in effect on the day before
20	the date of the enactment of the Quantum for Uni-
21	versal Advancement in Nationwide Technology Use
22	and Modernization for National Security Act of
23	2021, such as the National Defense Science and En-
24	gineering Graduate Fellowship Program, carry out a
25	program of fellowships in quantum information
26	science and technology research and development for

- individuals who have graduate or post-graduate degrees.
- "(2) GUIDELINES.—The Secretary shall award fellowships under the program required by paragraph (1) pursuant to guidelines that the Secretary shall establish.
  - "(3) Reports.—Each recipient of a fellowship under the program required by paragraph (1) shall submit to the Secretary a report on the experience of the recipient coming from a learning environment to a practical application of the recipient's knowledge, in order to contribute to the overall understanding of best practices in teaching and advising students on courses of study in quantum information science and technology research and development.
  - "(4) EQUAL ACCESS.—In carrying out the program required by paragraph (1), the Secretary shall strive to ensure that minority and economically disadvantaged students have equal access to fellowships under such program.
  - "(5) Period.—A fellowship awarded under the program required by paragraph (1) shall be for a period of not more than three years.

1	"(6) Limitation.—Amounts made available to
2	carry out the program required by paragraph (1)
3	may only be used for—
4	"(A) the award of fellowships under such
5	program; and
6	"(B) the administrative costs of carrying
7	out such program.".
8	SEC. 6. IMPROVEMENTS TO DEFENSE QUANTUM INFORMA-
9	TION SCIENCE AND TECHNOLOGY RESEARCH
10	AND DEVELOPMENT PROGRAM.
11	(a) Multidisciplinary Partnerships With Uni-
12	VERSITIES.—Section 234 of the John S. McCain National
13	Defense Authorization Act for Fiscal Year 2019 (Public
14	Law 115–232; 10 U.S.C. 2358 note), as amended by sec-
15	tion 5, is further amended—
16	(1) by redesignating subsection (g) as sub-
17	section (h); and
18	(2) by inserting after subsection (f), as added
19	by section 5, the following new subsection (g):
20	"(g) Multidisciplinary Partnerships With
21	Universities.—In carrying out the program under sub-
22	section (a), the Secretary of Defense shall endeavor to de-
23	velop partnerships with universities that are focused on
24	encouraging students to engage in multidisciplinary
25	courses of study.".

1	(b) Sense of Congress.—It is the sense of Con-
2	gress that—
3	(1) funding research, development, and deploy-
4	ment of quantum information sciences and quantum
5	information science-related technologies and systems
6	is a priority; and
7	(2) it is especially critical that the United
8	States continue to prioritize such research, develop-
9	ment, and deployment in consideration of the signifi-
10	cant investment made by China in quantum infor-
11	mation sciences.
12	(c) Comptroller General of the United
13	STATES ASSESSMENT OF PROGRAM.—
14	(1) Assessment and Briefing.—Not later
15	than 180 days after the date of the enactment of
16	this Act, the Comptroller General of the United
17	States shall—
18	(A) commence an assessment of the pro-
19	gram carried out under section 234 of the John
20	S. McCain National Defense Authorization Act
21	for Fiscal Year 2019 (Public Law 115–232; 10
22	U.S.C. 2358 note), as amended by section 5
23	and this section, with consideration of the re-
24	port submitted under subsection (h) of such

1	section (as redesignated by subsection (a)(1) of
2	this section); and
3	(B) provide the congressional defense com-
4	mittees a briefing on the preliminary findings of
5	the Comptroller General with respect to such
6	program.
7	(2) FINAL REPORT.—At a date agreed to by the
8	Comptroller General and the congressional defense
9	committees at the briefing provided pursuant to
10	paragraph (1)(B), the Comptroller General shall
11	submit to the congressional defense committees a
12	final report with the findings of the Comptroller
13	General with respect to the assessment conducted
14	under paragraph (1)(A).
15	(3) Congressional defense committees
16	DEFINED.—In this subsection, the term "congres-
17	sional defense committees" has the meaning given
18	such term in section 101(a) of title 10, United
19	States Code.
20	SEC. 7. IMPROVEMENTS TO NATIONAL QUANTUM INITIA
21	TIVE PROGRAM.
22	(a) Sense of Congress.—It is the sense of Con-
23	gress that—
24	(1) the execution of the National Defense Strat-
25	egy is critical to the functions of the Federal partici-

1	pants of the National Quantum Initiative Program
2	and
3	(2) the success of the National Quantum Initia-
4	tive Program is necessary for the Department of De-
5	fense to carry out the National Defense Strategy.
6	(b) Department of Defense Participation in
7	NATIONAL QUANTUM INITIATIVE PROGRAM.—
8	(1) In General.—The National Quantum Ini-
9	tiative Act (Public Law 115–368; 15 U.S.C. 8801 et
10	seq.) is amended by adding at the end the following
11	new title:
12	"TITLE V—DEPARTMENT OF
13	<b>DEFENSE QUANTUM ACTIVITIES</b>
	"SEC. 501. DEFENSE QUANTUM INFORMATION SCIENCE
14 15	•
14	"SEC. 501. DEFENSE QUANTUM INFORMATION SCIENCE
14 15	"SEC. 501. DEFENSE QUANTUM INFORMATION SCIENCE AND TECHNOLOGY RESEARCH AND DEVEL
14 15 16 17	"SEC. 501. DEFENSE QUANTUM INFORMATION SCIENCE AND TECHNOLOGY RESEARCH AND DEVELOOPMENT PROGRAM.
14 15 16 17	"SEC. 501. DEFENSE QUANTUM INFORMATION SCIENCE  AND TECHNOLOGY RESEARCH AND DEVELO  OPMENT PROGRAM.  "The quantum information science and technology
114 115 116 117 118	"SEC. 501. DEFENSE QUANTUM INFORMATION SCIENCE AND TECHNOLOGY RESEARCH AND DEVEL OPMENT PROGRAM.  "The quantum information science and technology research and development program carried out under sec-
114 115 116 117 118	"SEC. 501. DEFENSE QUANTUM INFORMATION SCIENCE AND TECHNOLOGY RESEARCH AND DEVEL OPMENT PROGRAM.  "The quantum information science and technology research and development program carried out under section 234 of the John S. McCain National Defense Author-
14 15 16 17 18 19 20	"SEC. 501. DEFENSE QUANTUM INFORMATION SCIENCE AND TECHNOLOGY RESEARCH AND DEVEL OPMENT PROGRAM.  "The quantum information science and technology research and development program carried out under section 234 of the John S. McCain National Defense Authorization Act for Fiscal Year 2019 (Public Law 115–232)

### 1 "SEC. 502. COORDINATION.

2	"The Secretary of Energy, the Director of the Na-
3	tional Institute of Standards and Technology, and the Di-
4	rector of the National Science Foundation shall each co-
5	ordinate with the Secretary of Defense in the efforts of
6	the Secretary of Defense to conduct basic research to ac-
7	celerate scientific breakthroughs in quantum information
8	science and technology.".
9	(2) CLERICAL AMENDMENT.—The table of con-
10	tents is section 1(b) of such Act is amended by add-
11	ing at the end the following:
	"TITLE V—DEPARTMENT OF DEFENSE QUANTUM ACTIVITIES
	"Sec. 501. Defense quantum information science and technology research and development program.
	"Sec. 502. Coordination.".
12	(c) Assessment by Comptroller General of
13	THE UNITED STATES OF NATIONAL QUANTUM INITIA-
14	TIVE PROGRAM.—
15	(1) IN GENERAL.—The Comptroller General of
16	the United States shall—
17	(A) assess the National Quantum Initiative
18	Program; and
19	(B) submit to Congress a report on the
20	findings of the Comptroller General with re-
21	spect to such assessment.
22	(2) Elements.—The assessment required by
23	paragraph (1)(A) shall cover the following:

1	(A) The effectiveness of the National
2	Quantum Initiative Program.
3	(B) Whether all of the programs, commit-
4	tees, and centers required by the National
5	Quantum Initiative Act (15 U.S.C. 8801 et
6	seq.) have been established.
7	(C) Whether the agencies, programs, com-
8	mittees, and centers described in subparagraph
9	(B) are effectively collaborating together and
10	conducting joint activities where appropriate.
11	(D) Identification of inefficiencies or dupli-
12	cations across the various programs of the Na-
13	tional Quantum Initiative Program.
14	(d) Additional Improvements in Coordina-
15	TION.—
16	(1) In General.—The Secretary of Energy,
17	the Secretary of Commerce acting through the Di-
18	rector of the National Institute of Standards and
19	Technology, the Director of the National Science
20	Foundation, and the heads of other Federal agencies
21	participating in the National Quantum Initiative
22	Program shall coordinate with each other and the
23	heads of other relevant Federal agencies, including
24	the Secretary of Defense, to carry out the goals of
25	the National Quantum Initiative Program.

1	(2) Subcommittee on the economic and
2	SECURITY IMPLICATIONS OF QUANTUM SCIENCE.—
3	(A) ESTABLISHMENT.—The President
4	shall establish, through the National Science
5	and Technology Council, the Subcommittee on
6	the Economic and Security Implications of
7	Quantum Science (in this paragraph referred to
8	as the "Subcommittee").
9	(B) Membership.—
10	(i) Composition.—The Subcommittee
11	shall be composed of members as follows:
12	(I) One member appointed by the
13	Director of the National Institute of
14	Standards and Technology.
15	(II) One member appointed by
16	the Director of the National Science
17	Foundation.
18	(III) One member appointed by
19	the Secretary of Energy.
20	(IV) One member appointed by
21	the Administrator of the National
22	Aeronautics and Space Administra-
23	tion.
24	(V) Three members appointed by
25	the Secretary of Defense, of whom—

1	(aa) one shall be a rep-
2	resentative of the Army;
3	(bb) one shall be a rep-
4	resentative of the Navy; and
5	(cc) one shall be a rep-
6	resentative of the Air Force.
7	(VI) One member appointed by
8	the Director of the National Security
9	Agency.
10	(VII) One member appointed by
11	the Director of National Intelligence.
12	(VIII) One member appointed by
13	the Director of the Office of Science
14	and Technology Policy.
15	(IX) Such other members as the
16	President considers appropriate.
17	(ii) REQUIREMENT.—Each member of
18	the Subcommittee shall be an employee of
19	the Federal Government.
20	(C) Chairpersons.—The Director of the
21	Office of Science and Technology Policy, the
22	Secretary of Defense, the Secretary of Energy,
23	and the Director of the National Security Agen-
24	cy shall jointly be chairpersons of the Sub-
25	committee.

1	(D) Duties.—The Subcommittee shall—
2	(i) coordinate with the National
3	Science and Technology Council and its
4	subcommittees to ensure that the economic
5	and national security implications of basic
6	research and development in quantum in-
7	formation science, along with other related
8	technologies, are reviewed and planned for;
9	(ii) analyze economic and national se-
10	curity risks arising from research and de-
11	velopment in such areas and make rec-
12	ommendations on how to mitigate those
13	risks; and
14	(iii) review new programs for national
15	security implications, when feasible, prior
16	to public announcement.
17	(E) Report to congress.—Not later
18	than 180 days after the date of the enactment
19	of this Act, the chairpersons of the Sub-
20	committee shall submit to Congress a report on
21	the findings and assessments of the Sub-
22	committee regarding economic and national se-
23	curity risks resulting from quantum information
24	science and technology research.

1	(F) TERMINATION.—The Subcommittee
2	shall terminate on the later of the following:
3	(i) The date that is five years after
4	the date of the enactment of this Act.
5	(ii) Such date as the Subcommittee
6	determines appropriate.
7	(3) Involvement of defense in national
8	QUANTUM INITIATIVE ADVISORY COMMITTEE.—
9	(A) QUALIFICATIONS.—Subsection (b) of
10	section 104 of the National Quantum Initiative
11	Act (Public Law 115–368; 15 U.S.C. 8814) is
12	amended by striking "and Federal laboratories"
13	and inserting "Federal laboratories, and de-
14	fense researchers".
15	(B) Integration.—Such section is
16	amended—
17	(i) by redesignating subsections (e)
18	through (g) as subsection (f) through (h),
19	respectively; and
20	(ii) by inserting after subsection (d)
21	the following new subsection (e):
22	"(e) Integration of Department of Defense.—
23	The Committee shall take such actions as may be nec-
24	essary, including by modifying policies and procedures of
25	the Committee, to ensure the full integration of the De-

1	partment of Defense in activities and programs of the
2	Committee.".
3	(4) Clarification of purpose of multi-
4	DISCIPLINARY CENTERS FOR QUANTUM RESEARCH
5	AND EDUCATION.—Section 302(c) of the National
6	Quantum Initiative Act (Public Law 115–368; 15
7	U.S.C. 8842(e)) is amended—
8	(A) in paragraph (2), by striking "; and"
9	and inserting a semicolon;
10	(B) in paragraph (3), by striking the pe-
11	riod at the end and inserting "; and"; and
12	(C) by adding at the end the following new
13	paragraph:
14	"(4) encouraging workforce collaboration, both
15	with private industry and among Federal entities,
16	including national defense agencies.".
17	(5) Clarifications regarding national
18	QUANTUM INFORMATION SCIENCE RESEARCH CEN-
19	TERS.—
20	(A) REQUIREMENTS.—Subsection (c) of
21	section 402 of the National Quantum Initiative
22	Act (Public Law 115–368; 15 U.S.C. 8852) is
23	amended by inserting "the national defense
24	agencies," after "industry,".

1	(B) Coordination.—Subsection (d) of
2	such section is amended—
3	(i) by redesignating paragraphs (2)
4	and (3) as paragraphs (3) and (4), respec-
5	tively; and
6	(ii) by inserting after paragraph (1)
7	the following new paragraph (2):
8	"(2) other research entities of the Federal Gov-
9	ernment, including research entities in the Depart-
10	ment of Defense;".
11	(6) NATIONAL QUANTUM COORDINATION OF-
12	FICE.—
13	(A) Collaboration when reporting to
14	CONGRESS.—Section 102 of the National Quan-
15	tum Initiative Act (Public Law 115–368; 15
16	U.S.C. 8812) is amended—
17	(i) by redesignating subsection (c) as
18	subsection (d); and
19	(ii) by inserting after subsection (b)
20	the following new subsection (c):
21	"(c) Collaboration When Reporting to Con-
22	GRESS.—The Coordination Office shall ensure that when
23	participants in the National Quantum Initiative Program
24	prepare and submit reports to Congress that they do so

1	in collaboration with each other and all appropriate Fed-
2	eral civilian, defense, and intelligence research entities."
3	(B) Adjustments.—The National Quan-
4	tum Coordination Office may make such addi-
5	tional adjustments as it deems necessary to en-
6	sure full integration of the Department of De-
7	fense into the National Quantum Initiative Pro-
8	gram.
9	(7) Reporting to additional committees
10	OF CONGRESS.—Paragraph (2) of section 2 of such
11	Act (15 U.S.C. 8801) is amended to read as follows
12	"(2) Appropriate committees of con-
13	GRESS.—The term 'appropriate committees of Con-
14	gress' means—
15	"(A) the Committee on Commerce
16	Science, and Transportation, the Committee or
17	Armed Services, and the Select Committee or
18	Intelligence of the Senate; and
19	"(B) the Committee on Energy and Com-
20	merce, the Committee on Science, Space, and
21	Technology, the Committee on Armed Services
22	and the Permanent Select Committee on Intel-
23	ligence of the House of Representatives.".