

118TH CONGRESS  
1ST SESSION

# S. 1439

To amend the National Quantum Initiative Act to establish a public-private partnership for near-term quantum application development and acceleration, and for other purposes.

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## IN THE SENATE OF THE UNITED STATES

MAY 4, 2023

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

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## A BILL

To amend the National Quantum Initiative Act to establish a public-private partnership for near-term quantum application development and acceleration, 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 Sandbox for  
5       Near-Term Applications Act of 2023”.

6       **SEC. 2. FINDINGS.**

7       Congress finds as follows:

1           (1) The National Quantum Initiative and its  
2 ongoing activities explore and promote Quantum In-  
3 formation Science.

4           (2) Continual innovation by the quantum indus-  
5 try of the United States is critically important.

6           (3) Quantum and quantum-hybrid applications  
7 have the ability to provide innovative solutions for  
8 near-term use cases across a variety of public and  
9 private sector challenges.

10          (4) Many quantum computers are available via  
11 the cloud and through a dedicated near-term quan-  
12 tum application acceleration program that is inclu-  
13 sive of the wide variety of quantum computing tech-  
14 nologies will break down barriers to access quantum  
15 computing hardware systems.

16          (5) Business and consumers of the United  
17 States will be able to see benefits of the innovation  
18 through a program focusing on near-term use of the  
19 technology.

20          (6) Quantum information science is a  
21 foundational technology that is transforming the  
22 economy of the 21st century.

23          (7) Robust leadership in quantum research and  
24 near-term development will have a great impact on  
25 the economic security of the United States.

1           (8) Unrivaled excellence in workforce develop-  
 2           ment is key in developing next generation leaders in  
 3           quantum applications.

4 **SEC. 3. PUBLIC-PRIVATE PARTNERSHIP FOR QUANTUM AP-**  
 5 **PLICATION DEVELOPMENT ACCELERATION.**

6           (a) IN GENERAL.—Title IV of the National Quantum  
 7 Initiative Act (15 U.S.C. 8851 et seq.) is amended by add-  
 8 ing at the end the following:

9 **“SEC. 405. PUBLIC-PRIVATE PARTNERSHIP FOR QUANTUM**  
 10 **APPLICATION DEVELOPMENT ACCELERA-**  
 11 **TION.**

12           “(a) DEFINITIONS.—In this section:

13           “(1) QUANTUM APPLICATIONS.—The term  
 14 ‘quantum applications’ means algorithms and appli-  
 15 cations which use quantum mechanics through quan-  
 16 tum processing units. These applications include  
 17 quantum computing, quantum communication, quan-  
 18 tum sensing, and quantum-hybrid applications which  
 19 are applications that use both quantum computing  
 20 and classical computing hardware systems.

21           “(2) QUANTUM SANDBOX.—The term ‘quantum  
 22 sandbox’ means a program—

23           “(A) for innovation and development of ap-  
 24 plications using quantum information sciences  
 25 with a focus on near-term use cases; and

1           “(B) that can be used to develop and test  
2           demonstrations, proofs of concepts, and pilot  
3           applications.

4           “(3) NEAR-TERM USE CASE.—The term ‘near-  
5           term use case’ means an application that can be de-  
6           veloped and deployed in less than 24 months.

7           “(b) ESTABLISHMENT OF QUANTUM SANDBOX RE-  
8           QUIRED.—The Secretary of Commerce shall, in coordina-  
9           tion with the Director of the National Institute of Stand-  
10          ards and Technology, establish a quantum sandbox  
11          through the establishment of a public-private partnership  
12          focused on quantum application development acceleration  
13          for quantum application near-term use cases.

14          “(c) ENGAGEMENT.—As part of the Program and in  
15          carrying out subsection (b), the Secretary shall, acting  
16          through the Director of the National Institute of Stand-  
17          ards and Technology, engage with the Quantum Economic  
18          Development Consortium, the National Laboratories (as  
19          defined in section 2 of the Energy Policy Act of 2005 (42  
20          U.S.C. 15801)), federally funded research and develop-  
21          ment centers, and other members of the United States  
22          quantum computing and quantum information eco-  
23          system.”.

1           (b) CLERICAL AMENDMENT.—The table of contents  
2 in section 1(b) of such Act is amended by adding after  
3 the item relating to section 404 the following new item:

“Sec. 405. Public-private partnership for quantum application development ac-  
celeration.”.

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