119TH CONGRESS
2D SESSION

S. _____

To require the Secretary of Energy to establish a program to strengthen the domestic science and engineering workforce through partnerships among institutions of higher education, National Laboratories, other Federal science agencies, and industry to support accelerated doctoral programs, and for other purposes.

IN THE SENATE OF THE UNITED STATES

Mr. WARNER introduced the following bill; which was read twice and referred to the Committee on _____

A BILL

To require the Secretary of Energy to establish a program to strengthen the domestic science and engineering workforce through partnerships among institutions of higher education, National Laboratories, other Federal science agencies, and industry to support accelerated doctoral programs, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

This Act may be cited as the ''Promoting High-skilled Doctoral Talent Act of 2026'' or the ''PHD Talent Act of 2026''.

SEC. 2. FINDINGS.

Congress finds the following:

(1) A persistent shortfall in the number of domestic students entering and completing science, technology, engineering, and mathematics doctoral programs impedes the capacity of the United States for global leadership in research excellence and technology innovation.

(2) Artificial intelligence, quantum information science, advanced computing, biotechnology, advanced energy systems, and other critical or emerging technologies are transforming scientific discovery and national competitiveness.

(3) A robust domestic science, technology, engineering, and mathematics talent pipeline capable of preparing scientists and engineers with expertise both within their scientific discipline and in the application of artificial intelligence and advanced computational methods is critical for maintaining a strong workforce across the United States research and technology development ecosystem, including the National Laboratories, other Federal science agencies, institutions of higher education, and industry.

(4) The Department of Energy maintains a unique scientific enterprise, including the National Laboratories, user facilities, advanced computing in-

frastructure, and partnerships with institutions of higher education and industry, positioning the Department of Energy to strengthen the domestic science and engineering workforce of the United States.

SEC. 3. DEFINITIONS.

In this Act:

(1) ACCELERATED DOCTORAL PROGRAM.—The term ''accelerated doctoral program'' means a program offered by an institution of higher education that—

(A) provides 1 or more pathways through which a student may complete a doctoral degree in a critical or emerging technology area in an accelerated timeframe;

(B) may include an integrated baccalaureate-to-doctorate pathway that—

(i) enables students participating in the program, while completing the baccalaureate degree portion of the program, to complete graduate-level coursework that—

(I) may be credited toward both the baccalaureate and graduate degree requirements, consistent with applicable accreditation requirements;

(II) makes a student's progression into the doctoral degree portion of the program contingent upon successful completion of specified milestones and admission into a graduate program of study;

(III) upon a participating student's successful completion of the baccalaureate degree portion of the program and the student's acceptance and transition into the doctoral degree portion of the program, provides funding to the student, which may be through a variety of opportunities, that covers not less than 3 years of the doctoral portion of the program; and

(IV) enables a student who is not accepted into, or does not complete, the doctoral degree portion of the program to earn a baccalaureate degree or a master's degree, based on the student's level of completion of the program; and

(ii) supports timely progression into the doctoral degree portion of the program; and

(C) incorporates structured professional development for each student participating in the program that includes—

(i) evidence-based research mentorship practices;

(ii) career development support;

(iii) opportunities for engagement and real-world experience through research rotations; and

(iv) education, training, and research rotations designed to develop dual competency.

(2) CRITICAL OR EMERGING TECHNOLOGY AREA.—The term ''critical or emerging technology area'' means any of the following areas:

(A) Advanced computing.

(B) Advanced engineering materials.

(C) Advanced gas turbine engine technologies.

(D) Advanced and networked sensing and signature management.

(E) Advanced manufacturing.

(F) Artificial intelligence.

(G) Biotechnologies.

(H) Clean energy generation and storage.

(I) Data privacy, data security, and cybersecurity technologies.

(J) Directed energy.

(K) Highly automated, autonomous, and uncrewed systems and robotics.

(L) Human-machine interfaces.

(M) Hypersonics.

(N) Integrated communication and networking technologies.

(O) Positioning, navigation, and timing technologies.

(P) Quantum information and enabling technologies.

(Q) Semiconductors and microelectronics.

(R) Space technologies and systems.

(S) Any additional area of study that the Secretary determines is a critical or emerging technology area.

(T) Any additional area of basic research that the Secretary determines would enable appropriate consideration related to the social sciences.

(3) DUAL COMPETENCY.—The term ''dual competency'' means the demonstrated competency of a student in—

(A) the student's primary science, technology, engineering, or mathematics discipline; and

(B) the application of artificial intelligence, advanced computing, data science, machine learning, or related computational methods to research in that discipline.

(4) NATIONAL LABORATORY.—The term ''National Laboratory'' has the meaning given the term in section 2 of the Energy Policy Act of 2005 (42 U.S.C. 15801).

(5) PARTICIPATING INSTITUTION.—The term ''participating institution'' means an institution of higher education (as defined in section 101(a) of the Higher Education Act of 1965 (20 U.S.C. 1001(a))) that enters into an agreement with the Secretary to participate in the Program.

(6) PROGRAM.—The term ''Program'' means the Department of Energy Strategic Scientific Workforce Program established under section 4(a).

(7) RESEARCH ROTATION.—The term ''research rotation'' means a structured research experience at

a National Laboratory, Department of Energy user facility, other Federal research facility, or participating industry research facility.

(8) SECRETARY.—The term ''Secretary'' means the Secretary of Energy, acting through the Under Secretary for Science.

SEC. 4. DEPARTMENT OF ENERGY STRATEGIC SCIENTIFIC WORKFORCE PROGRAM.

(a) IN GENERAL.—Not later than 1 year after the date of enactment of this Act, the Secretary shall establish a program, to be known as the ''Department of Energy Strategic Scientific Workforce Program'', to strengthen the domestic science and engineering workforce through grants awarded on a competitive basis to participating institutions to enable the participating institutions to establish, carry out, or support—

(1) accelerated doctoral programs;

(2) partnerships with National Laboratories;

(3) partnerships with industry; and

(4) other activities authorized under this section.

(b) APPLICATION.—A participating institution desiring a grant under the Program shall submit to the Secretary an application at such time, in such manner, and containing such information as the Secretary may require.

(c) SUPPORT AND ASSISTANCE.—Under the Program, the Secretary shall—

(1) offer workshops that help participating institutions—

(A) design the curriculum for an accelerated doctoral program supported under the Program; and

(B) develop institutional processes to align course credit mechanisms, financial aid, and academic policies for students in accelerated doctoral programs supported under the Program with relevant Federal guidelines and program and institution accreditation requirements; and

(2) consider ways to support the sustainability of the accelerated doctoral programs supported under the Program.

(d) PARTICIPATING INSTITUTIONS.—As a condition of participation in the Program, each participating institution shall—

(1) retain responsibility for admissions decisions, academic supervision, degree requirements, dissertation oversight, and the conferral of doctoral degrees;

(2) provide participating students with an academically rigorous doctoral education designed to reduce unnecessary time-to-degree while maintaining standards of academic excellence and research quality;

(3) provide education and training to develop dual competency;

(4) provide faculty mentorship, academic advising, and research support; and

(5) facilitate research rotations, as appropriate.

(e) PARTNERSHIP AUTHORITY.—

(1) IN GENERAL.—In carrying out the Program, the Secretary may enter into grants, cooperative agreements, memoranda of understanding, or other agreements with—

(A) participating institutions;

(B) National Laboratories;

(C) industry;

(D) nonprofit organizations;

(E) States; and

(F) such other entities as the Secretary determines to be appropriate.

(2) FINANCIAL AND IN-KIND CONTRIBUTIONS.—The Secretary may encourage and accept fi-

nancial or in-kind contributions to support activities carried out under the Program from—

(A) States;

(B) institutions of higher education;

(C) industry; and

(D) philanthropic organizations.

(f) PILOT FELLOWSHIP PROGRAMS.—

(1) IN GENERAL.—In order to facilitate the establishment or expansion of the Program, the Secretary may establish and administer 1 or more pilot fellowship programs to strengthen the domestic science and engineering workforce in critical or emerging technology areas and other scientific workforce priority areas identified by the Secretary.

(2) ACTIVITIES.—A pilot fellowship program established under this subsection may—

(A) support accelerated doctoral programs;

(B) provide financial assistance to participating institutions, potential participating institutions, and doctoral students;

(C) support the development of dual competency;

(D) facilitate research rotations;

(E) support mentorship and professional development; and

(F) include such other activities as the Secretary determines appropriate to carry out the purposes of this section.

(3) ELIGIBLE STUDENTS.—Students receiving financial assistance or any other direct assistance pursuant to a pilot fellowship program established under this subsection shall be citizens, nationals, or lawful permanent residents of the United States.

(g) REPORTS.—Not later than 1 year after the date of enactment of this Act, and annually thereafter, the Secretary shall submit to Congress a report regarding the Program, including longitudinal tracking of the students participating in accelerated doctoral programs supported under the Program to identify trends and analyze developments in such programs across the United States.

(h) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this Act $2,385,000,000 for the period of fiscal years 2028 through 2033.