

**Suspend the Rules and Pass the Bill, H.R. 6398, with an Amendment**

**(The amendment strikes all after the enacting clause and inserts a new text)**

115<sup>TH</sup> CONGRESS  
2<sup>D</sup> SESSION

# H. R. 6398

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.

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## IN THE HOUSE OF REPRESENTATIVES

JULY 17, 2018

Mr. NORMAN (for himself, Mr. DUNN, Mr. HIGGINS of Louisiana, Mr. SMITH of Texas, Mr. LUCAS, Mr. WEBER of Texas, Mr. KNIGHT, Mr. ROHR-ABACHER, Mr. HULTGREN, Mr. BABIN, Mrs. COMSTOCK, Mr. ABRAHAM, Mr. BIGGS, Mr. MARSHALL, and Mrs. LESKO) introduced the following bill; which was referred to the Committee on Science, Space, and Technology, and in addition to the Committee on Veterans' Affairs, for a period to be subsequently determined by the Speaker, in each case for consideration of such provisions as fall within the jurisdiction of the committee concerned

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## A BILL

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,*

1 **SECTION 1. SHORT TITLE.**

2 This Act may be cited as the “Department of Energy  
3 Veterans’ Health Initiative Act”.

4 **SEC. 2. DEFINITIONS.**

5 In this Act:

6 (1) DEPARTMENT.—The term “Department”  
7 means the Department of Energy.

8 (2) NATIONAL LABORATORY.—The term “Na-  
9 tional Laboratory” has the meaning given that term  
10 in section 2 of the Energy Policy Act of 2005 (42  
11 U.S.C. 15801).

12 (3) SECRETARY.—The term “Secretary” means  
13 the Secretary of Energy.

14 **SEC. 3. PURPOSES.**

15 The purposes of this Act are to advance Department  
16 of Energy expertise in artificial intelligence and high per-  
17 formance computing in order to improve health outcomes  
18 for veteran populations by—

19 (1) supporting basic research through the appli-  
20 cation of artificial intelligence, high performance  
21 computing, modeling and simulation, machine learn-  
22 ing, and large scale data analytics to identify and  
23 solve outcome-defined challenges in the health  
24 sciences;

25 (2) maximizing the impact of the Department  
26 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.

3 **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,

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.