

118TH CONGRESS
2D SESSION

S. 4904

To establish the National Fab Lab Network, a nonprofit organization consisting of a national network of local digital fabrication facilities providing universal access to advanced manufacturing tools for workforce development, STEM education, developing inventions, creating businesses, producing personalized products, mitigating risks, and for other purposes.

IN THE SENATE OF THE UNITED STATES

JULY 31, 2024

Mr. VAN HOLLEN (for himself and Ms. MURKOWSKI) introduced the following bill; which was read twice and referred to the Committee on Commerce, Science, and Transportation

A BILL

To establish the National Fab Lab Network, a nonprofit organization consisting of a national network of local digital fabrication facilities providing universal access to advanced manufacturing tools for workforce development, STEM education, developing inventions, creating businesses, producing personalized products, mitigating risks, 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 “National Fab Lab Net-
3 work Act of 2024”.

4 **SEC. 2. FINDINGS.**

5 Congress finds the following:

6 (1) Scientific discoveries and technical innova-
7 tions are critical to the economic and national secu-
8 rity of the United States.

9 (2) Maintaining the leadership of the United
10 States in science, technology, engineering, and math-
11 ematics will require a diverse population with the
12 skills, interest, and access to tools required to ad-
13 vance these fields.

14 (3) Just as earlier digital revolutions in commu-
15 nications and computation provided individuals with
16 the internet and personal computers, a digital revo-
17 lution in fabrication will allow anyone to make al-
18 most anything, anywhere.

19 (4) These creations include elements of a typ-
20 ical household basket of goods (furnishings, apparel,
21 food production equipment, shelter, transportation,
22 education and communication, recreation, and other
23 goods and services), personal technology, means for
24 personal expression, the production of digital fab-
25 rication machinery, community design, and manufac-
26 turing capability.

1 (5) The Center for Bits and Atoms of the Mas-
2 sachusetts Institute of Technology (CBA) has con-
3 tributed significantly to the advancement of these
4 goals through its work in creating and advancing
5 digital fabrication facilities, or “fab labs” in the
6 United States and abroad.

7 (6) Such digital fabrication facilities may in-
8 clude MakerSpaces, Hackerspaces, and other cre-
9 ative spaces that use digital fabrication as a plat-
10 form for education, innovation, entrepreneurship,
11 personal expression, public access, and social impact.

12 (7) Such digital fabrication facilities provide a
13 model for a new kind of national laboratory that op-
14 erates as a network, linking local facilities for ad-
15 vanced manufacturing, providing universal access,
16 cultivating new literacies, and empowering commu-
17 nities.

18 (8) The nonprofit Fab Foundation was estab-
19 lished to support the growth of the international net-
20 work of digital fabrication facilities, to amplify the
21 educational, entrepreneurial, and social impacts of
22 digital fabrication facilities, and to support the de-
23 velopment of regional capacity building organizations
24 to broaden impact as well as address local, regional,

1 and global challenges through the use of digital fab-
2 rication technologies.

3 (9) A coordinated array of national public-pri-
4 vate partnerships will be the most effective way to
5 accelerate the provision of universal access to this
6 infrastructure for workforce development, science,
7 technology, engineering, and mathematics education,
8 developing inventions, creating businesses, producing
9 personalized products, and mitigating risks.

10 **SEC. 3. NATIONAL FAB LAB NETWORK.**

11 (a) DEFINITION.—In this Act, the term “fab lab”
12 means a facility that—

13 (1) contains the range of capabilities required
14 to create form and function from digital designs, in-
15 cluding—

16 (A) computer-controlled machines for addi-
17 tive and subtractive fabrication processes;

18 (B) tools and components for manufac-
19 turing and programming electronic circuits;

20 (C) materials and methods for short-run
21 production; and

22 (D) workflows for three-dimensional design
23 and digitization; and

24 (2) is committed to supporting education, inno-
25 vation, entrepreneurship, personal expression, self-

1 sufficiency, and social impact for its community
2 through digital fabrication.

3 (b) ESTABLISHMENT.—There is hereby established a
4 nonprofit corporation to be known as the “National Fab
5 Lab Network” (in this Act referred to as the “corpora-
6 tion”), which shall not be an agency or establishment of
7 the United States Government. The corporation shall be
8 subject to the provisions of this Act, and, to the extent
9 consistent with this Act, to the District of Columbia Non-
10 profit Corporation Act (D.C. Code, section 29–501 et
11 seq.).

12 (c) GOALS AND ACTIVITIES.—

13 (1) GOALS.—The goals of the corporation are
14 as follows:

15 (A) To provide universal access to digital
16 fabrication.

17 (B) To foster current and future fab labs.

18 (C) To create a national network of con-
19 nected local fab labs to empower individuals
20 and communities in the United States.

21 (D) To foster the use of distributed digital
22 fabrication tools—

23 (i) to promote science, technology, en-
24 gineering and math skills;

- 1 (ii) to increase invention and innova-
 2 tion;
 3 (iii) to create businesses and jobs;
 4 (iv) to fulfill personal, professional,
 5 and community needs;
 6 (v) to create value and mitigate harm;
 7 (vi) to increase self-sufficiency for in-
 8 dividuals, households, and communities;
 9 and
 10 (vii) to align workforce development
 11 with new and emerging jobs.

12 (E) To provide a platform for education
 13 and research, to catalyze new methods in
 14 science, technology, engineering, and mathe-
 15 matics education, and to introduce digital fab-
 16 rication as an essential new literacy.

17 (F) To create new ways of educating the
 18 workforce that will enable workers to compete
 19 in a 21st century global marketplace.

20 (2) ACTIVITIES.—To attain the goals described
 21 in paragraph (1), the corporation shall carry out ac-
 22 tivities, including the following:

23 (A) Seeking to establish a minimum of one
 24 fab lab in each Congressional District,
 25 prioritizing underserved communities.

1 (B) Seeking to establish additional fab labs
2 within the network created under paragraph
3 (1)(C), in response to local demand, and to pro-
4 vide guidelines for their sustainable operation.

5 (C) Linking fab labs into a national net-
6 work, and promoting further expansion of fab
7 labs across the United States.

8 (D) Serving as a resource to assist diverse
9 public and private stakeholders with the effec-
10 tive operation of fab labs, and the training of
11 fab lab leaders and mentors.

12 (E) Maintaining a national registry of fab
13 labs.

14 (F) Providing standards and protocols for
15 connecting fab labs regionally, nationally, and
16 globally.

17 (G) Assisting existing fab labs in pro-
18 ducing additional fab labs.

19 (d) MEMBERSHIP AND ORGANIZATION.—Except as
20 provided in this Act, eligibility for membership in the cor-
21 poration and the rights and privileges of members shall
22 be in accordance with the laws governing tax exempt orga-
23 nizations in the District of Columbia.

24 (e) GOVERNING BODY.—

1 (1) IN GENERAL.—Except as provided in para-
2 graph (2), directors, officers, and other staff of the
3 corporation, and their powers and duties, shall be in
4 accordance with the laws governing tax exempt orga-
5 nizations in the District of Columbia.

6 (2) BOARD MEMBERSHIP.—

7 (A) COMPOSITION.—The board of the cor-
8 poration shall be composed of not fewer than 7
9 members and not more than 15 members.

10 (B) REPRESENTATION.—

11 (i) IN GENERAL.—The membership of
12 the board of the corporation shall collec-
13 tively represent the diversity of fab labs.

14 (ii) REQUIREMENT.—At a minimum,
15 the board of the corporation shall be com-
16 posed of members from geographic regions
17 across the United States, Tribal commu-
18 nities, educational and research institu-
19 tions, libraries, nonprofit and commercial
20 organizations, diverse demographic groups,
21 and the Fab Foundation.

22 (iii) INDIVIDUAL REPRESENTATION.—
23 An individual member of the board of the
24 corporation may represent more than one
25 board role and additional roles may be

1 added to reflect the diversity of the fab lab
2 ecosystem.

3 (C) SELECTION.—The initial board of the
4 corporation shall be chosen, in consultation with
5 the Fab Foundation and in accordance with
6 subparagraph (B)(i), as follows:

7 (i) Two shall be appointed by the ma-
8 jority leader of the Senate.

9 (ii) Two shall be appointed by the mi-
10 nority leader of the Senate.

11 (iii) Two shall be appointed by the
12 Speaker of the House of Representatives.

13 (iv) Two shall be appointed by the mi-
14 nority leader of the House of Representa-
15 tives.

16 (f) POWERS.—The corporation may—

17 (1) coordinate the creation of a national net-
18 work of local fab labs in the United States;

19 (2) issue guidelines for the sustainable oper-
20 ation of fab labs;

21 (3) issue standards and guidelines for fab labs;

22 (4) serve as a resource for organizations and
23 communities seeking to create fab labs by providing
24 information, assessing suitability, advising on the lab

1 lifecycle, and maintaining descriptions of prospective
2 and operating sites;

3 (5) accept funds from private individuals, orga-
4 nizations, government agencies, or other organiza-
5 tions;

6 (6) distribute funds to other organizations to
7 establish and operate fab labs as members of the
8 corporation;

9 (7) facilitate communication between other or-
10 rganizations seeking to join the corporation with
11 operational entities that can source and install fab
12 labs, provide training, assist with operations, ac-
13 count for spending, and assess impact;

14 (8) communicate the benefits available through
15 membership in the corporation to communities and
16 the public;

17 (9) facilitate and participate in synergistic pro-
18 grams, including workforce training, job creation, re-
19 searching the enabling technology and broader im-
20 pacts of such programs, and the production of civic
21 infrastructure;

22 (10) develop processes and methods to mitigate
23 risks associated with digital fabrication;

1 (11) amend a constitution and bylaws for the
2 management of its property and the regulation of its
3 affairs;

4 (12) choose directors, officers, trustees, man-
5 agers, employees, and agents as the activities of the
6 corporation require;

7 (13) make contracts;

8 (14) acquire, own, lease, encumber, and trans-
9 fer property as necessary or convenient to carry out
10 the purposes of the corporation;

11 (15) borrow money, issue instruments of indebt-
12 edness, and secure its obligations by granting secu-
13 rity interests in its property;

14 (16) charge and collect membership dues and
15 subscription fees; and

16 (17) sue and be sued.

17 (g) EXCLUSIVE RIGHT TO NAME, TERM, SEALS, EM-
18 BLEMS, AND BADGES.—The corporation and its partici-
19 pating digital fabrication labs have the exclusive right to
20 use—

21 (1) the name “National Fab Lab Network”;
22 and

23 (2) any seals, emblems, and badges the corpora-
24 tion adopts.

25 (h) RESTRICTIONS.—

1 (1) STOCK AND DIVIDENDS.—The corporation
2 may not issue securities of any kind or declare or
3 pay a dividend.

4 (2) DISTRIBUTION OF INCOME OR ASSETS.—
5 The income or assets of the corporation may not
6 inure to the benefit of, or be distributed to, a direc-
7 tor, officer, or member during the life of the cor-
8 poration under this Act. This paragraph does not
9 prevent the payment of reasonable compensation to
10 an officer or reimbursement for actual necessary ex-
11 penses in amounts approved by the board of direc-
12 tors.

13 (3) LOANS.—The corporation may not make a
14 loan to a director, officer, or employee.

15 (4) CLAIM OF GOVERNMENTAL APPROVAL OR
16 AUTHORITY.—The corporation may not claim con-
17 gressional approval or the authority of the United
18 States Government for any of its activities, but may
19 recognize establishment of the corporation pursuant
20 to subsection (b) of this section.

21 (i) RECORDS AND INSPECTION.—

22 (1) RECORDS.—The corporation shall keep—

23 (A) correct and complete records of ac-
24 count;

1 (B) minutes of the proceedings of its mem-
2 bers, board of directors, and committees having
3 any of the authority of its board of directors;
4 and

5 (C) at its principal office, a record of the
6 names and addresses of its members entitled to
7 vote.

8 (2) INSPECTIONS.—A member entitled to vote,
9 or an agent or attorney of the member, may inspect
10 the records of the corporation for any proper pur-
11 pose, at any reasonable time.

12 (j) ANNUAL REPORT.—Not less frequently than once
13 each year, the corporation shall submit to Congress, in-
14 cluding specifically to the Committee on Commerce,
15 Science, and Transportation of the Senate and the Com-
16 mittee on Science, Space, and Technology of the House
17 of Representatives, a report on the activities of the cor-
18 poration during the prior fiscal year.

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