

117TH CONGRESS
1ST SESSION

H. R. 3828

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

IN THE HOUSE OF REPRESENTATIVES

JUNE 11, 2021

Mr. KILDEE (for himself and Mr. MELJER) introduced the following bill; which was referred to the Committee on Science, Space, and Technology

A BILL

To amend the Scientific and Advanced-Technology Act of 1992 to expand support for 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. ADVANCED TECHNOLOGICAL MANUFACTURING**
7 **ACT.**

8 (a) FINDINGS AND PURPOSE.—Section 2 of the Sci-
9 entific and Advanced-Technology Act of 1992 (42 U.S.C.
10 1862h) is amended—

1 (1) in subsection (a)—

2 (A) in paragraph (3), by striking “science,
3 mathematics, and technology” and inserting
4 “science, technology, engineering, and mathe-
5 matics or STEM”;

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

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

12 (2) in subsection (b)—

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

16 (B) in paragraph (4), by striking “mathe-
17 matics and science instruction” and inserting
18 “STEM instruction”.

19 (b) MODERNIZING REFERENCES TO STEM.—Section
20 3 of the Scientific and Advanced-Technology Act of 1992
21 (42 U.S.C. 1862i) is amended—

22 (1) in the section heading, by striking “**SCI-**
23 **ENTIFIC AND TECHNICAL EDUCATION** ” and in-
24 serting “**STEM EDUCATION**”;

25 (2) in subsection (a)—

1 (A) in the subsection heading, by striking
2 “SCIENTIFIC AND TECHNICAL EDUCATION ”
3 and inserting “STEM EDUCATION”;

4 (B) in the matter preceding paragraph
5 (1)—

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

10 (ii) by striking “core education
11 courses in science and mathematics” and
12 inserting “core education courses in STEM
13 fields”;

14 (iii) by inserting “veterans and indi-
15 viduals engaged in” before “work in the
16 home”; and

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

22 (C) in paragraph (1)—

23 (i) by inserting “and study” after
24 “development”; and

1 (ii) by striking “core science and
2 mathematics courses” and inserting “core
3 STEM courses”;

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

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

13 (F) in paragraph (4), by striking “sci-
14 entific and advanced-technology fields” and in-
15 serting “STEM and advanced-technology
16 fields”; and

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

21 (3) in subsection (b)—

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

1 (B) in the matter preceding paragraph (1),
2 by striking “not to exceed 12 in number” and
3 inserting “in advanced-technology fields”;

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

7 (D) in the flush matter following para-
8 graph (2), by striking “in the geographic region
9 served by the center”;

10 (4) in subsection (c)—

11 (A) in paragraph (1)—

12 (i) in subparagraph (A)—

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

1 (II) in clause (i), by striking “to
2 ensure” and inserting “to develop ar-
3 ticulation agreements that ensure”;
4 and

5 (III) in clause (ii), by striking
6 “courses at the bachelor-degree-grant-
7 ing institution” and inserting “the ca-
8 reer and educational pathways sup-
9 ported by the articulation agree-
10 ments”;

11 (ii) in subparagraph (B)—

12 (I) in clause (i), by inserting
13 “veterans and individuals engaged in”
14 before “work in the home”;

15 (II) in clause (iii)—

16 (aa) by striking “bachelor’s-
17 degree-granting institutions” and
18 inserting “institutions or work
19 sites”; and

20 (bb) by inserting “or indus-
21 try internships” after “summer
22 programs”; and

23 (III) by striking the flush text
24 following clause (iv); and

25 (iii) by striking subparagraph (C);

1 (B) in paragraph (2)—

2 (i) by striking “mathematics and
3 science programs” and inserting “STEM
4 programs”;

5 (ii) by inserting “and, as appropriate,
6 elementary schools,” after “with secondary
7 schools”;

8 (iii) by striking “mathematics and
9 science education” and inserting “STEM
10 education”;

11 (iv) by striking “secondary school stu-
12 dents” and inserting “students at these
13 schools”;

14 (v) by striking “science and advanced-
15 technology fields” and inserting “STEM
16 and advanced-technology fields”; and

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

23 (C) in paragraph (3)—

24 (i) by striking subparagraph (B);

1 (ii) by striking “shall—” and all that
2 follows through “establish a” and inserting
3 “shall establish a”;

4 (iii) by striking “the fields of science,
5 technology, engineering, and mathematics”
6 and inserting “STEM fields”; and

7 (iv) by striking “; and” and inserting
8 “, including jobs at Federal and academic
9 laboratories.”;

10 (5) in subsection (d)(2)—

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

13 (B) in subparagraph (E), by striking the
14 period at the end and inserting a semicolon;
15 and

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

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

23 (6) in subsection (g), by striking the second
24 sentence;

25 (7) in subsection (h)(1)—

1 (A) in subparagraph (A), by striking
2 “2022” and inserting “2026”;

3 (B) in subparagraph (B), by striking
4 “2022” and inserting “2026”; and

5 (C) in subparagraph (C)—

6 (i) by striking “up to \$2,500,000”
7 and inserting “not less than \$3,000,000”;
8 and

9 (ii) by striking “2022” and inserting
10 “2026”;

11 (8) in subsection (i)—

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

13 (B) by redesignating paragraphs (4) and
14 (5) as paragraphs (3) and (4), respectively; and
15 (9) in subsection (j)—

16 (A) by striking paragraph (1) and insert-
17 ing the following:

18 “(1) the term advanced-technology includes
19 technological fields such as advanced manufacturing,
20 agricultural-, biological- and chemical-technologies,
21 energy and environmental technologies, engineering
22 technologies, information technologies, micro and
23 nano-technologies, cybersecurity technologies,
24 geospatial technologies, and new, emerging tech-
25 nology areas;”;

1 (B) in paragraph (4), by striking “separate
2 bachelor-degree-granting institutions” and in-
3 serting “other entities”;

4 (C) by striking paragraph (7);

5 (D) by redesignating paragraphs (8) and
6 (9) as paragraphs (7) and (8), respectively;

7 (E) in paragraph (7), as redesignated by
8 subparagraph (D), by striking “and” after the
9 semicolon;

10 (F) in paragraph (8), as redesignated by
11 subparagraph (D)—

12 (i) by striking “mathematics, science,
13 engineering, or technology” and inserting
14 “science, technology, engineering, or math-
15 ematics”; and

16 (ii) by striking the period at the end
17 and inserting “; and”; and

18 (G) by adding at the end the following:

19 “(9) the term skilled technical workforce means
20 workers—

21 “(A) in occupations that use significant
22 levels of science and engineering expertise and
23 technical knowledge; and

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

1 (c) AUTHORIZATION OF APPROPRIATIONS.—Section
2 5 of the Scientific and Advanced-Technology Act of 1992
3 (42 U.S.C. 1862j) is amended to read as follows:

4 **“SEC. 5. AUTHORIZATION OF APPROPRIATIONS.**

5 “‘There are authorized to be appropriated to the Di-
6 rector for carrying out sections 2 through 4, \$150,000,000
7 for fiscal years 2022 through 2026.’”.

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