

115TH CONGRESS  
1ST SESSION

**S.** \_\_\_\_\_

To require the Secretary of Commerce to establish the Federal Advisory Committee on the Development and Implementation of Artificial Intelligence, and for other purposes.

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IN THE SENATE OF THE UNITED STATES

Ms. CANTWELL (for herself, Mr. YOUNG, and Mr. MARKEY) introduced the following bill; which was read twice and referred to the Committee on \_\_\_\_\_

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**A BILL**

To require the Secretary of Commerce to establish the Federal Advisory Committee on the Development and Implementation of 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. SHORT TITLE.**

4       This Act may be cited as the “Fundamentally Under-  
5       standing the Usability and Realistic Evolution of Artificial  
6       Intelligence Act of 2017” or the “FUTURE of Artificial  
7       Intelligence Act of 2017”.

1 **SEC. 2. SENSE OF CONGRESS.**

2 It is the Sense of Congress that—

3 (1) understanding and preparing for the ongoing  
4 development of artificial intelligence is critical to  
5 the economic prosperity and social stability of the  
6 United States;

7 (2) as artificial intelligence evolves, it can greatly  
8 benefit society by powering the information economy,  
9 fostering better informed decisions and helping  
10 unlock answers to questions that, as of the date of  
11 the enactment of this Act, are unanswerable;

12 (3) for the reasons set forth in paragraph (2)  
13 its beneficial to better understand artificial intel-  
14 ligence and foster the development of artificial intel-  
15 ligence in a manner that maximizes its benefit to so-  
16 ciety; and

17 (4) it is critical that the priorities of the advisory  
18 committee established under section 4(a)(1) include  
19 developing guidance or recommendations—

20 (A) to promote a climate of investment and  
21 innovation to ensure the global competitiveness  
22 of the United States;

23 (B) to optimize the development of artificial  
24 intelligence to address the potential growth,  
25 restructuring, or other changes in the United

1 States workforce that results from the develop-  
2 ment of artificial intelligence;

3 (C) to promote and support the unbiased  
4 development and application of artificial intel-  
5 ligence; and

6 (D) to protect the privacy rights of individ-  
7 uals.

8 **SEC. 3. DEFINITIONS.**

9 (a) IN GENERAL.—Except as provided in subsection  
10 (b), in this Act:

11 (1) ARTIFICIAL INTELLIGENCE.—The term “ar-  
12 tificial intelligence” includes the following:

13 (A) Any artificial systems that perform  
14 tasks under varying and unpredictable cir-  
15 cumstances, without significant human over-  
16 sight, or that can learn from their experience  
17 and improve their performance. Such systems  
18 may be developed in computer software, phys-  
19 ical hardware, or other contexts not yet con-  
20 templated. They may solve tasks requiring  
21 human-like perception, cognition, planning,  
22 learning, communication, or physical action. In  
23 general, the more human-like the system within  
24 the context of its tasks, the more it can be said  
25 to use artificial intelligence .

1           (B) Systems that think like humans, such  
2 as cognitive architectures and neural networks.

3           (C) Systems that act like humans, such as  
4 systems that can pass the Turing test or other  
5 comparable test via natural language proc-  
6 essing, knowledge representation, automated  
7 reasoning, and learning.

8           (D) A set of techniques, including machine  
9 learning, that seek to approximate some cog-  
10 nitive task.

11           (E) Systems that act rationally, such as in-  
12 telligent software agents and embodied robots  
13 that achieve goals via perception, planning, rea-  
14 soning, learning, communicating, decision-mak-  
15 ing, and acting.

16           (2) ARTIFICIAL GENERAL INTELLIGENCE.—The  
17 term “artificial general intelligence” means a no-  
18 tional future artificial intelligence system that exhib-  
19 its apparently intelligent behavior at least as ad-  
20 vanced as a person across the range of cognitive,  
21 emotional, and social behaviors.

22           (3) NARROW ARTIFICIAL INTELLIGENCE.—The  
23 term “narrow artificial intelligence” means an artifi-  
24 cial intelligence system that addresses specific appli-  
25 cation areas such as playing strategic games, lan-

1 guage translation, self-driving vehicles, and image  
2 recognition.

3 (b) MODIFICATIONS.—The Federal Advisory Com-  
4 mittee on the Development and Implementation of Artifi-  
5 cial Intelligence established under section 4(a) may revise  
6 such definitions under subsection (a) of this section as the  
7 advisory committee considers appropriate.

8 **SEC. 4. ESTABLISHMENT OF FEDERAL ADVISORY COM-**  
9 **MITTEE ON THE DEVELOPMENT AND IMPLE-**  
10 **MENTATION OF ARTIFICIAL INTELLIGENCE.**

11 (a) ESTABLISHMENT.—

12 (1) IN GENERAL.—The Secretary of Commerce  
13 shall establish a Federal advisory committee to ad-  
14 vise the Secretary on matters relating to the devel-  
15 opment of artificial intelligence.

16 (2) DESIGNATION.—The Federal advisory com-  
17 mittee established under paragraph (1) shall be  
18 known as the “Federal Advisory Committee on the  
19 Development and Implementation of Artificial Intel-  
20 ligence” (in this section the “Advisory Committee”).

21 (b) PURPOSES OF THE ADVISORY COMMITTEE.—

22 (1) ADVICE.—The Advisory Committee shall  
23 provide advice to the Secretary on matters relating  
24 to the development of artificial general intelligence

1 and narrow artificial intelligence, including on the  
2 following as they relate to artificial intelligence:

3 (A) The competitiveness of the United  
4 States, including matters relating to the pro-  
5 motion of public and private sector investment  
6 and innovation into the development of artificial  
7 intelligence.

8 (B) Workforce, including matters relating  
9 to the potential for using artificial intelligence  
10 for rapid retraining of workers, due to the pos-  
11 sible effect of technological displacement.

12 (C) Education, including matters relating  
13 to science, technology, engineering, and mathe-  
14 matics education to prepare the United States  
15 workforce as the needs of employers change.

16 (D) Ethics training and development for  
17 technologists working on artificial intelligence.

18 (E) Matters relating to open sharing of  
19 data and the open sharing of research on artifi-  
20 cial intelligence.

21 (F) International cooperation and competi-  
22 tiveness, including matters relating to the com-  
23 petitive international landscape for artificial in-  
24 telligence-related industries.

1           (G) Accountability and legal rights, includ-  
2           ing matters relating to the responsibility for  
3           any violations of laws by an artificial intel-  
4           ligence system and the compatibility of inter-  
5           national regulations.

6           (H) Matters relating to machine learning  
7           bias through core cultural and societal norms.

8           (I) Matters relating to how artificial intel-  
9           ligence can serve or enhance opportunities in  
10          rural communities.

11          (J) Government efficiency, including mat-  
12          ters relating to how to promote cost saving and  
13          streamline operations.

14          (2) STUDY.—The Advisory Committee shall  
15          study and assess the following:

16               (A) How to create a climate for public and  
17               private sector investment and innovation in ar-  
18               tificial intelligence.

19               (B) The possible benefits and effects that  
20               the development of artificial intelligence may  
21               have on the economy, workforce, and competi-  
22               tiveness of the United States.

23               (C) Whether and how networked, auto-  
24               mated, artificial intelligence applications and  
25               robotic devices will displace or create jobs and

1           how any job related gains relating to artificial  
2           intelligence can be maximized.

3           (D) How bias can be identified and elimi-  
4           nated in the development of artificial intel-  
5           ligence and in the algorithms that support  
6           them, including with respect to the following:

7                   (i) The selection and processing of  
8                   data used to train artificial intelligence.

9                   (ii) Diversity in the development of  
10                  artificial intelligence.

11                  (iii) The ways and places the systems  
12                  are deployed and the potential harmful  
13                  outcomes.

14           (E) Whether and how to incorporate eth-  
15           ical standards in the development and imple-  
16           mentation of artificial intelligence.

17           (F) How the Federal Government can en-  
18           courage technological progress in implementa-  
19           tion of artificial intelligence that benefits the  
20           full spectrum of social and economic classes.

21           (G) How the privacy rights of individuals  
22           are or will be affected by technological innova-  
23           tion relating to artificial intelligence.

24           (H) Whether technological advancements  
25           in artificial intelligence have or will outpace the



1 legal and regulatory regimes implemented to  
2 protect consumers.

3 (I) How existing laws, including those con-  
4 cerning data access and privacy, should be mod-  
5 ernized to enable the potential of artificial intel-  
6 ligence.

7 (J) How the Federal Government utilizes  
8 artificial intelligence to handle large or complex  
9 data sets.

10 (K) How ongoing dialogues and consulta-  
11 tions with multi-stakeholder groups can maxi-  
12 mize the potential of artificial intelligence and  
13 further development of artificial intelligence  
14 technologies that can benefit everyone inclu-  
15 sively.

16 (L) How the development of artificial intel-  
17 ligence can affect cost savings and streamline  
18 operations in various areas of government oper-  
19 ations, including health care, cybersecurity, in-  
20 frastructure, and disaster recovery.

21 (M) Such other matters as the Advisory  
22 Committee considers appropriate.

23 (3) REPORTS AND RECOMMENDATIONS.—

24 (A) REPORT BY ADVISORY COMMITTEE.—

25 Not later than 540 days after the date of the

1 enactment of this Act, the Advisory Committee  
2 shall submit to the Secretary and to Congress  
3 a report on the findings of the Advisory Com-  
4 mittee and such recommendations as the Advi-  
5 sory Committee may have for administrative or  
6 legislative action relating to artificial intel-  
7 ligence.

8 (B) RECOMMENDATIONS OF SECRETARY.—  
9 Not later than 90 days after receiving the re-  
10 port submitted under subparagraph (A), the  
11 Secretary shall review the report and submit to  
12 Congress such recommendations as the Sec-  
13 retary may have with respect to the matters  
14 contained in the report submitted under sub-  
15 paragraph (A).

16 (c) MEMBERSHIP.—

17 (1) VOTING MEMBERS.—

18 (A) IN GENERAL.—The Advisory Com-  
19 mittee shall be composed of 19 voting members  
20 who shall be appointed by the Secretary of  
21 Commerce, with advisement from the Chair and  
22 Ranking Member of the Committee on Com-  
23 merce, Science, and Transportation of the Sen-  
24 ate and the Chair and Ranking Member of the  
25 Committee on Energy and Commerce of the

1 House of Representatives, for purposes of the  
2 Advisory Committee from among individuals  
3 with expertise in matters relating to workforce  
4 development, ethics, privacy, artificial intel-  
5 ligence, or computer science.

6 (B) REPRESENTATION.—In carrying out  
7 subparagraph (A), the Secretary shall ensure  
8 that voting members are appointed as follows:

9 (i) Five members from academic or  
10 research community.

11 (ii) Six members from private indus-  
12 try, at least one of whom shall be from a  
13 small business concern.

14 (iii) Six from civil society, at least two  
15 of whom shall be from groups that advo-  
16 cate for civil liberties or civil rights.

17 (iv) Two from labor organizations or  
18 groups.

19 (C) GEOGRAPHICAL DIVERSITY.—In car-  
20 rying out subparagraph (A), the Secretary shall  
21 ensure that the voting members of the Advisory  
22 Committee come from diverse geographical loca-  
23 tions within the United States.

24 (2) NONVOTING MEMBERS.—The Advisory  
25 Committee shall also be composed of such nonvoting

1 members as the Secretary considers appropriate, ex-  
2 cept that the Secretary shall appoint at least one  
3 such member from each of the following:

4 (A) The Department of Education.

5 (B) The Department of Justice.

6 (C) The Department of Labor.

7 (D) The Department of Transportation.

8 (E) The Federal Trade Commission.

9 (F) The National Institute of Standards  
10 and Technology.

11 (G) The National Science Foundation.

12 (H) The National Science and Technology  
13 Council.

14 (I) Such other nonvoting members as the  
15 voting members of the Advisory Committee con-  
16 sider appropriate.

17 (3) CHAIRPERSON.—The Secretary shall ap-  
18 point a chairperson for the Advisory Committee  
19 from among the members appointed under para-  
20 graph (1).

21 (d) MEETINGS.—The Advisory Committee shall  
22 meet—

23 (1) in person no less frequently than twice each  
24 year; and

1           (2) via telepresence no less frequently than once  
2           every two months.

3           (e) POWERS.—In order to carry out its duties under  
4           subsection (b), the Advisory Committee may—

5           (1) hold such hearings, sit and act at such  
6           times and places, take such testimony, and receive  
7           such evidence as the Advisory Committee considers  
8           appropriate;

9           (2) submit to Congress such recommendations  
10          as the Advisory Committee considers appropriate;

11          (3) submit to Federal agencies such rec-  
12          ommendations as the Advisory Committee considers  
13          appropriate;

14          (4) issue reports, guidelines, and memoranda;

15          (5) hold or host conferences and symposia;

16          (6) enter into cooperative agreements with  
17          third-party experts to obtain relevant advice or ex-  
18          pertise, and oversee staff;

19          (7) establish subcommittees; and

20          (8) establish rules of procedure.

21          (f) TRAVEL EXPENSES.—The members of the Advi-  
22          sory Committee shall be allowed travel expenses, including  
23          per diem in lieu of subsistence, at rates authorized for em-  
24          ployees of agencies under subchapter I of chapter 57 of  
25          title 5, United States Code, while away from their homes

1 or regular places of business in the performance of services  
2 for the Advisory Committee.

3 (g) FUNDING.—

4 (1) IN GENERAL.—Except as provided in para-  
5 graph (2), amounts to carry out this section shall be  
6 derived from amounts appropriated or otherwise  
7 made available to the Secretary of Commerce.

8 (2) DONATIONS.—

9 (A) AUTHORIZATION.—The Advisory Com-  
10 mittee may solicit and accept donations from  
11 private persons and non-Federal entities to  
12 carry out this section.

13 (B) LIMITATION.—Of the amounts ex-  
14 pended by the Advisory Committee in a fiscal  
15 year to carry out this section, not more than  
16 half may be derived from amounts received  
17 under subparagraph (A).