

117TH CONGRESS
1ST SESSION

S. 1661

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

MAY 17, 2021

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 2021”.

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. DEFINITION OF FAB LAB.**

11 In this Act, the term “fab lab” means a facility
12 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 **SEC. 4. ESTABLISHMENT.**

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

12 **SEC. 5. GOALS AND ACTIVITIES.**

13 (a) GOALS.—The goals of the corporation are as fol-
14 lows:

15 (1) To provide universal access to digital fab-
16 rication.

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

18 (3) To create a national network of connected
19 local fab labs to empower individuals and commu-
20 nities in the United States.

21 (4) To foster the use of distributed digital fab-
22 rication tools—

23 (A) to promote science, technology, engi-
24 neering and math skills;

25 (B) to increase invention and innovation;

1 (C) to create businesses and jobs;

2 (D) to fulfill personal, professional, and
3 community needs;

4 (E) to create value and mitigate harm;

5 (F) to increase self-sufficiency for individ-
6 uals, households, and communities;

7 (G) to reduce dependency on global supply
8 chains; and

9 (H) to align workforce development with
10 new and emerging jobs.

11 (5) To provide a platform for education, re-
12 search, and for catalyzing new methods in science,
13 technology, engineering, and mathematics education,
14 and introducing digital fabrication as an essential
15 new literacy.

16 (6) To create new ways of educating the work-
17 force that will enable workers to compete in a 21st
18 century global marketplace.

19 (b) ACTIVITIES.—To attain the goals described in
20 subsection (a), the corporation shall carry out activities,
21 including the following:

22 (1) Seeking, initially, to establish a minimum of
23 one fab lab in each Congressional District.

24 (2) Seeking to establish additional labs within
25 the network created under subsection (a)(2), in re-

1 sponse to local demand, and to provide guidelines for
2 their sustainable operation.

3 (3) Linking fab labs into a national network,
4 and promoting further expansion of fab labs across
5 the United States.

6 (4) Serving as a resource to assist diverse pub-
7 lic and private stakeholders with the effective oper-
8 ation of fab labs, and the training of fab lab leaders
9 and mentors.

10 (5) Maintaining a national registry of fab labs.

11 (6) Providing standards and protocols for con-
12 necting fab labs regionally, nationally, and globally.

13 (7) Assisting fab labs in producing fab labs.

14 **SEC. 6. MEMBERSHIP AND ORGANIZATION.**

15 Except as provided in this Act, eligibility for member-
16 ship in the corporation and the rights and privileges of
17 members shall be in accordance with the laws governing
18 tax exempt organizations in the District of Columbia.

19 **SEC. 7. GOVERNING BODY.**

20 (a) IN GENERAL.—Except as provided in subsection
21 (b), directors, officers, and other staff of the corporation,
22 and their powers and duties, shall be in accordance with
23 the laws governing tax exempt organizations in the Dis-
24 trict of Columbia.

25 (b) BOARD MEMBERSHIP.—

1 (1) COMPOSITION.—The board of the corpora-
2 tion shall be composed of not fewer than 7 members
3 and not more than 15 members.

4 (2) REPRESENTATION.—

5 (A) IN GENERAL.—The membership of the
6 board of the corporation shall collectively rep-
7 resent the diversity of fab labs.

8 (B) REQUIREMENT.—At a minimum, the
9 board of the corporation shall be composed of
10 members from geographic regions across the
11 United States, Tribal communities, educational
12 and research institutions, libraries, nonprofit
13 and commercial organizations, diverse demo-
14 graphic groups, and the Fab Foundation.

15 (C) INDIVIDUAL REPRESENTATION.—An
16 individual member of the board of the corpora-
17 tion may represent more than one board role
18 and additional roles may be added to reflect the
19 diversity of the fab lab ecosystem.

20 (3) SELECTION.—The initial board of the cor-
21 poration shall be chosen, in consultation with the
22 Fab Foundation and in accordance with paragraph
23 (2)(A), as follows:

24 (A) Two shall be appointed by the majority
25 leader of the Senate.

1 (B) Two shall be appointed by the minority
2 leader of the Senate.

3 (C) Two shall be appointed by the Speaker
4 of the House of Representatives.

5 (D) Two shall be appointed by the minor-
6 ity leader of the House of Representatives.

7 **SEC. 8. POWERS.**

8 The corporation may—

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

11 (2) issue guidelines for the sustainable oper-
12 ation of fab labs;

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

14 (4) serve as a resource for organizations and
15 communities seeking to create fab labs by providing
16 information, assessing suitability, advising on the lab
17 lifecycle, and maintaining descriptions of prospective
18 and operating sites;

19 (5) accept funds from private individuals, orga-
20 nizations, government agencies, or other organiza-
21 tions;

22 (6) distribute funds to other organizations to
23 establish and operate fab labs as members of the
24 corporation;

1 (7) facilitate communication between other or-
2 ganizations seeking to join the corporation with
3 operational entities that can source and install fab
4 labs, provide training, assist with operations, ac-
5 count for spending, and assess impact;

6 (8) communicate the benefits available through
7 membership in the corporation to communities and
8 the public;

9 (9) facilitate and participate in synergistic pro-
10 grams, including workforce training, job creation, re-
11 searching the enabling technology and broader im-
12 pacts of such programs, and the production of civic
13 infrastructure;

14 (10) develop processes and methods to mitigate
15 risks associated with digital fabrication;

16 (11) amend a constitution and bylaws for the
17 management of its property and the regulation of its
18 affairs;

19 (12) choose directors, officers, trustees, man-
20 agers, employees, and agents as the activities of the
21 corporation require;

22 (13) make contracts;

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

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

4 (16) charge and collect membership dues and
 5 subscription fees; and

6 (17) sue and be sued.

7 **SEC. 9. EXCLUSIVE RIGHT TO NAME, TERM, SEALS, EM-**
 8 **BLEMS, AND BADGES.**

9 The corporation and its participating digital fabrica-
 10 tion labs have the exclusive right to use—

11 (1) the name “National Fab Lab Network”;
 12 and

13 (2) any seals, emblems, and badges the corpora-
 14 tion adopts.

15 **SEC. 10. RESTRICTIONS.**

16 (a) **STOCK AND DIVIDENDS.**—The corporation may
 17 not issue securities of any kind or declare or pay a divi-
 18 dend.

19 (b) **DISTRIBUTION OF INCOME OR ASSETS.**—The in-
 20 come or assets of the corporation may not inure to the
 21 benefit of, or be distributed to, a director, officer, or mem-
 22 ber during the life of the corporation under this Act. This
 23 subsection does not prevent the payment of reasonable
 24 compensation to an officer or reimbursement for actual

1 necessary expenses in amounts approved by the board of
2 directors.

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

5 (d) CLAIM OF GOVERNMENTAL APPROVAL OR AU-
6 THORITY.—The corporation may not claim congressional
7 approval or the authority of the United States Govern-
8 ment for any of its activities, but may recognize establish-
9 ment of the corporation pursuant to section 4 of this Act.

10 **SEC. 11. RECORDS AND INSPECTION.**

11 (a) RECORDS.—The corporation shall keep—

12 (1) correct and complete records of account;

13 (2) minutes of the proceedings of its members,
14 board of directors, and committees having any of the
15 authority of its board of directors; and

16 (3) at its principal office, a record of the names
17 and addresses of its members entitled to vote.

18 (b) INSPECTIONS.—A member entitled to vote, or an
19 agent or attorney of the member, may inspect the records
20 of the corporation for any proper purpose, at any reason-
21 able time.

22 **SEC. 12. ANNUAL REPORT.**

23 Not less frequently than once each year, the corpora-
24 tion shall submit to Congress, including specifically to the
25 Committee on Commerce, Science, and Transportation of

1 the Senate and the Committee on Science, Space, and
2 Technology of the House of Representatives, a report on
3 the activities of the corporation during the prior fiscal
4 year.

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