

117TH CONGRESS
1ST SESSION

S. 735

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

IN THE SENATE OF THE UNITED STATES

MARCH 11, 2021

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

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

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

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

9 (1) A mentorship program.

10 (2) Grant writing technical assistance.

11 (3) Targeted outreach.

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

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

19 (6) An increase of the term and funding, for a
20 period of 3 years or less, as appropriate, to a prin-
21 cipal investigator that is a first-time grant awardee,
22 when paired with regular mentoring on the adminis-
23 trative aspects of grant management.

1 (c) LIMITATION.—As appropriate, each pilot program
2 described in subsection (a) shall work to reduce adminis-
3 trative burdens.

4 (d) AGENCY-WIDE PROGRAMS.—Not later than 5
5 years after the date of enactment of this Act, the Director
6 of the National Science Foundation shall—

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

9 (2) develop agency-wide best practices from the
10 pilot programs for implementation across the Foun-
11 dation, in order to fulfill the requirement under sec-
12 tion 3(e) of the National Science Foundation Act of
13 1950 (42 U.S.C. 1862(e)).

14 (e) INSTITUTION OF HIGHER EDUCATION.—In this
15 section, the term “institution of higher education” has the
16 meaning given the term in section 101 of the Higher Edu-
17 cation Act of 1965 (20 U.S.C. 1001).

18 **SEC. 3. ADVANCED SCIENTIFIC AND TECHNICAL MANUFAC-**
19 **TURING.**

20 (a) FINDINGS AND PURPOSE.—Section 2 of the Sci-
21 entific and Advanced-Technology Act of 1992 (42 U.S.C.
22 1862h) is amended—

23 (1) in subsection (a)—

24 (A) in paragraph (3), by striking “science,
25 mathematics, and technology” and inserting

1 “science, technology, engineering, and mathe-
2 matics or STEM”;

3 (B) in paragraph (4), by inserting “edu-
4 cated and” before “trained”; and

5 (C) in paragraph (5), by striking “sci-
6 entific and technical education and training”
7 and inserting “STEM education and training”;
8 and

9 (2) in subsection (b)—

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

13 (B) in paragraph (4), by striking “mathe-
14 matics and science instruction” and inserting
15 “STEM instruction”.

16 (b) MODERNIZING REFERENCES TO STEM.—Section
17 3 of the Scientific and Advanced-Technology Act of 1992
18 (42 U.S.C. 1862i) is amended—

19 (1) in the section heading, by striking “**SCI-**
20 **ENTIFIC AND TECHNICAL EDUCATION**” and in-
21 serting “**STEM EDUCATION**”;

22 (2) in subsection (a)—

23 (A) in the subsection heading, by striking
24 “**SCIENTIFIC AND TECHNICAL EDUCATION**”
25 and inserting “**STEM EDUCATION**”;

1 (B) in the matter preceding paragraph

2 (1)—

3 (i) by inserting “and education to pre-
4 pare the skilled technical workforce to
5 meet workforce demands” before “, and to
6 improve”;

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

11 (iii) by inserting “veterans and indi-
12 viduals engaged in” before “work in the
13 home”; and

14 (iv) by inserting “and on building a
15 pathway from secondary schools, to asso-
16 ciate-degree-granting institutions, to ca-
17 reers that require technical training” be-
18 fore “, and shall be designed”;

19 (C) in paragraph (1)—

20 (i) by inserting “and study” after
21 “development”; and

22 (ii) by striking “core science and
23 mathematics courses” and inserting “core
24 STEM courses”;

1 (D) in paragraph (2), by striking “science,
2 mathematics, and advanced-technology fields”
3 and inserting “STEM and advanced-technology
4 fields”;

5 (E) in paragraph (3)(A), by inserting “to
6 support the advanced-technology industries that
7 drive the competitiveness of the United States
8 in the global economy” before the semicolon at
9 the end;

10 (F) in paragraph (4), by striking “sci-
11 entific and advanced-technology fields” and in-
12 serting “STEM and advanced-technology
13 fields”; and

14 (G) in paragraph (5), by striking “ad-
15 vanced scientific and technical education” and
16 inserting “advanced STEM and advanced-tech-
17 nology”;

18 (3) in subsection (b)—

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

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

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

4 (D) in the flush matter following para-
 5 graph (2), by striking “in the geographic region
 6 served by the center”;

7 (4) in subsection (c)—

8 (A) in paragraph (1)—

9 (i) in subparagraph (A)—

10 (I) in the matter preceding clause
 11 (i), by striking “to encourage” and all
 12 that follows through “such means
 13 as—” and inserting “to encourage the
 14 development of career and educational
 15 pathways with multiple entry and exit
 16 points leading to credentials and de-
 17 grees, and to assist students pursuing
 18 pathways in STEM fields to transition
 19 from associate-degree-granting col-
 20 leges to bachelor-degree-granting in-
 21 stitutions, through such means as—”;

22 (II) in clause (i), by striking “to
 23 ensure” and inserting “to develop ar-
 24 ticulation agreements that ensure”;
 25 and

- 1 (III) in clause (ii), by striking
2 “courses at the bachelor-degree-grant-
3 ing institution” and inserting “the ca-
4 reer and educational pathways sup-
5 ported by the articulation agree-
6 ments”;
- 7 (ii) in subparagraph (B)—
- 8 (I) in clause (i), by inserting
9 “veterans and individuals engaged in”
10 before “work in the home”;
- 11 (II) in clause (iii)—
- 12 (aa) by striking “bachelor’s-
13 degree-granting institutions” and
14 inserting “institutions or work
15 sites”; and
- 16 (bb) by inserting “or indus-
17 try internships” after “summer
18 programs”; and
- 19 (III) by striking the flush text
20 following clause (iv); and
- 21 (iii) by striking subparagraph (C);
- 22 (B) in paragraph (2)—
- 23 (i) by striking “mathematics and
24 science programs” and inserting “STEM
25 programs”;

1 (ii) by inserting “and, as appropriate,
2 elementary schools,” after “with secondary
3 schools”;

4 (iii) by striking “mathematics and
5 science education” and inserting “STEM
6 education”;

7 (iv) by striking “secondary school stu-
8 dents” and inserting “students at these
9 schools”;

10 (v) by striking “science and advanced-
11 technology fields” and inserting “STEM
12 and advanced-technology fields”; and

13 (vi) by striking “agreements with local
14 educational agencies” and inserting “ar-
15 ticulation agreements or dual credit
16 courses with local secondary schools, or
17 other means as the Director determines
18 appropriate,”; and

19 (C) in paragraph (3)—

20 (i) by striking subparagraph (B);

21 (ii) by striking “shall—” and all that
22 follows through “establish a” and inserting
23 “shall establish a”;

1 (iii) by striking “the fields of science,
2 technology, engineering, and mathematics”
3 and inserting “STEM fields”; and

4 (iv) by striking “; and” and inserting
5 “, including jobs at Federal and academic
6 laboratories.”;

7 (5) in subsection (d)(2)—

8 (A) in subparagraph (D), by striking
9 “and” after the semicolon;

10 (B) in subparagraph (E), by striking the
11 period at the end and inserting “; and”; and

12 (C) by adding at the end the following:

13 “(F) as appropriate, applications that
14 apply the best practices for STEM education
15 and technical skills education through distance
16 learning or in a simulated work environment, as
17 determined by research described in subsection
18 (f).”;

19 (6) in subsection (g), by striking the second
20 sentence;

21 (7) in subsection (h)(1)—

22 (A) in subparagraph (A), by striking
23 “2022” and inserting “2026”;

24 (B) in subparagraph (B), by striking
25 “2022” and inserting “2026”; and

1 (C) in subparagraph (C)—

2 (i) by striking “up to \$2,500,000”

3 and inserting “not less than \$3,000,000”;

4 and

5 (ii) by striking “2022” and inserting

6 “2026”; and

7 (8) in subsection (j)—

8 (A) by striking paragraph (1) and insert-

9 ing the following:

10 “(1) the term ‘advanced-technology’ includes

11 technological fields such as advanced manufacturing,

12 agricultural-, biological- and chemical-technologies,

13 energy and environmental technologies, engineering

14 technologies, information technologies, micro and

15 nano-technologies, cybersecurity technologies,

16 geospatial technologies, and new, emerging tech-

17 nology areas;”;

18 (B) by striking paragraph (2) and insert-

19 ing the following:

20 “(2) the term ‘associate-degree-granting college’

21 means an institution of higher education (as defined

22 in section 102 of the Higher Education Act of 1965

23 (20 U.S.C. 1002)) that offers a 2-year associate-de-

24 gree program or 2-year certificate program;”;

1 (C) in paragraph (3), by striking “as de-
2 termined under section 101 of the Higher Edu-
3 cation Act of 1965” and inserting “as defined
4 in section 102 of the Higher Education Act of
5 1965 (20 U.S.C. 1002)”;

6 (D) in paragraph (4), by striking “sepa-
7 rate bachelor-degree-granting institutions” and
8 inserting “other entities”;

9 (E) by striking paragraph (7);

10 (F) by redesignating paragraphs (8) and
11 (9) as paragraphs (7) and (8), respectively;

12 (G) in paragraph (7), as redesignated by
13 subparagraph (F), by striking “and” after the
14 semicolon;

15 (H) in paragraph (8), as redesignated by
16 subparagraph (F)—

17 (i) by striking “mathematics, science,
18 engineering, or technology” and inserting
19 “science, technology, engineering, or math-
20 ematics”; and

21 (ii) by striking “computer science.”
22 and inserting “computer science and cyber-
23 security; and”; and

24 (I) by adding at the end the following:

1 “(9) the term ‘skilled technical workforce’
2 means workers—

3 “(A) in occupations that use significant
4 levels of science and engineering expertise and
5 technical knowledge; and

6 “(B) whose level of educational attainment
7 is less than a bachelor degree.”.

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