115TH CONGRESS
2D SESSION

H. R. 6398

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AN ACT

To authorize the Department of Energy to conduct collaborative research with the Department of Veterans Affairs in order to improve healthcare services for veterans in the United States, 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,*

SECTION 1. SHORT TITLE.

This Act may be cited as the "Department of Energy Veterans' Health Initiative Act".

SEC. 2. DEFINITIONS.

In this Act:

(1) DEPARTMENT.—The term "Department" means the Department of Energy.

(2) NATIONAL LABORATORY.—The term "National Laboratory" has the meaning given that term in section 2 of the Energy Policy Act of 2005 (42 U.S.C. 15801).

(3) SECRETARY.—The term "Secretary" means the Secretary of Energy.

SEC. 3. PURPOSES.

The purposes of this Act are to advance Department of Energy expertise in artificial intelligence and high performance computing in order to improve health outcomes for veteran populations by—

(1) supporting basic research through the application of artificial intelligence, high performance computing, modeling and simulation, machine learning, and large scale data analytics to identify and solve outcome-defined challenges in the health sciences;

(2) maximizing the impact of the Department of Veterans Affairs' health and genomics data

1 housed at the National Laboratories, as well as data

2 from other sources, on science, innovation, and

3 health care outcomes through the use and advance-

4 ment of artificial intelligence and high-performance

5 computing capabilities of the Department of Energy;

6 (3) promoting collaborative research through

7 the establishment of partnerships to improve data

8 sharing between Federal agencies, National Labora-

9 tories, institutions of higher education, and non-

10 profit institutions;

11 (4) establishing multiple scientific computing

12 user facilities to house and provision available data

13 to foster transformational outcomes; and

14 (5) driving the development of technology to im-

15 prove artificial intelligence, high performance com-

16 puting, and networking relevant to mission applica-

17 tions of the Department of Energy, including mod-

18 eling, simulation, machine learning, and advanced

19 data analytics.

20 **SEC. 4. DEPARTMENT OF ENERGY VETERANS HEALTH RE-**

21 **SEARCH AND DEVELOPMENT.**

22 (a) IN GENERAL.—The Secretary shall establish and

23 carry out a research program in artificial intelligence and

24 high performance computing, focused on the development

25 of tools to solve big data challenges associated with vet-

1 eran's healthcare, and to support the efforts of the De-
2 partment of Veterans Affairs to identify potential health
3 risks and challenges utilizing data on long term
4 healthcare, health risks, and genomic data collected from
5 veteran populations. The Secretary shall carry out this
6 program through a competitive, merit-reviewed process,
7 and consider applications from National Laboratories, in-
8 stitutions of higher education, multi-institutional collabo-
9 rations, and other appropriate entities.

10 (b) PROGRAM COMPONENTS.—In carrying out the
11 program established under subsection (a), the Secretary
12 may—

13   (1) conduct basic research in modeling and sim-
14   ulation, machine learning, large scale data analytics,
15   and predictive analysis in order to develop novel or
16   optimized algorithms for prediction of disease treat-
17   ment and recovery;

18   (2) develop methods to accommodate large data
19   sets with variable quality and scale, and to provide
20   insight and models for complex systems;

21   (3) develop new approaches and maximize the
22   use of algorithms developed through artificial intel-
23   ligence, machine learning, data analytics, natural
24   language processing, modeling and simulation, and
25   develop new algorithms suitable for high perform-

1 ance computing systems and large biomedical data
2 sets;

3   (4) advance existing and construct new data en-
4 claves capable of securely storing data sets provided
5 by the Department of Veterans Affairs, Department
6 of Defense, and other sources; and

7   (5) promote collaboration and data sharing be-
8 tween National Laboratories, research entities, and
9 user facilities of the Department by providing the
10 necessary access and secure data transfer capabili-
11 ties.

12 (c) COORDINATION.—In carrying out the program re-
13 quired under subsection (a), the Secretary is authorized
14 to—

15   (1) enter into memoranda of understanding in
16 order to carry out reimbursable agreements with the
17 Department of Veterans Affairs and other entities in
18 order to maximize the effectiveness of Department
19 of Energy research and development to improve vet-
20 erans' healthcare;

21   (2) consult with the Department of Veterans
22 Affairs and other Federal agencies as appropriate;
23 and

24   (3) ensure that data storage meets all privacy
25 and security requirements established by the Depart-

1 ment of Veterans Affairs, and that access to data is

2 provided in accordance with relevant Department of

3 Veterans Affairs data access policies, including in-

4 formed consent.

5 (d) REPORT.—Not later than two years after the date

6 of the enactment of this Act, the Secretary shall submit

7 to the Committee on Science, Space, and Technology and

8 the Committee on Veterans' Affairs of the House of Rep-

9 resentatives, and the Committee on Energy and Natural

10 Resources and the Committee on Veterans' Affairs of the

11 Senate, a report detailing the effectiveness of—

12   (1) the interagency coordination between each

13   Federal agency involved in the research program

14   carried out under this section;

15   (2) collaborative research achievements of the

16   program; and

17   (3) potential opportunities to expand the tech-

18   nical capabilities of the Department.

19 (e) FUNDING.—The Secretary of Veterans Affairs

20 shall devote $27,000,000 to carry out the activities au-

21 thorized under this section during fiscal years 2019

22 through 2023, subject to the availability of appropriations,

23 to come from amounts made available for medical and

24 prosthetic research. This section shall be carried out using

1 funds otherwise appropriated by law after the date of en-
2 actment of this Act.

SEC. 5. ARTIFICIAL INTELLIGENCE, DATA ANALYTICS, AND
4   **COMPUTATIONAL RESEARCH PILOT PRO-**
5   **GRAM.**

6   (a) IN GENERAL.—The Secretary shall carry out a
7 pilot program to develop tools for big data analytics by
8 utilizing data sets generated by Federal agencies, institu-
9 tions of higher education, nonprofit research organiza-
10 tions, and industry in order to advance artificial intel-
11 ligence technologies to solve complex, big data challenges.
12 The Secretary shall carry out this program through a com-
13 petitive, merit-reviewed process, and consider applications
14 from National Laboratories, institutions of higher edu-
15 cation, multi-institutional collaborations, and other appro-
16 priate entities.

17   (b) PROGRAM COMPONENTS.—In carrying out the
18 pilot program established under subsection (a), the Sec-
19 retary may—

20   (1) establish a cross-cutting research initiative
21   to prevent duplication and coordinate research ef-
22   forts in artificial intelligence and data analytics
23   across the Department;

24   (2) conduct basic research in modeling and sim-
25   ulation, artificial intelligence, machine learning,

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1 large scale data analytics, natural language proc-
2 essing, and predictive analysis in order to develop
3 novel or optimized predictive algorithms suitable for
4 high performance computing systems and large bio-
5 medical data sets;

6 (3) develop multivariate optimization models to
7 accommodate large data sets with variable quality
8 and scale in order to visualize complex systems;

9 (4) establish multiple scientific computing user
10 facilities to serve as data enclaves capable of se-
11 curely storing data sets created by Federal agencies,
12 institutions of higher education, nonprofit organiza-
13 tions, or industry at National Laboratories; and

14 (5) promote collaboration and data sharing be-
15 tween National Laboratories, research entities, and
16 user facilities of the Department by providing the
17 necessary access and secure data transfer capabili-
18 ties.

19 (c) REPORT.—Not later than two years after the date
20 of the enactment of this Act, the Secretary shall submit
21 to the Committee on Science, Space, and Technology of
22 the House of Representatives and the Committee on En-
23 ergy and Natural Resources of the Senate a report evalu-
24 ating the effectiveness of the pilot program under sub-
25 section (a), including basic research discoveries achieved

1 in the course of the program and potential opportunities
2 to expand the technical capabilities of the Department
3 through the development of artificial intelligence and data
4 analytics technologies.

5   (d) FUNDING.—For purposes of carrying out this
6 section, the Secretary of Energy shall devote $52,000,000
7 to carry out this section, which shall include $26,000,000
8 for each fiscal years 2019 and 2020, subject to the avail-
9 ability of appropriations. This section shall be carried out
10 using funds otherwise appropriated by law after the date
11 of enactment of this Act.

12 **SEC. 6. SPENDING LIMITATION.**

13   No additional funds are authorized to be appro-
14 priated to carry out this Act and the amendments made
15 by this Act, and this Act and such amendments shall be
16 carried out using amounts otherwise available for such
17 purpose.

    Passed the House of Representatives September 25, 2018.

    Attest:

Clerk.

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