

119TH CONGRESS  
2D SESSION

**S.**

---

To authorize the Director of the National Science Foundation to identify grand challenges and award competitive prizes for artificial intelligence research and development.

---

IN THE SENATE OF THE UNITED STATES

---

Mr. BOOKER (for himself, Mr. ROUNDS, and Mr. HEINRICH) introduced the following bill; which was read twice and referred to the Committee on

---

---

**A BILL**

To authorize the Director of the National Science Foundation to identify grand challenges and award competitive prizes for artificial intelligence research and development.

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 “AI Grand Challenges

5       Act of 2026”.

1 **SEC. 2. PRIZE COMPETITIONS FOR ARTIFICIAL INTEL-**2 **LIGENCE RESEARCH AND DEVELOPMENT.**

3 (a) **DEFINITION.**—Except as otherwise expressly pro-  
4 vided, in this section the term “Director” means the Di-  
5 rector of the National Science Foundation.

6 (b) **ESTABLISHMENT OF PROGRAM.**—

7 (1) **IN GENERAL.**—Not later than 12 months  
8 after the date of enactment of this Act, the Director,  
9 in coordination with the National Artificial Intel-  
10 ligence Advisory Committee, shall establish a pro-  
11 gram to award prizes, utilizing the authorities and  
12 processes established under section 24 of the Steven-  
13 son-Wydler Technology Innovation Act of 1980 (15  
14 U.S.C. 3719), to eligible participants as determined  
15 by the Director pursuant to subsection (e) to stimu-  
16 late artificial intelligence research, development, and  
17 commercialization that solves or advances specific,  
18 well-defined, and measurable grand challenges in 1  
19 or more of the following categories:

20 (A) National security.

21 (B) Cybersecurity.

22 (C) Health.

23 (D) Energy.

24 (E) Environment.

25 (F) Transportation.

26 (G) Agriculture and rural development.

1 (H) Education and workforce training.

2 (I) Manufacturing.

3 (J) Space and aerospace.

4 (K) Quantum computing, including molec-

5 ular modeling and simulation.

6 (L) Materials science.

7 (M) Supply chain resilience.

8 (N) Disaster preparedness.

9 (O) Natural resources management.

10 (P) Cross-cutting challenges in artificial

11 intelligence, including robustness,

12 interpretability, explainability, transparency,

13 safety, privacy, content provenance, and bias

14 mitigation.

15 (2) DESIGNATION.—The grand challenges and

16 prize competition program established under para-

17 graph (1) shall be known as the “AI Grand Chal-

18 lenges Program”.

19 (3) ROTATORS.—Participants in the Rotator

20 Program of the National Science Foundation may

21 support the development and implementation of the

22 AI Grand Challenges Program.

23 (c) GRAND CHALLENGES SELECTION AND GRAND

24 CHALLENGES INFORMATION.—

25 (1) IN GENERAL.—

1 (A) CONSULTATION ON IDENTIFICATION  
2 AND SELECTION.—The Director shall consult  
3 with the Director of the Office of Science and  
4 Technology Policy, and may consult with the  
5 Director of the National Institute of Standards  
6 and Technology, the Director of the Defense  
7 Advanced Research Projects Agency, the heads  
8 of relevant Federal agencies, and the National  
9 Artificial Intelligence Advisory Committee, to  
10 identify and select artificial intelligence research  
11 and development grand challenges in which eli-  
12 gible participants will compete to solve or ad-  
13 vance for prize awards under subsection (b).

14 (B) PUBLIC INPUT ON IDENTIFICATION.—  
15 The Director shall also seek public input on the  
16 identification of artificial intelligence research  
17 and development grand challenges.

18 (2) PROBLEM STATEMENTS; SUCCESS  
19 METRICS.—For each grand challenge selected under  
20 paragraph (1) and the grand challenge under para-  
21 graph (3), the Director shall—

22 (A) establish a specific and well-defined  
23 grand challenge problem statement and ensure  
24 that such problem statement is published on the  
25 National Science Foundation website linking

1 out to relevant prize competition listings on the  
2 website Challenge.gov that is managed by the  
3 General Services Administration; and

4 (B) establish and publish on the website  
5 Challenge.gov clear targets, the challenge proc-  
6 ess (which may include a multi-stage process),  
7 success metrics, and validation protocols for the  
8 prize competitions designed to address each  
9 grand challenge, in order to provide specific  
10 benchmarks that will be used to evaluate sub-  
11 missions to the prize competition.

12 (3) GRAND CHALLENGE FOR ARTIFICIAL INTEL-  
13 LIGENCE-ENABLED CANCER BREAKTHROUGHS.—

14 (A) REQUIRED PRIZE COMPETITION.—Not  
15 later than 1 year after the date of enactment of  
16 this Act, the Director, in consultation with the  
17 Director of the Office of Science and Tech-  
18 nology Policy and the Director of the National  
19 Institutes of Health, shall establish not less  
20 than 1 grand challenge in which eligible partici-  
21 pants will compete in a prize competition to  
22 solve or advance solutions for prize awards  
23 under subsection (b) that seek to advance med-  
24 ical breakthroughs to address 1 or more of the  
25 most lethal forms of cancer and related

1 comorbidities. The grand challenge shall relate  
2 to detection, diagnostics, treatments, therapeu-  
3 tics, or other innovations in artificial intel-  
4 ligence to increase the total quality-adjusted life  
5 years of those affected or likely to be affected  
6 by cancer.

7 (B) PRIZE AMOUNT.—In carrying out the  
8 prize competition under subparagraph (A), the  
9 Director shall award not less than \$10,000,000  
10 in cash prize awards to each winner.

11 (4) AMBITIOUS AND ACHIEVABLE GOALS.—  
12 Grand challenges selected under paragraph (1) and  
13 the grand challenge under paragraph (3) shall be  
14 ambitious but achievable goals that utilize science,  
15 technology, and innovation to solve or advance solu-  
16 tions to problems to benefit the United States.

17 (d) ADDITIONAL CONSULTATION.—The Director may  
18 consult with, and incorporate effective practices from,  
19 other entities that have developed successful large-scale  
20 technology demonstration prize competitions, including  
21 the Defense Advanced Research Projects Agency, the Na-  
22 tional Aeronautics and Space Administration, other Fed-  
23 eral agencies, private sector enterprises, and nonprofit or-  
24 ganizations, in the development and implementation of the

1 AI Grand Challenges Program and related prize competi-  
2 tions, including on the requirements under subsection (e).

3 (e) REQUIREMENTS.—

4 (1) IN GENERAL.—The Director shall develop  
5 requirements for—

6 (A) the prize competition process, includ-  
7 ing eligibility criteria for participants, con-  
8 sistent with the requirements under paragraph  
9 (2); and

10 (B) testing, judging, and verification pro-  
11 cedures for submissions to receive a prize award  
12 under the AI Grand Challenges Program.

13 (2) ELIGIBILITY REQUIREMENT AND JUDG-  
14 ING.—

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

21 (i) that is a private entity shall be in-  
22 corporated in and maintain a primary  
23 place of business in the United States; and  
24 (ii) who is an individual, whether par-  
25 ticipating singly or in a group, shall be a

1 citizen or permanent resident of the United  
2 States.

3 (B) JUDGES.—In accordance with section  
4 24(k) of the Stevenson-Wydler Technology In-  
5 novation Act of 1980 (15 U.S.C. 3719(k)), a  
6 judge of a prize competition under the AI  
7 Grand Challenges Program may be an indi-  
8 vidual from the private sector.

9 (f) PRIZE AMOUNT.—

10 (1) IN GENERAL.—In carrying out the AI  
11 Grand Challenges Program, the Director—

16 (B) may also utilize non-cash awards.

23 (g) FUNDING.—

24 (1) IN GENERAL.—In accordance with section  
25 24(m)(1) of the Stevenson-Wydler Technology Inno-

1 vation Act of 1980 (15 U.S.C. 3719(m)(1)), the Di-  
2 rector may request and accept funds from other  
3 Federal agencies, State, United States territory,  
4 local, or Tribal government agencies, for-profit enti-  
5 ties, and nonprofit entities to support the AI Grand  
6 Challenges Program.

7 (2) PROHIBITION ON CONSIDERATION FOR SUP-  
8 PORT.—The Director may not consider any support  
9 provided by an agency or entity under paragraph (1)  
10 in determining the winners of prize awards under  
11 subsection (b).

12 (h) REPORTS.—

13 (1) NOTIFICATION OF WINNING SUBMISSION.—  
14 Not later than 60 days after the date on which a  
15 prize is awarded under the AI Grand Challenges  
16 Program, the Director shall submit to the Com-  
17 mittee on Commerce, Science, and Transportation of  
18 the Senate, the Committee on Science, Space, and  
19 Technology of the House of Representatives, and  
20 other relevant committees of Congress a report that  
21 describes the winning submission to the prize com-  
22 petition and its benefits to the United States.

23 (2) BIENNIAL REPORT.—

24 (A) IN GENERAL.—Not later than 2 years  
25 after the date of enactment of this Act, and bi-

1           ennially thereafter, the Director shall submit to  
2           the Committee on Commerce, Science, and  
3           Transportation of the Senate, the Committee on  
4           Science, Space, and Technology of the House of  
5           Representatives, and other relevant committees  
6           of Congress a report that includes—

9 (ii) a description of the active com-  
10 petitions and the results of completed com-  
11 petitions under the AI Grand Challenges  
12 Program; and

13 (iii) efforts to provide information to  
14 the public about the AI Grand Challenges  
15 Program to encourage participation.

16 (B) PUBLIC ACCESSIBILITY.—The Director  
17 shall make the biennial report required under  
18 subparagraph (A) publicly accessible, including  
19 by posting the biennial report on the website of  
20 the National Science Foundation in an easily  
21 accessible location.

22 (i) ACCESSIBILITY.—In carrying out the AI Grand  
23 Challenges Program, the Director shall post the active  
24 prize competitions and available prize awards under sub-  
25 section (b) to Challenge.gov after the grand challenges are

1 selected and the prize competitions are designed pursuant  
2 to subsections (c) and (e) to ensure the prize competitions  
3 are widely accessible to eligible participants.

4 **SEC. 3. COORDINATION ON FEDERAL PUBLICATION OF**  
5 **GRAND CHALLENGE DATA SETS.**

6 The Director of the Office of Science and Technology  
7 Policy shall coordinate Federal agencies that fund science  
8 to identify and publish data sets for grand challenges  
9 that—

10 (1) address foundational scientific problems  
11 that if addressed would significantly advance sci-  
12 entific understanding; and

13 (2) can be addressed through innovation from  
14 the use of artificial intelligence.