

119TH CONGRESS
1ST SESSION

S. 1343

To improve coordination between the Department of Energy and the National Science Foundation on activities carried out under the National Quantum Initiative Program, and for other purposes.

IN THE SENATE OF THE UNITED STATES

APRIL 8, 2025

Mrs. BLACKBURN (for herself and Mr. PETERS) introduced the following bill;
which was read twice and referred to the Committee on Commerce,
Science, and Transportation

A BILL

To improve coordination between the Department of Energy
and the National Science Foundation on activities carried
out under the National Quantum Initiative Program,
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 “Advancing Quantum
5 Manufacturing Act of 2025”.

1 **SEC. 2. COORDINATION BETWEEN DEPARTMENT OF EN-**
2 **ERGY AND NATIONAL SCIENCE FOUNDATION**
3 **ON ACTIVITIES UNDER NATIONAL QUANTUM**
4 **INITIATIVE.**

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

7 (1) by redesignating subsection (c) as sub-
8 section (d); and

9 (2) by inserting after subsection (b) the fol-
10 lowing:

11 “(c) LIAISON BETWEEN DEPARTMENT OF ENERGY
12 AND NATIONAL SCIENCE FOUNDATION.—The Director of
13 the Coordination Office shall appoint a member of the
14 staff of the Coordination Office to serve as a liaison be-
15 tween the Department of Energy and the National Science
16 Foundation to ensure the coordination, and avoid unneces-
17 sary duplication, of the Department and the Foundation
18 activities under the Program.”.

19 (b) SENSE OF CONGRESS.—It is the sense of Con-
20 gress that activities and research carried out by the De-
21 partment of Energy and the National Science Foundation
22 should include, to the extent practicable, all quantum in-
23 formation science technologies, as well as critical quan-
24 tum-enabling technologies, including—

25 (1) gate-based quantum computing;

26 (2) annealing-based quantum computing;

1 (3) quantum bit (qubit) technologies, including
2 those based on—

3 (A) topological materials;

4 (B) photons;

5 (C) trapped ions;

6 (D) neutral atoms;

7 (E) silicon;

8 (F) superconducting devices; and

9 (G) any other viable quantum technology;

10 and

11 (4) quantum-enabling technologies, including—

12 (A) single photon sources;

13 (B) lasers;

14 (C) radio frequency, microwave, and other
15 electronics;

16 (D) electron spin;

17 (E) cryogenic technologies;

18 (F) low-disorder or low-defect materials de-
19 velopment and fabrication; and

20 (G) any other critical enabling technology.

21 **SEC. 3. ESTABLISHMENT OF MANUFACTURING USA INSTI-**
22 **TUTE FOR QUANTUM MANUFACTURING.**

23 (a) DEFINITION OF MANUFACTURING USA INSTI-
24 TUTE.—In this section, the term “Manufacturing USA in-
25 stitute” has the meaning given such term in section 34(d)

1 of the National Institute of Standards and Technology Act
2 (15 U.S.C. 278s(d)).

3 (b) ESTABLISHMENT OF MANUFACTURING USA IN-
4 STITUTE.—The Secretary of Commerce, acting through
5 the Director of the National Institute of Standards and
6 Technology, and in consultation with the Secretary of En-
7 ergy, shall—

8 (1) determine the manufacturing capabilities
9 necessary to produce reliable quantum components
10 and systems at scale and the gaps in access to such
11 capabilities; and

12 (2) establish, or award financial assistance,
13 under section 34(e)(1) of the National Institute of
14 Standards and Technology Act (15 U.S.C.
15 278s(e)(1)) to plan, establish, or support, a Manu-
16 facturing USA institute that—

17 (A) provides an end-to-end manufacturing
18 ecosystem addressing quantum computing,
19 quantum sensing, and quantum communication;

20 (B) includes within the end-to-end eco-
21 system provided pursuant to paragraph (1) the
22 capability to design, fabricate, and test mate-
23 rials, devices, structures, and manufacturing
24 processes for quantum technologies or systems,
25 as well as the capacity to develop and create

jobs for a coordinated advanced manufacturing
and quantum engineering workforce;

(C) provides access to prototyping, both at
research scale and commercial scale, for re-
searchers and developers working on quantum
component technologies and systems and manu-
facturing process innovations to facilitate the
transition into scalable, cost-effective, and high-
performing manufacturing capabilities;

(D) supports the development of a resilient
quantum supply chain with an emphasis on key
components and supply from allies of the
United States, that enables quantum tech-
nologies, and increases the domestic production
of goods critical to national security and eco-
nomic competitiveness; and

(E) supports development of a workforce
with skills relevant to manufacture of quantum
components and systems.

**SEC. 4. STUDIES RELATING TO NATIONAL QUANTUM INI-
TIATIVE PROGRAM.**

(a) INDEPENDENT STUDY ON PROGRESS MADE BY
NATIONAL QUANTUM INITIATIVE PROGRAM.—

(1) AGREEMENT.—The Director of the Office of
Science and Technology Policy shall seek to enter

1 into an agreement with the National Academies of
2 Sciences, Engineering, and Medicine (in this sub-
3 section the “National Academies”) to perform the
4 services covered by this section.

5 (2) INDEPENDENT STUDY.—Under an agree-
6 ment between the Director and the National Acad-
7 emies under this subsection, the National Academies
8 shall carry out an independent study to assess the
9 progress made by the National Quantum Initiative
10 Program in achieving the purposes set forth under
11 section 3 of the National Quantum Initiative Act (15
12 U.S.C. 8802) and the goals of the Program, includ-
13 ing with respect to sensing, communications, com-
14 puting, and workforce development for near-term de-
15 velopment and quantum applications.

16 (b) STUDY ON IMPEDIMENTS TO COLLABORATION
17 UNDER NATIONAL QUANTUM INITIATIVE PROGRAM.—

18 (1) STUDY AND REPORT.—Not later than 180
19 days after the date of the enactment of this Act, the
20 consortium convened by the Director of the National
21 Institute of Standards and Technology pursuant to
22 section 201(b)(1) of the National Quantum Initiative
23 Act (15 U.S.C. 8831(b)(1)) shall—

24 (A) conduct a study—

1 (i) on the impediments to collabora-
2 tion under the National Quantum Initia-
3 tive Program implemented pursuant to sec-
4 tion 101(a) of such Act (15 U.S.C.
5 8811(a)) between Multidisciplinary Centers
6 for Quantum Research and Education es-
7 tablished under section 302(a) of such Act
8 (15 U.S.C. 8842(a)), National Quantum
9 Information Science Research Centers es-
10 tablished and operated pursuant to section
11 402(a)(1) of such Act (15 U.S.C.
12 8852(a)(1)), industry, and academia; and

13 (ii) to develop recommendations for
14 legislative action to eliminate or mitigate
15 such impediments; and

16 (B) submit to the Committee on Com-
17 merce, Science, and Transportation of the Sen-
18 ate and the Committee on Science, Space, and
19 Technology of the House of Representatives a
20 report on the findings of the consortium with
21 respect to the study conducted pursuant to
22 paragraph (1).

23 (2) CONTENTS.—The report submitted under
24 paragraph (1)(B) shall include the following:

1 (A) An overview of the current state of re-
2 search being conducted under the National
3 Quantum Initiative Program.

4 (B) A breakdown of the funding under the
5 Program for near-term quantum applications
6 development, disaggregated by different quan-
7 tum technologies, including computing (anneal-
8 ing and gate-model with the different types of
9 qubit technologies), sensing, communication,
10 and networking.

11 (C) Identification of potential risks in the
12 research funded under the Program.

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