

117TH CONGRESS  
1ST SESSION

# H. R. 4819

To require the Secretary of Energy to revitalize existing university infrastructure relating to nuclear science and engineering and establish new university-based nuclear science and engineering facilities, and for other purposes.

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## IN THE HOUSE OF REPRESENTATIVES

JULY 29, 2021

Mr. GONZALEZ of Ohio (for himself, Mr. FOSTER, Mr. CASTEN, and Mr. MELJER) introduced the following bill; which was referred to the Committee on Science, Space, and Technology

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## A BILL

To require the Secretary of Energy to revitalize existing university infrastructure relating to nuclear science and engineering and establish new university-based nuclear science and engineering facilities, 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 “National Nuclear Uni-  
5       versity Research Infrastructure Reinvestment Act of  
6       2021”.

1 **SEC. 2. PURPOSES.**

2 The purposes of this Act are—

3 (1) to upgrade the nuclear research capabilities  
4 of universities in the United States to meet the re-  
5 search requirements of advanced nuclear energy sys-  
6 tems;

7 (2) to ensure the continued operation of univer-  
8 sity research reactors;

9 (3) to coordinate available resources to enable  
10 the establishment, including the start and efficient  
11 completion of construction, of new nuclear science  
12 and engineering facilities; and

13 (4) to support—

14 (A) workforce development critical to  
15 maintaining United States leadership in nuclear  
16 science and engineering and related disciplines;  
17 and

18 (B) the establishment or enhancement of  
19 nuclear science and engineering capabilities and  
20 other, related capabilities at historically Black  
21 colleges and universities, Tribal colleges or uni-  
22 versities, minority-serving institutions, EPSCoR  
23 universities, junior or community colleges, and  
24 associate-degree-granting colleges.

1 **SEC. 3. UNIVERSITY INFRASTRUCTURE COLLABORATION.**

2 Section 954(a) of the Energy Policy Act of 2005 (42  
3 U.S.C. 16274(a)) is amended—

4 (1) in paragraph (2), by amending subpara-  
5 graph (D) to read as follows:

6 “(D) promote collaborations, partnerships,  
7 and knowledge sharing between institutions of  
8 higher education, National Laboratories, indus-  
9 try, and associated labor unions; and”;

10 (2) by amending paragraph (4) to read as fol-  
11 lows:

12 “(4) **STRENGTHENING UNIVERSITY RESEARCH**  
13 **AND TRAINING REACTORS AND ASSOCIATED INFRA-**  
14 **STRUCTURE.—**

15 “(A) **IN GENERAL.—**In carrying out the  
16 program under this subsection, the Secretary  
17 may support—

18 “(i) converting research reactors from  
19 high-enrichment fuels to low-enrichment  
20 fuels and upgrading operational instrumen-  
21 tation;

22 “(ii) revitalizing and upgrading exist-  
23 ing nuclear science and engineering infra-  
24 structure that support the development of  
25 advanced nuclear technologies and applica-  
26 tions;

1                   “(iii) regional or subregional univer-  
2                   sity-led consortia to—

3                   “(I) broaden access to university  
4                   research reactors;

5                   “(II) enhance existing university-  
6                   based nuclear science and engineering  
7                   infrastructure; and

8                   “(III) provide project manage-  
9                   ment, technical support, quality engi-  
10                  neering and inspections, manufac-  
11                  turing, and nuclear material support;

12                  “(iv) student training programs, in  
13                  collaboration with the United States nu-  
14                  clear industry, in relicensing and upgrad-  
15                  ing reactors, including through the provi-  
16                  sion of technical assistance; and

17                  “(v) reactor improvements that em-  
18                  phasize research, training, and education,  
19                  including through the Innovations in Nu-  
20                  clear Infrastructure and Education Pro-  
21                  gram or any similar program.

22                  “(B) AUTHORIZATION OF APPROPRIA-  
23                  TIONS.—Of any amounts appropriated to carry  
24                  out the program under this subsection, there is  
25                  authorized to be appropriated to the Secretary

1 to carry out clauses (ii) and (iii) of subpara-  
2 graph (A) \$55,000,000 for each of fiscal years  
3 2022 through 2026.”.

4 **SEC. 4. ADVANCED NUCLEAR RESEARCH INFRASTRUCTURE**  
5 **ENHANCEMENT SUBPROGRAM.**

6 Section 954(a) of the Energy Policy Act of 2005 (42  
7 U.S.C. 16274(a)), as amended by section 3, is further  
8 amended—

9 (1) by redesignating paragraphs (5) through  
10 (8) as paragraphs (6) through (9), respectively;

11 (2) by inserting after paragraph (4) the fol-  
12 lowing:

13 “(5) ADVANCED NUCLEAR RESEARCH INFRA-  
14 STRUCTURE ENHANCEMENT.—

15 “(A) IN GENERAL.—The Secretary shall  
16 carry out a subprogram to be known as the Ad-  
17 vanced Nuclear Research Infrastructure En-  
18 hancement Subprogram in order to—

19 “(i) demonstrate various advanced nu-  
20 clear reactor and nuclear microreactor con-  
21 cepts;

22 “(ii) establish medical isotope produc-  
23 tion reactors or other specialized applica-  
24 tions; and

1           “(iii) advance other research infra-  
2           structure that, in the determination of the  
3           Secretary, is consistent with the mission of  
4           the Department.

5           “(B) NEW NUCLEAR SCIENCE AND ENGI-  
6           NEERING FACILITIES.—In carrying out the sub-  
7           program, the Secretary shall establish—

8                   “(i) not more than 4 new research re-  
9                   actors; and

10                   “(ii) new nuclear science and engi-  
11                   neering facilities, as required to address re-  
12                   search demand and identified infrastruc-  
13                   ture gaps.

14           “(C) LOCATIONS.—New research reactors  
15           and facilities established under subparagraph  
16           (B) shall be established in a manner that—

17                   “(i) supports the regional or sub-  
18                   regional consortia described in paragraph  
19                   (4)(C); and

20                   “(ii) encourages the participation of—

21                           “(I) historically Black colleges  
22                           and universities;

23                           “(II) Tribal colleges or univer-  
24                           sities;

1                   “(III) minority-serving institu-  
2                   tions;

3                   “(IV) EPSCoR universities;

4                   “(V) junior or community col-  
5                   leges; and

6                   “(VI) associate-degree-granting  
7                   colleges.

8                   “(D) AUTHORIZATION OF APPROPRIA-  
9                   TIONS.—Of any amounts appropriated to carry  
10                  out the program under this subsection, there  
11                  are authorized to be appropriated to the Sec-  
12                  retary to carry out the subprogram under this  
13                  paragraph—

14                   “(i) \$10,000,000 for fiscal year 2022;

15                   “(ii) \$45,000,000 for fiscal year 2023;

16                   “(iii) \$60,000,000 for fiscal year  
17                  2024;

18                   “(iv) \$65,000,000 for fiscal year  
19                  2025;

20                   “(v) \$80,000,000 for fiscal year 2026;

21                   “(vi) \$140,000,000 for fiscal year  
22                  2027;

23                   “(vii) \$120,000,000 for fiscal year  
24                  2028; and

1                   “(viii) \$80,000,000 for fiscal year  
2                   2029.”; and

3                   (3) by amending paragraph (9), as redesignated  
4                   by paragraph (1) of this subsection, to read as fol-  
5                   lows:

6                   “(9) DEFINITIONS.—In this subsection:

7                   “(A) ASSOCIATE-DEGREE-GRANTING COL-  
8                   LEGE.—The term ‘associate-degree-granting  
9                   college’ means an institution of higher edu-  
10                  cation (as determined under section 101 of the  
11                  Higher Education Act of 1965 (20 U.S.C.  
12                  1001)) that—

13                  “(i) is a nonprofit institution that of-  
14                  fers a 2-year associate-degree program or a  
15                  2-year certificate program; or

16                  “(ii) is a proprietary institution that  
17                  offers a 2-year associate degree program.

18                  “(B) JUNIOR FACULTY.—The term ‘junior  
19                  faculty’ means a faculty member who was  
20                  awarded a doctorate less than 10 years before  
21                  receipt of an award from the grant program de-  
22                  scribed in paragraph (2)(B).

23                  “(C) JUNIOR OR COMMUNITY COLLEGE.—  
24                  The term ‘junior or community college’ has the  
25                  meaning given the term in section 312 of the



1 Higher Education Act of 1965 (20 U.S.C.  
2 1058).

3 “(D) EPSCoR UNIVERSITY.—The term  
4 ‘EPSCoR university’ means an institution of  
5 higher education located in a State eligible to  
6 participate in the program defined in section  
7 502 of the America COMPETES Reauthoriza-  
8 tion Act of 2010 (42 U.S.C. 1862p note).

9 “(E) HISTORICALLY BLACK COLLEGE OR  
10 UNIVERSITY.—The term ‘historically Black col-  
11 lege or university’ has the meaning given the  
12 term ‘part B institution’ in section 322 of the  
13 Higher Education Act of 1965 (20 U.S.C.  
14 1061).

15 “(F) MINORITY-SERVING INSTITUTION.—  
16 The term ‘minority-serving institution’ means a  
17 Hispanic-serving institution, an Alaska Native-  
18 serving institution, a Native Hawaiian-serving  
19 institutions, a Predominantly Black Institution,  
20 an Asian American and Native American Pa-  
21 cific Islander-serving institution, or a Native  
22 American-serving nontribal institution as de-  
23 scribed in section 371 of the Higher Education  
24 Act of 1965 (20 U.S.C. 1067q(a)).

1           “(G) TRIBAL COLLEGE OR UNIVERSITY.—  
2           The term ‘Tribal college or university’ has the  
3           meaning given such term in section 316 of the  
4           Higher Education Act of 1965 (20 U.S.C.  
5           1059c).”.

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