



1 solve outcome-defined challenges in the health  
2 sciences;

3 (2) maximizing the impact of the Department  
4 of Veterans Affairs' health and genomics data  
5 housed at the National Laboratories, as well as data  
6 from other sources, on science, innovation, and  
7 health care outcomes through the use and advance-  
8 ment of artificial intelligence and high-performance  
9 computing capabilities of the Department of Energy;

10 (3) promoting collaborative research through  
11 the establishment of partnerships to improve data  
12 sharing between Federal agencies, National Labora-  
13 tories, institutions of higher education, and non-  
14 profit institutions;

15 (4) establishing multiple scientific computing  
16 user facilities to house and provision available data  
17 to foster transformational outcomes; and

18 (5) driving the development of technology to im-  
19 prove artificial intelligence, high-performance com-  
20 puting, and networking relevant to mission applica-  
21 tions of the Department of Energy, including mod-  
22 eling, simulation, machine learning, and advanced  
23 data analytics.

24 (c) DEPARTMENT OF ENERGY VETERANS HEALTH  
25 RESEARCH AND DEVELOPMENT.—

1           (1) IN GENERAL.—The Secretary shall establish  
2           and carry out a research program in artificial intel-  
3           ligence and high-performance computing, focused on  
4           the development of tools to solve big data challenges  
5           associated with veteran’s healthcare, and to support  
6           the efforts of the Department of Veterans Affairs to  
7           identify potential health risks and challenges uti-  
8           lizing data on long-term healthcare, health risks,  
9           and genomic data collected from veteran popu-  
10          lations. The Secretary shall carry out this program  
11          through a competitive, merit-reviewed process, and  
12          consider applications from National Laboratories, in-  
13          stitutions of higher education, multi-institutional col-  
14          laborations, and other appropriate entities.

15          (2) PROGRAM COMPONENTS.—In carrying out  
16          the program established under paragraph (1), the  
17          Secretary may—

18                 (A) conduct basic research in modeling and  
19                 simulation, machine learning, large-scale data  
20                 analytics, and predictive analysis in order to de-  
21                 velop novel or optimized algorithms for pre-  
22                 diction of disease treatment and recovery;

23                 (B) develop methods to accommodate large  
24                 data sets with variable quality and scale, and to  
25                 provide insight and models for complex systems;

1 (C) develop new approaches and maximize  
2 the use of algorithms developed through artifi-  
3 cial intelligence, machine learning, data ana-  
4 lytics, natural language processing, modeling  
5 and simulation, and develop new algorithms  
6 suitable for high-performance computing sys-  
7 tems and large biomedical data sets;

8 (D) advance existing and construct new  
9 data enclaves capable of securely storing data  
10 sets provided by the Department of Veterans  
11 Affairs, Department of Defense, and other  
12 sources; and

13 (E) promote collaboration and data shar-  
14 ing between National Laboratories, research en-  
15 tities, and user facilities of the Department by  
16 providing the necessary access and secure data  
17 transfer capabilities.

18 (3) COORDINATION.—In carrying out the pro-  
19 gram required under paragraph (1), the Secretary is  
20 authorized to—

21 (A) enter into memoranda of under-  
22 standing in order to carry out reimbursable  
23 agreements with the Department of Veterans  
24 Affairs and other entities in order to maximize  
25 the effectiveness of Department of Energy re-

1 search and development to improve veterans'  
2 healthcare;

3 (B) consult with the Department of Vet-  
4 erans Affairs and other Federal agencies as ap-  
5 propriate; and

6 (C) ensure that data storage meets all pri-  
7 vacy and security requirements established by  
8 the Department of Veterans Affairs, and that  
9 access to data is provided in accordance with  
10 relevant Department of Veterans Affairs data  
11 access policies, including informed consent.

12 (4) REPORT.—Not later than 2 years after the  
13 date of the enactment of this Act, the Secretary  
14 shall submit to the Committee on Science, Space,  
15 and Technology and the Committee on Veterans' Af-  
16 fairs of the House of Representatives, and the Com-  
17 mittee on Energy and Natural Resources and the  
18 Committee on Veterans' Affairs of the Senate, a re-  
19 port detailing the effectiveness of—

20 (A) the interagency coordination between  
21 each Federal agency involved in the research  
22 program carried out under this subsection;

23 (B) collaborative research achievements of  
24 the program; and

1 (C) potential opportunities to expand the  
2 technical capabilities of the Department.

3 (5) FUNDING.—There are authorized to be ap-  
4 propriated to the Secretary of Veterans Affairs to  
5 carry out this section \$5,400,000 for fiscal year  
6 2021.

7 (d) INTERAGENCY COLLABORATION.—

8 (1) IN GENERAL.—The Secretary is authorized  
9 to carry out research, development, and demonstra-  
10 tion activities to develop tools to apply to big data  
11 that enable Federal agencies, institutions of higher  
12 education, nonprofit research organizations, and in-  
13 dustry to better leverage the capabilities of the De-  
14 partment to solve complex, big data challenges. The  
15 Secretary shall carry out these activities through a  
16 competitive, merit-reviewed process, and consider ap-  
17 plications from National Laboratories, institutions of  
18 higher education, multi-institutional collaborations,  
19 and other appropriate entities.

20 (2) ACTIVITIES.—In carrying out the research,  
21 development, and demonstration activities authorized  
22 under paragraph (1), the Secretary may—

23 (A) utilize all available mechanisms to pre-  
24 vent duplication and coordinate research efforts  
25 across the Department;

1 (B) establish multiple user facilities to  
2 serve as data enclaves capable of securely stor-  
3 ing data sets created by Federal agencies, insti-  
4 tutions of higher education, nonprofit organiza-  
5 tions, or industry at National Laboratories; and

6 (C) promote collaboration and data sharing  
7 between National Laboratories, research enti-  
8 ties, and user facilities of the Department by  
9 providing the necessary access and secure data  
10 transfer capabilities.

11 (3) REPORT.—Not later than 2 years after the  
12 date of the enactment of this Act, the Secretary  
13 shall submit to the Committee on Science, Space,  
14 and Technology of the House of Representatives and  
15 the Committee on Energy and Natural Resources of  
16 the Senate a report evaluating the effectiveness of  
17 the activities authorized under paragraph (1).

18 (4) FUNDING.—There are authorized to be ap-  
19 propriated to the Secretary of Energy to carry out  
20 paragraph (1) \$15,000,000 for fiscal year 2021.

