

119TH CONGRESS
2D SESSION

H. R. 9506

To amend the National Artificial Intelligence Initiative Act of 2020 to require the Director of the Office of Science and Technology Policy to establish a prize competition program relating to artificial intelligence, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

JUNE 29, 2026

Mr. BEGICH (for himself and Mr. OBERNOLTE) introduced the following bill;
which was referred to the Committee on Science, Space, and Technology

A BILL

To amend the National Artificial Intelligence Initiative Act of 2020 to require the Director of the Office of Science and Technology Policy to establish a prize competition program relating to artificial intelligence, 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. FEDERAL GRAND CHALLENGES IN ARTIFICIAL**
4 **INTELLIGENCE.**

5 (a) IN GENERAL.—

6 (1) NATIONAL ARTIFICIAL INTELLIGENCE INI-
7 TIATIVE.—Title LI of the National Artificial Intel-

1 ligence Initiative Act of 2020 (15 U.S.C. 9411 et
2 seq.) is amended by adding at the end the following
3 new section:

4 **“SEC. 5107. FEDERAL GRAND CHALLENGES IN ARTIFICIAL**
5 **INTELLIGENCE.**

6 “(a) IN GENERAL.—Not later than one year after the
7 date of the enactment of this section, the Director of the
8 Office of Science and Technology Policy (in this section
9 referred to as the ‘Director’), acting through the National
10 Science and Technology Council and the Interagency Com-
11 mittee, shall establish a prize competition program pursu-
12 ant to section 24 of the Stevenson-Wydler Technology In-
13 novation Act of 1980 (15 U.S.C. 3719), for the following
14 purposes:

15 “(1) Expediting the development of artificial in-
16 telligence systems in the United States.

17 “(2) Stimulating artificial intelligence research,
18 development, and commercialization that solves or
19 advances specific, well-defined, and measurable chal-
20 lenges in at least one of the priorities in the list
21 under subsection (b).

22 “(b) LIST OF PRIORITIES.—

23 “(1) IN GENERAL.—The Director, in consulta-
24 tion with industry, civil society, and academia, shall
25 establish, and annually review and update as the Di-

1 rector considers appropriate, a list of priorities con-
2 sistent with the purposes under subsection (a), for
3 the program under such subsection.

4 “(2) CONTENTS.—The list under paragraph (1)
5 may include the following priorities:

6 “(A) To overcome challenges with the engi-
7 neering of and applied research on microelec-
8 tronics, including through the integration of ar-
9 tificial intelligence with emerging technologies,
10 such as neuromorphic and quantum computing,
11 or with respect to physical limits on transistors,
12 advanced interconnects, and memory elements.

13 “(B) To promote transformational or long-
14 term advancements in computing and artificial
15 intelligence technologies through any of the fol-
16 lowing:

17 “(i) Next-generation algorithm design.

18 “(ii) Next-generation compute capa-
19 bility.

20 “(iii) Generative and adaptive artifi-
21 cial intelligence for design applications.

22 “(iv) Photonics-based microprocessors
23 and optical communication networks, in-
24 cluding electrophotonics.

1 “(v) The chemistry and physics of
2 new materials.

3 “(vi) Biotechnology, such as modeling
4 a single cell.

5 “(vii) Energy utilization or energy ef-
6 ficiency.

7 “(viii) Techniques to establish cryp-
8 tographically secure content provenance in-
9 formation.

10 “(ix) Safety and controls for artificial
11 intelligence applications.

12 “(C) To promote explainability and mecha-
13 nistic interpretability of artificial intelligence
14 systems.

15 “(D) To advance fundamental under-
16 standing of artificial intelligence, including
17 through breakthroughs in theoretical, computa-
18 tional, and experimental methods that discover
19 new and transformative paradigms that explain
20 the advanced capabilities of artificial intel-
21 ligence in domains such as the following:

22 “(i) Interpretability.

23 “(ii) Control.

24 “(iii) Steerability.

1 “(iv) Robustness against foreign ad-
2 versaries.

3 “(E) To develop artificial intelligence solu-
4 tions, including through integration among
5 emerging technologies, such as neuromorphic
6 and quantum computing, to overcome barriers
7 to innovations in advanced manufacturing in
8 the United States, including in areas such as
9 the following:

10 “(i) Materials, nanomaterials, and
11 composites.

12 “(ii) Rapid, complex design.

13 “(iii) Sustainability and environmental
14 impact of manufacturing operations.

15 “(iv) Predictive maintenance of ma-
16 chinery.

17 “(v) Improved part quality.

18 “(vi) Process inspections.

19 “(vii) Worker safety.

20 “(viii) Robotics.

21 “(F) To develop artificial intelligence solu-
22 tions in sectors of the economy, such as expand-
23 ing the utilization of artificial intelligence in
24 maritime vessels, including in navigation and in
25 the design of propulsion systems and fuels.

1 “(G) To develop artificial intelligence solu-
2 tions to improve border security, including solu-
3 tions relevant to the detection of fentanyl, illicit
4 contraband, and illegal activities.

5 “(H) To develop artificial intelligence for
6 science applications.

7 “(I) To develop cybersecurity for artificial
8 intelligence-related intellectual property, such as
9 artificial intelligence systems and artificial intel-
10 ligence algorithms for robustness, resilience,
11 and security against foreign adversaries.

12 “(J) To develop artificial intelligence solu-
13 tions to modernize code and software systems
14 that are deployed in the Federal Government
15 and critical infrastructure and are at risk of
16 maintenance difficulty due to code obsolescence
17 or challenges finding expertise in outdated code
18 bases.

19 “(K) To develop solutions to reduce energy
20 consumption in developing, deploying, and
21 maintaining data-efficient and high-perform-
22 ance artificial intelligence models.

23 “(L) To develop methods to prevent mis-
24 use of artificial intelligence systems for mali-
25 cious purposes.

1 “(M) To find applications for artificial in-
2 telligence in wireless communications systems,
3 including cellular networks.

4 “(N) To advance the capabilities of artifi-
5 cial intelligence, robotics, and automation for
6 physical laboratory infrastructure and cloud
7 laboratories.

8 “(3) PROBLEM STATEMENTS; SUCCESS
9 METRICS.—For each priority in the list under para-
10 graph (1) for which there will be a prize competition
11 through the program under subsection (a), the Di-
12 rector shall publish on Challenge.gov or a successor
13 website information relating to the following:

14 “(A) A specific and well-defined problem
15 statement.

16 “(B) Targets, success metrics, validation
17 protocols, and other benchmarks that will be
18 utilized to evaluate submissions to such prize
19 competition.

20 “(C) Each award for such prize competi-
21 tion.

22 “(4) CONSULTATION ON IDENTIFICATION AND
23 SELECTION OF GRAND CHALLENGES.—The Director,
24 the Director of the National Institute of Standards
25 and Technology, the Director of the Defense Ad-

1 vanced Research Projects Agency, and such other
2 agency heads as the Director considers relevant,
3 shall each identify and select artificial intelligence
4 research and development grand challenges in which
5 eligible participants will compete to solve or advance
6 for prize awards under subsection (a).

7 “(c) FEDERAL INVESTMENT INITIATIVES AUTHOR-
8 IZED.—

9 “(1) IN GENERAL.—The Secretary of Com-
10 merce, the Secretary of Transportation, and the Di-
11 rector of the National Science Foundation may each
12 establish, consistent with the missions or responsibil-
13 ities of the Department of Commerce, the Depart-
14 ment of Transportation, or the Foundation, respec-
15 tively, a program to carry out challenge-based acqui-
16 sitions and other research and development invest-
17 ment initiatives the Secretary of Commerce, the Sec-
18 retary of Transportation, or the Director of the Na-
19 tional Science Foundation, as the case may be, de-
20 termines consistent with the list under subsection
21 (b).

22 “(2) REQUIREMENTS.—Each agency head car-
23 rying out an investment initiative under paragraph
24 (1) shall ensure the following:

1 “(A) With respect to each such initiative,
2 there is, or will be, the following:

3 “(i) A positive impact on the economic
4 competitiveness of the United States.

5 “(ii) A benefit to United States indus-
6 try.

7 “(iii) In developing such initiative, the
8 resources and expertise of any industry
9 and philanthropic partners to such initia-
10 tive are leveraged to the extent practicable.

11 “(iv) Utilization of advanced manufac-
12 turing in the United States, if applicable.

13 “(B) All research conducted for such ini-
14 tiative is conducted in the United States.

15 “(3) ACCESSIBILITY.—In carrying out an in-
16 vestment initiative under paragraph (1), the head of
17 the agency at issue shall publish on Challenge.gov or
18 a successor website information relating to the fol-
19 lowing, as applicable:

20 “(A) A specific and well-defined problem
21 statement for such initiative.

22 “(B) Targets, success metrics, validation
23 protocols, and other benchmarks that will be
24 utilized to evaluate submissions to such initia-
25 tive.

1 “(C) Each award for such initiative.

2 “(d) REPORTS.—

3 “(1) NOTIFICATION OF WINNING SUBMIS-
4 SION.—Not later than 60 days after the date on
5 which the head of an agency makes an award
6 through a program under this section, such head
7 shall provide to the Committee on Commerce,
8 Science, and Transportation of the Senate, the Com-
9 mittee on Science, Space, and Technology of the
10 House of Representatives, and such other commit-
11 tees of Congress as such head considers relevant a
12 report on the winning submission for which such
13 award was made and the benefits to the United
14 States associated with such submission.

15 “(2) BIENNIAL REPORT.—Not later than two
16 years after the date of the enactment of this section
17 and biennially thereafter, each head of an agency for
18 which there is a program under this section shall
19 carry out the following:

20 “(A) Submit to the committees referred to
21 in paragraph (1) a report that includes the fol-
22 lowing for the biennial period covered by such
23 report:

24 “(i) A description of the activities car-
25 ried out by such head under this section.

1 “(ii) A description of such program,
2 including the results of such program.

3 “(iii) Information relating to the ef-
4 forts by such head to provide information
5 to the public and encourage participation
6 with respect to such program.

7 “(B) Make such report publicly available,
8 including by publishing such report on a
9 website, such as the GovInfo website of the
10 Government Publishing Office, in an easily ac-
11 cessible location.

12 “(e) SUNSET.—Each program under this section
13 shall terminate on the date that is five years after the date
14 of the enactment of this section.

15 “(f) DEFINITIONS.—In this section:

16 “(1) AGENCY.—The term ‘agency’ has the
17 meaning given the term ‘Executive agency’ in section
18 403 of title 5, United States Code.

19 “(2) CRITICAL INFRASTRUCTURE.—The term
20 ‘critical infrastructure’ has the meaning given such
21 term in section 1016 of the USA PATRIOT ACT
22 (42 U.S.C. 5195c).”.

23 “(2) CLERICAL AMENDMENTS.—The table of
24 contents in section 2(b) of the National Defense Au-
25 thorization Act for Fiscal Year 2021 and the table

1 of contents at the beginning of title LI of such Act
2 are amended by inserting after the items relating to
3 section 5106 the following new item:

“Sec. 5107. Federal grand challenges in artificial intelligence.”.

4 (b) STUDIES.—

5 (1) INITIAL STUDY.—

6 (A) IN GENERAL.—Not later than one year
7 after the date of enactment of this Act, the
8 Comptroller General of the United States shall
9 conduct a study of the following:

10 (i) Ongoing prize competition pro-
11 grams carried out under authorities en-
12 acted before the date of the enactment of
13 this Act.

14 (ii) Prize competitions, generally.

15 (B) ELEMENTS.—The study conducted
16 under subparagraph (A) shall include, to the
17 extent practicable, the following:

18 (i) An identification of the following:

19 (I) Best practices for prize com-
20 petitions.

21 (II) The metrics the Comptroller
22 General of the United States deter-
23 mines appropriate for evaluating the
24 success of a prize competition.

25 (ii) An assessment of the following:

1 (I) Whether such metrics differ
2 between evaluating near-term and
3 long-term impacts of prize competi-
4 tions.

5 (II) Whether prize competitions
6 can be designed in a way that would
7 result in more effective or revolu-
8 tionary technology being developed.

9 (iii) An assessment of the efficacy and
10 effect of the programs referred to in sub-
11 paragraph (A)(i), including with respect to
12 the following:

13 (I) Whether, and what, tech-
14 nology or innovation would have been
15 developed in the absence of such pro-
16 grams.

17 (II) Whether such programs have
18 shortened the timeframe for the devel-
19 opment of technology or innovation.

20 (III) Whether such programs are
21 cost effective.

22 (IV) What benefits, if any, are
23 gained from carrying out such pro-
24 grams.

1 (V) Whether the utilization of a
2 grant program or contract would have
3 resulted in such development.

4 (C) REPORT AND BRIEFING.—Not later
5 than 18 months after the date of the enactment
6 of this Act, the Comptroller General of the
7 United States shall provide to the Committee
8 on Commerce, Science, and Transportation and
9 the Committee on Energy and Natural Re-
10 sources of the Senate and the Committee on
11 Science, Space, and Technology and the Com-
12 mittee on Energy and Commerce of the House
13 of Representatives the following:

14 (i) A report on the findings of the
15 Comptroller General with respect to the
16 study conducted under subparagraph (A).

17 (ii) A briefing on such report.

18 (2) INTERIM STUDY.—

19 (A) IN GENERAL.—Not later than three
20 years after the date of enactment of this Act,
21 the Comptroller General of the United States
22 shall conduct a study of each prize challenge
23 program under section 5107 of the National
24 Artificial Intelligence Initiative Act of 2020, as
25 added by subsection (a).

1 (B) ELEMENTS.—The study conducted
2 under subparagraph (A) shall include, to the
3 extent practicable, the following:

4 (i) An assessment of the efficacy and
5 effect of the set of programs referred to in
6 subparagraph (A), including with respect
7 to the following:

8 (I) Whether, and what, tech-
9 nology or innovation would have been
10 developed in the absence of such pro-
11 grams.

12 (II) Whether such programs have
13 shortened the timeframe for the devel-
14 opment of technology or innovation.

15 (III) Whether such programs are
16 cost effective.

17 (IV) What benefits, if any, are
18 gained from carrying out such pro-
19 grams.

20 (V) Whether the utilization of a
21 grant program or contract would have
22 resulted in such development.

23 (ii) A comparison of such efficacy and
24 effect with the efficacy and effect of the

1 programs referred to in paragraph
2 (1)(A)(i).

3 (C) REPORT AND BRIEFING.—Not later
4 than 42 months after the date of the enactment
5 of this Act, the Comptroller General of the
6 United States shall provide to the Committee
7 on Commerce, Science, and Transportation and
8 the Committee on Energy and Natural Re-
9 sources of the Senate and the Committee on
10 Science, Space, and Technology and the Com-
11 mittee on Energy and Commerce of the House
12 of Representatives the following:

13 (i) A report on the findings of the
14 Comptroller General with respect to the
15 study conducted under subparagraph (A).

16 (ii) A briefing on such report.

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