

.....
(Original Signature of Member)

119TH CONGRESS
2D SESSION

H. R.

To require the Secretary of Energy to establish a centralized resource for access to data to facilitate biological research through enabling advanced computational methods such as artificial intelligence, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

Mr. VAN EPPS introduced the following bill; which was referred to the Committee on _____

A BILL

To require the Secretary of Energy to establish a centralized resource for access to data to facilitate biological research through enabling advanced computational methods such as 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 “Web of Biological Data
5 Act of 2026”.

1 **SEC. 2. WEB OF BIOLOGICAL DATA.**

2 (a) DEFINITIONS.—In this section:

3 (1) ADVISORY BOARD.—The term “advisory
4 board” means the advisory board established under
5 subsection (h).

6 (2) DIRECTOR.—The term “Director” means
7 the Director of the National Laboratory selected
8 under subsection (b)(1)(A).

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

13 (4) SECRETARY.—The term “Secretary” means
14 the Secretary of Energy.

15 (5) WEB.—The term “Web” means the Web of
16 Biological Data established under subsection
17 (b)(1)(A).

18 (b) ESTABLISHMENT.—

19 (1) IN GENERAL.—Not later than 180 days
20 after the date of enactment of this Act, the Sec-
21 retary shall—

22 (A) through a competitive process, award a
23 grant to a National Laboratory to establish a
24 centralized data resource, to be known as the
25 “Web of Biological Data”, to facilitate biologi-

1 cal research through advanced computational
2 methods such as artificial intelligence; and

3 (B) establish a research and development
4 program to further data science relating to gen-
5 erating, storing, curating, and managing bio-
6 logical data.

7 (2) CONTENTS.—The Web shall—

8 (A) serve as a single point of entry for re-
9 searchers to access different sources of biologi-
10 cal data, especially those funded by the Federal
11 Government, by directly hosting data or pro-
12 viding access to existing databases;

13 (B) have metrics and metadata to indicate
14 data quality, including usability, interoper-
15 ability, and completeness; and

16 (C) include tiered levels of cybersecurity
17 safeguards and access controls to protect dif-
18 ferent types of biological data assets hosted in
19 or connected to the Web.

20 (c) DUTIES OF DIRECTOR.—As part of establishing
21 the Web, the Director may—

22 (1) enter into data sharing agreements, memo-
23 randa of understanding, or other relevant contracts
24 with other Federal departments and agencies to in-

1 tegrate biological datasets into the Web that are not
2 hosted by the Department of Energy;

3 (2) enter into cost-sharing agreements with
4 nongovernmental entities to fund the Web;

5 (3) establish partnerships with other Federal
6 departments and agencies, academia, industry, and
7 international partners and allies to optimize usability
8 and performance of the Web; and

9 (4) carry out any other activities determined
10 necessary by the Secretary to advance United States
11 biological data curation and sharing.

12 (d) IMPLEMENTATION PLAN.—Not later than 1 year
13 after the date of enactment of this Act, the Director, in
14 consultation with the Secretary, shall submit to the Com-
15 mittee on Energy and Natural Resources of the Senate
16 and the Committee on Science, Space, and Technology of
17 the House of Representatives an implementation plan for
18 the Web that describes—

19 (1) how the Director and the Secretary shall
20 implement this section;

21 (2) a plan for working with Federal depart-
22 ments and agencies—

23 (A) to acquire data that was collected
24 through Federal funding; and

1 (B) to digitize biological samples that are
2 currently owned or funded by the Federal Gov-
3 ernment;

4 (3) the type of initial projects that shall be pur-
5 sued under the program established under sub-
6 section (b)(1)(B);

7 (4) a plan for exploring and implementing cost-
8 sharing agreements, including with philanthropy and
9 industry, to assist in cost-sharing for the Web;

10 (5) a cybersecurity plan for the Web; and

11 (6) how the Director will leverage partnerships
12 with other Federal departments and agencies, aca-
13 demia, and industry.

14 (e) PHASE I.—Not later than 2 years after the date
15 of enactment of this Act, the Director shall—

16 (1) test an initial version of the Web, which
17 shall—

18 (A) focus on specific biological data
19 subtypes selected in consultation with the advi-
20 sory board, representatives from other Federal
21 departments and agencies, and external stake-
22 holders from industry and academia;

23 (B) include a single point-of-entry inter-
24 face for biological data that—

1 (i) optimizes user experience and data
2 management;

3 (ii) is built around human-centered
4 design principles;

5 (iii) is built with the capability to ex-
6 pand to other datasets and biological
7 datatypes beyond the initial version; and

8 (iv) is built with tiered security ac-
9 cess;

10 (C) include initial frameworks, developed
11 in collaboration with the National Institute of
12 Standards and Technology, for application pro-
13 gramming interfaces focusing on hosting an ini-
14 tial list of biological data subtypes; and

15 (D) include appropriate cybersecurity and
16 access safeguards to protect data accessible by
17 the Web, including limiting access to adver-
18 sarial countries and countries that do not par-
19 ticipate in reciprocal data sharing, as deter-
20 mined by the Secretary;

21 (2) as part of developing the initial version of
22 the Web described in paragraph (1)—

23 (A) work with Federal departments and
24 agencies to acquire data that was collected
25 through Federal funding;

1 (B) develop cost-sharing agreements, in-
2 cluding with philanthropic and industry mem-
3 bers, to fund the Web; and

4 (C) work with biotechnology stakeholders
5 to test and evaluate the initial version and im-
6 plement any needed changes to ensure usability;

7 (3) select initial research projects to fund under
8 the research and development program established
9 under subsection (b)(1)(B); and

10 (4) submit a report to the committees described
11 in subsection (j) on the implementation of this sub-
12 section and plans for carrying out subsection (f).

13 (f) PHASE II.—

14 (1) IN GENERAL.—Not later than 5 years after
15 the date of enactment of this Act, the Director shall
16 expand the Web—

17 (A) to be accessible to United States re-
18 searchers;

19 (B) to accommodate different types of bio-
20 logical data; and

21 (C) to be capable of adapting and expand-
22 ing based on the emergence of new biological
23 data.

1 (2) FEATURES.—The expanded version of the
2 Web described in paragraph (1) shall have the fol-
3 lowing features:

4 (A) A fully realized single point-of-entry
5 interface that—

6 (i) is connected to any dataset or
7 database that hosts federally funded data;

8 (ii) hosts biological data not already
9 stored by other Federal databases; and

10 (iii) hosts relevant bioinformatic tools
11 for optimized access and analysis.

12 (B) A full suite of interoperability frame-
13 works associated with different types of biologi-
14 cal data, metadata, and appropriate ontologies.

15 (C) An online interface that optimizes
16 usability, including the ability to rapidly search
17 through metadata across databases.

18 (D) Incorporation of human-centered de-
19 sign principles into user interfaces.

20 (E) A standard quality and format for the
21 hosted biological data that is appropriate for
22 training artificial intelligence models.

23 (F) Restrictions on data sharing with
24 countries described in subsection (e)(1)(D).

1 (G) Appropriate cybersecurity require-
2 ments and tiered safeguards related to the sen-
3 sitivity of data to prevent misuse of data.

4 (3) OTHER ACTIVITIES.—In the 3-year period
5 following the 2-year period described in subsection
6 (e), the Secretary shall continue—

7 (A) to carry out the activities described in
8 subparagraphs (A) and (B) of paragraph (2) of
9 that subsection; and

10 (B) to carry out the research and develop-
11 ment program established under subsection
12 (b)(1)(B).

13 (g) INDEPENDENT ASSESSMENT OF CYBERSECU-
14 RITY.—The Director shall seek to enter into a contract
15 with an external entity to conduct a biannual independent
16 assessment of the cybersecurity safeguards and access
17 controls of the Web.

18 (h) ADVISORY BOARD.—

19 (1) IN GENERAL.—Not later than 180 days
20 after the Secretary selects a National Laboratory
21 under subsection (b)(1)(A), the Secretary shall es-
22 tablish an advisory board to oversee the implementa-
23 tion of the Web and ensure that the Web maximizes
24 the usability of biological datasets across sectors.

1 (2) CHAIR.—The Chair of the advisory board
2 shall be the Director.

3 (3) MEMBERS.—The advisory board shall con-
4 sist of 11 additional members, of whom—

5 (A) 4 shall be representatives of industry;

6 (B) 2 shall be representatives of academia;

7 (C) 2 shall be representatives of National
8 Laboratories (excluding the National Labora-
9 tory selected under subsection (b)(1)(A)); and

10 (D) 3 shall be representatives of relevant
11 Federal departments and agencies, as deter-
12 mined by the Director, of whom one or more
13 shall be a subject-matter expert on biosecurity
14 research.

15 (4) FACA EXEMPTION.—Chapter 10 of title 5,
16 United States Code, shall not apply to the advisory
17 board.

18 (i) COLLABORATION.—In developing the Web, the Di-
19 rector shall collaborate with—

20 (1) Federal departments and agencies involved
21 in biosafety and biosecurity capabilities to assist
22 with implementation of proper cybersecurity and bio-
23 security safeguards;

24 (2) the National Artificial Intelligence Research
25 Resource of the National Science Foundation to en-

1 sure integration of well-curated biological data with
2 cutting-edge foundational artificial intelligence tools;

3 (3) the National Institute of Standards and
4 Technology to ensure that—

5 (A) the data included in the Web is for-
6 matted in a way that is appropriate for training
7 artificial intelligence models; and

8 (B) associated application programming
9 interfaces and ontologies are sufficiently adapt-
10 able to changes in biological data;

11 (4) the National Library of Medicine to ensure
12 compatibility and interoperability between the Na-
13 tional Center for Biotechnology information data-
14 bases and the Web;

15 (5) a nongovernmental group that is qualified
16 to implement an online interface that maximizes
17 usability by the public and human-centered design;
18 and

19 (6) any other Federal departments and agencies
20 determined relevant by the Director.

21 (j) REPORT.—Not later than 2 years after the date
22 of enactment of this Act, and annually thereafter, the Di-
23 rector shall submit to the Committee on Energy and Nat-
24 ural Resources of the Senate and the Committee on

1 Science, Space, and Technology of the House of Rep-
2 resentatives a report describing—

3 (1) progress made in developing the Web, in-
4 cluding—

5 (A) the quantity of data stored directly on
6 the Web and accessible through application pro-
7 gramming interfaces;

8 (B) collaborations with other Federal de-
9 partments and agencies; and

10 (C) user engagement;

11 (2)(A) any cybersecurity vulnerabilities identi-
12 fied by an assessment carried out pursuant to sub-
13 section (g); and

14 (B) actions taken to address those
15 vulnerabilities; and

16 (3) plans for maintenance, expansion, and de-
17 velopment of the Web in the subsequent year.

18 (k) AUTHORIZATION OF APPROPRIATIONS.—There
19 are authorized to be appropriated—

20 (1) \$30,000,000 for the period of the first 3
21 years following the date of enactment of this Act to
22 carry out subsection (b)(1)(B);

23 (2) \$310,000,000 for the period of the first 3
24 years following the date of enactment of this Act to
25 carry out subsection (e); and

1 (3) on completion of subsection (e) and the sub-
2 mission of the report described in paragraph (4) of
3 that subsection, \$80,000,000 for each of the subse-
4 quent 2 years to carry out this section.

5 (1) RULE OF CONSTRUCTION.—Nothing in this sec-
6 tion shall be construed to supersede, modify, or waive any
7 applicable requirement relating to privacy, informed con-
8 sent, human-subjects protections, data use limitations, or
9 protections against unauthorized disclosure, misuse, or re-
10 identification applicable to biological data hosted in or ac-
11 cessible through the Web.