

116TH CONGRESS  
2D SESSION

**S.** \_\_\_\_\_

To amend the Scientific and Advanced-Technology Act of 1992 to further support advanced technological manufacturing, and for other purposes.

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IN THE SENATE OF THE UNITED STATES

Mr. WICKER introduced the following bill; which was read twice and referred to the Committee on \_\_\_\_\_

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**A BILL**

To amend the Scientific and Advanced-Technology Act of 1992 to further support advanced technological manufacturing, 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 “Advanced Techno-  
5 logical Manufacturing Act”.

6 **SEC. 2. HARNESSING OUR NATION'S RESEARCH POTEN-**  
7 **TIAL.**

8 (a) **ESTABLISHMENT.**—The Director of the National  
9 Science Foundation shall conduct multiple pilot programs  
10 within the Foundation to expand the number of institu-

1 tions of higher education (including such institutions that  
2 are community colleges), and other eligible entities that  
3 the Director determines appropriate, that are able to suc-  
4 cessfully compete for National Science Foundation grants.

5 (b) COMPONENTS.—Each pilot program described in  
6 subsection (a) shall include at least 1 of the following ele-  
7 ments:

8 (1) A mentorship program.

9 (2) Grant writing technical assistance.

10 (3) Targeted outreach.

11 (4) Programmatic support or solutions for insti-  
12 tutions or entities that do not have an experienced  
13 grant management office.

14 (5) Appropriate reduction of administrative  
15 burdens.

16 (6) An increase in the number of grant review-  
17 ers from institutions of higher education that have  
18 not traditionally received funds from the National  
19 Science Foundation.

20 (c) AGENCY-WIDE PROGRAMS.—Not later than 5  
21 years after the date of enactment of this Act, the Director  
22 of the National Science Foundation shall—

23 (1) review the results of the pilot programs de-  
24 scribed in subsection (a); and

1           (2) include agency-wide best practices from the  
2 pilot programs when implementing the criteria re-  
3 quired under section 203(c) of the Academic Re-  
4 search Facilities Modernization Act of 1988 (42  
5 U.S.C. 1862b(c)).

6           (d) INSTITUTION OF HIGHER EDUCATION.—In this  
7 section, the term “institution of higher education” has the  
8 meaning given the term in section 101 of the Higher Edu-  
9 cation Act of 1965 (20 U.S.C. 1001).

10 **SEC. 3. ADVANCED SCIENTIFIC AND TECHNICAL MANUFAC-**  
11 **TURING.**

12           (a) FINDINGS AND PURPOSE.—Section 2 of the Sci-  
13 entific and Advanced-Technology Act of 1992 (42 U.S.C.  
14 1862h) is amended—

15           (1) in subsection (a)—

16                   (A) in paragraph (3), by striking “science,  
17 mathematics, and technology” and inserting  
18 “science, technology, engineering, and mathe-  
19 matics or STEM”;

20                   (B) in paragraph (4), by striking  
21 “trained” and inserting “educated”; and

22                   (C) in paragraph (5), by striking “sci-  
23 entific and technical education and training”  
24 and inserting “STEM education and training”;  
25 and

1 (2) in subsection (b)—

2 (A) in paragraph (2), by striking “mathe-  
3 matics and science” and inserting “STEM  
4 fields”; and

5 (B) in paragraph (4), by striking “mathe-  
6 matics and science instruction” and inserting  
7 “STEM instruction”.

8 (b) MODERNIZING REFERENCES TO STEM.—Section  
9 3 of the Scientific and Advanced-Technology Act of 1992  
10 (42 U.S.C. 1862i) is amended—

11 (1) in the section heading, by striking “**SCI-**  
12 **ENTIFIC AND TECHNICAL EDUCATION**” and in-  
13 sserting “**STEM EDUCATION**”;

14 (2) in subsection (a)—

15 (A) in the subsection heading, by striking  
16 “**SCIENTIFIC AND TECHNICAL EDUCATION**”  
17 and inserting “**STEM EDUCATION**”;

18 (B) in the matter preceding paragraph  
19 (1)—

20 (i) by striking “core education courses  
21 in science and mathematics” and inserting  
22 “core education courses in STEM fields”;  
23 and

1 (ii) by inserting “veterans and individ-  
2 uals engaged in” before “work in the  
3 home”;

4 (C) in paragraph (1)—

5 (i) by inserting “and study” after  
6 “development”; and

7 (ii) by striking “core science and  
8 mathematics courses” and inserting “core  
9 STEM courses”;

10 (D) in paragraph (2), by striking “science,  
11 mathematics, and advanced-technology fields”  
12 and inserting “STEM and advanced-technology  
13 fields”;

14 (E) in paragraph (3)—

15 (i) in subparagraph (A), by inserting  
16 “to support the advanced-technology indus-  
17 tries that drive the competitiveness of the  
18 United States in the global economy” be-  
19 fore the semicolon at the end; and

20 (ii) by striking subparagraph (B) and  
21 inserting the following:

22 “(B) provide for private sector donations,  
23 faculty opportunities to have short-term assign-  
24 ments with industry, equipment loans, and the  
25 cooperative use of laboratories, plants, and

1 other facilities, and provision for state-of-the-  
2 art work experience opportunities for students  
3 enrolled in such programs; and”;

4 (F) in paragraph (4), by striking “sci-  
5 entific and advanced-technology fields” and in-  
6 serting “STEM and advanced-technology  
7 fields”; and

8 (G) in paragraph (5), by striking “ad-  
9 vanced scientific and technical education” and  
10 inserting “advanced STEM and advanced-tech-  
11 nology”;

12 (3) in subsection (b)—

13 (A) by striking the subsection heading and  
14 inserting the following: “CENTERS OF SCI-  
15 ENTIFIC AND TECHNICAL EDUCATION.—”;

16 (B) in the matter preceding paragraph (1),  
17 by striking “not to exceed 10 in number” and  
18 inserting “in advanced-technology fields”;

19 (C) in paragraph (2), by striking “edu-  
20 cation in mathematics and science” and insert-  
21 ing “STEM education”; and

22 (D) in the flush matter following para-  
23 graph (2), by striking “in the geographic region  
24 served by the center”;

25 (4) in subsection (c)—

- 1 (A) in paragraph (1)—
- 2 (i) in subparagraph (A)—
- 3 (I) by striking the matter pre-
- 4 ceding clause (i) and inserting the fol-
- 5 lowing: “The Director shall make
- 6 grants to eligible partnerships to en-
- 7 courage the development of career and
- 8 educational pathways with multiple
- 9 entry and exit points leading to cre-
- 10 dentials and degrees, and to assist
- 11 students pursuing pathways in STEM
- 12 fields to transition from associate-de-
- 13 gree-granting colleges to bachelor-de-
- 14 gree-granting institutions, through
- 15 such means as—”;
- 16 (II) in clause (i), by striking “to
- 17 ensure” and inserting “to develop ar-
- 18 ticulation agreements that ensure”;
- 19 and
- 20 (III) in clause (ii), by striking
- 21 “courses at the bachelor-degree-grant-
- 22 ing institution” and inserting “the ca-
- 23 reer and educational pathways sup-
- 24 ported by the articulation agree-
- 25 ments”;

- 1 (ii) in subparagraph (B)—
- 2 (I) in clause (i), by inserting
- 3 “veterans and individuals engaged in”
- 4 before “work in the home”;
- 5 (II) in clause (iii)—
- 6 (aa) by striking “bachelor’s-
- 7 degree-granting institutions” and
- 8 inserting “institutions or work
- 9 sites”; and
- 10 (bb) by inserting “or indus-
- 11 try internships” after “summer
- 12 programs”; and
- 13 (III) by striking the flush text
- 14 following clause (iv); and
- 15 (iii) by striking subparagraph (C);
- 16 (B) in paragraph (2)—
- 17 (i) by striking “mathematics and
- 18 science” and inserting “STEM”;
- 19 (ii) by striking “mathematics and
- 20 science education” and inserting “STEM
- 21 education”;
- 22 (iii) by striking “science and ad-
- 23 vanced-technology fields” and inserting
- 24 “STEM and advanced-technology fields”;
- 25 and



1                   (iv) by striking “agreements with local  
2                   educational agencies” and inserting “ar-  
3                   ticulation agreements or dual credit  
4                   courses with local secondary schools”; and  
5                   (C) by striking paragraph (3) and insert-  
6                   ing the following:

7                   “(3) MENTOR TRAINING GRANTS.—The Direc-  
8                   tor shall establish a program to encourage and make  
9                   grants available to institutions of higher education  
10                  that award associate degrees to recruit and train in-  
11                  dividuals from STEM fields to mentor students who  
12                  are described in section 33 or 34 of the Science and  
13                  Engineering Equal Opportunities Act (42 U.S.C.  
14                  1885a or 1885b) in order to assist those students in  
15                  identifying, qualifying for, and entering higher-pay-  
16                  ing technical jobs in those fields.”;

17                  (5) in subsection (g), by striking the second  
18                  sentence;

19                  (6) in subsection (i)—

20                         (A) by striking paragraph (3); and

21                         (B) by redesignating paragraphs (4) and

22                         (5) as paragraphs (3) and (4), respectively; and

23                         (7) in subsection (j)—

24                         (A) by striking paragraph (1) and insert-  
25                         ing the following:

1           “(1) the term ‘advanced-technology’ includes  
2           technological fields such as advanced manufacturing,  
3           agricultural-, biological- and chemical-technologies,  
4           energy and environmental technologies, engineering  
5           technologies, information technologies, micro and  
6           nano-technologies, cybersecurity technologies,  
7           geospatial technologies, and new, emerging tech-  
8           nology areas;”;

9           (B) by striking paragraph (2) and insert-  
10          ing the following:

11          “(2) the term ‘associate-degree-granting college’  
12          means an institution of higher education (as defined  
13          in section 102 of the Higher Education Act of 1965  
14          (20 U.S.C. 1002)) that offers a 2-year associate-de-  
15          gree program or 2-year certificate program;”;

16          (C) in paragraph (3), by striking “as de-  
17          termined under section 101 of the Higher Edu-  
18          cation Act of 1965” and inserting “as defined  
19          in section 102 of the Higher Education Act of  
20          1965 (20 U.S.C. 1002)”;

21          (D) in paragraph (4), by striking “sepa-  
22          rate bachelor-degree-granting institutions” and  
23          inserting “other entities”;

24          (E) by striking paragraph (7);

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1                   (F) by redesignating paragraphs (8) and  
2                   (9) as paragraphs (7) and (8), respectively; and  
3                   (G) in paragraph (8), as redesignated by  
4                   subparagraph (F)—  
5                   (i) by striking “mathematics, science,  
6                   engineering, or technology” and inserting  
7                   “science, technology, engineering, or math-  
8                   ematics”; and  
9                   (ii) by inserting “and cybersecurity”  
10                   after “computer science”.