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107TH CONGRESS
1ST SESSION

H. R. 3130

To provide for increasing the technically trained workforce in the United States.

IN THE HOUSE OF REPRESENTATIVES

OCTOBER 16, 2001

Mr. BOEHLERT (for himself, Mr. LARSON of Connecticut, Ms. HART, Mr. HONDA, and Mr. UDALL of Colorado) introduced the following bill; which was referred to the Committee on Science, and in addition to the Committee on Education and the Workforce, for a period to be subsequently determined by the Speaker, in each case for consideration fo such provisions as fall within the jurisdiction of the committee concerned

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A BILL

To provide for increasing the technically trained workforce in the United States.

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 ''Technology Talent Act of 2001''.

SEC. 2. FINDINGS; DEFINITIONS.

(a) FINDINGS.—Congress makes the following findings with respect to the value of the technically trained workforce to the United States:

(1) Studies show that about half of all United States post-World War II economic growth is a direct result of technological innovation, and science, engineering, and technology play a central role in the creation of new goods and services, new jobs, and new capital.

(2) The growth in the number of jobs requiring technical skills is projected to be more than 50 percent over the next decade.

(3) A workforce that is highly trained in science, mathematics, engineering, and technology is crucial to generating the innovation that drives economic growth.

(4) Outside of the biomedical sciences, the number of undergraduate degrees awarded in the science, mathematics, engineering, and technology disciplines has been flat or declining since 1987, despite rapid population growth and a significant increase in undergraduate enrollment over the same period.

(5) The demand for H–1B visas has increased over the past several years, suggesting that the

United States is not training a sufficient number of scientists and engineers.

(6) In international comparisons of 24-year olds, there have been shown to be fewer holders of natural science and engineering degrees in the United States than in Japan, South Korea, Taiwan, the United Kingdom, and Canada.

(7) Technological and scientific advancements hold significant potential for elevating the quality of life and the standard of living in the United States. The quality and quantity of such advancements are dependent on a technically trained workforce.

(8) Arresting the trends in reduced numbers of science and engineering graduates is not only imperative to maintaining our Nation's prosperity, it is also important for our national security.

(b) DEFINITIONS.—In this Act:

(1) COMMUNITY COLLEGE.—The term ''community college'' means an institution of higher education that provides not less than a 2-year program that is acceptable for full credit toward a bachelor's degree, including institutions receiving assistance under the Tribally Controlled Community College Assistance Act of 1978 (25 U.S.C. 1801 et seq.).

(2) DIRECTOR.—The term ''Director'' means the Director of the National Science Foundation.

(3) INSTITUTION OF HIGHER EDUCATION.—The term ''institution of higher education'' has the meaning given the term in section 101(a) of the Higher Education Act of 1965 (20 U.S.C. 1001(a)).

SEC. 3. DEMONSTRATION PROGRAM AUTHORIZED.

(a) IN GENERAL.—The Director is authorized to award grants, on a competitive basis to institutions of higher education with science, mathematics, engineering, or technology programs to enable the institutions to increase the number of students studying and receiving associates or bachelor's degrees in established or emerging fields within science, mathematics, engineering, and technology.

(b) REQUIREMENTS.—

(1) NUMBER.—The Director shall award not fewer than 10 grants under this Act each year contingent upon available funds.

(2) DURATION.—Grants under this Act shall be awarded for a period of 3 years, with the final year of funding contingent upon the Director's determination that satisfactory progress has been made by the institution or community college during the first 2 years of the grant period.

(3) PRINCIPAL INVESTIGATOR.—At least 1 principal investigator must be in a position of administrative leadership at the institution of higher education. Multiple principal investigators shall be permitted.

(4) SUBSEQUENT GRANTS.—Institutions of higher education that have received grants under this Act shall be eligible to compete for subsequent grants to enable the institutions to continue making progress toward program goals after the initial grant period ends. In reviewing the grant application from such an institution, the Director is encouraged to consider—

(A) the progress the institution has made, using grant funds received under this Act, toward achieving program goals; and

(B) whether the successive grant application of the institution includes a novel strategy for achieving subsequent goals.

(5) INCREASES.—

(A) INSTITUTIONS OF HIGHER EDUCATION WITH BACHELOR'S DEGREE PROGRAMS.—An institution of higher education that awards bachelor's degrees and desires to receive a grant under this Act shall propose specific increases

in the number of students who are United States citizens or permanent resident aliens, obtaining bachelor's degrees at the institution in established or emerging fields within science, mathematics, engineering, or technology.

(B) COMMUNITY COLLEGES.—A community college that desires to receive a grant under this Act shall propose specific increases in the number of students who are United States citizens or permanent resident aliens, obtaining associate degrees in established or emerging fields within science, mathematics, engineering, or technology, and are encouraged to facilitate the enrollment of such students in bachelor's degree programs.

(6) PEER REVIEW OF APPLICATIONS.—The Director shall review grant applications under this Act on the basis of a peer review process.

(7) PRIORITY.—The Director is encouraged to give priority in awarding grants to institutions of higher education that enable such institutions to carry out programs—

(A) that increase the number of students studying and receiving associates and bachelor's degrees in established or emerging fields within

science, mathematics, engineering, or technology where there is a specific industry need or where the number of graduates has been flat or declining in recent years; and

(B) that draw on previous and existing efforts with demonstrated success in improving undergraduate learning and teaching, including those efforts funded by Federal grants from the National Science Foundation or other agencies.

(8) NATIONAL SCIENCE FOUNDATION SCIENCE AND ENGINEERING TALENT EXPANSION CENTER.—An institution of higher education that is awarded a grant under this Act shall be known as a ''National Science Foundation Science and Engineering Talent Expansion Center''.

SEC. 4. POLICY ELEMENTS.

In soliciting and evaluating grant applications from institutions of higher education under this Act, the Director shall consider supporting—

(1) programs that specifically aim to increase the number of traditionally underrepresented students (low-income, ethnic minorities, and women) in science, mathematics, engineering, or technology, such as mentoring programs;

(2) programs that expand the capacity of institutions of higher education to incorporate current advances in science and technology into the undergraduate learning environment;

(3) bridge programs that enable additional preparation for students otherwise not fully prepared to succeed in the study and practice of science, mathematics, engineering, and technology, including programs targeted at traditionally underrepresented groups in such disciplines;

(4) programs including interdisciplinary approaches to undergraduate science, mathematics, engineering, and technology education;

(5) programs that focus directly on the quality of student learning, including those that encourage—

(A) high-caliber teaching, including enabling faculty to spend additional time teaching participating students in smaller class settings, particularly in the laboratory environment, by, for example, providing summer salary or other additional salary for faculty members or stipends for students;

(B) opportunities to develop new pedagogical approaches including the development of

web-based course strategies, distributed and collaborative digital teaching tools, or interactive course modules; and

(C) screening and training of teaching assistants;

(6) programs that—

(A) facilitate student exposure to potential careers, including cooperative programs with industry or government that place students in internships as early as the summer following their first year of study;

(B) provide part-time employment in industry during the school year; or

(C) provide opportunities for undergraduates to participate in industry or government sponsored research;

(7) programs that assist institutions of higher education in States that participate in the Experimental Program to Stimulate Competitive Research (EPSCoR) to broaden the science, engineering, mathematics, and technology student base or increase retention in these fields;

(8) programs to encourage undergraduate research on- or off-campus;

(9) programs that provide financial incentives to students entering and persisting in the study of science, mathematics, engineering, or technology;

(10) programs that leverage the Federal investment by providing matching funds from industry, from State or local government sources, or from private sources; and

(11) other innovative approaches to achieving program goals.

SEC. 5. EVALUATION AND DISSEMINATION OF INFORMATION.

(a) EVALUATION.—The Director, in consultation with the advisory committee established under section 7—

(1) shall evaluate, at least once each year, the progress of institutions of higher education that are assisted under this Act in achieving the goal of increasing the number of students obtaining degrees in science, mathematics, engineering, or technology; and

(2) shall award at least 1 grant or contract to an independent evaluative organization to develop metrics and evaluate the program approaches assisted under this Act that are most effective, including those most cost-effective, in increasing the number of students obtaining degrees in such disciplines.

(b) DISSEMINATION OF INFORMATION.—The Director, at least once each year, shall disseminate information on the activities and the results of the program assisted under this Act to participating institutions of higher education and other interested institutions of higher education.

SEC. 6. REPORTS.

(a) LIST.—Not later than 90 days after the date of enactment of this Act, the Director shall develop, and disseminate to institutions of higher education, a list of examples of existing institutional and government efforts relevant to the program assisted under this Act.

(b) INTERIM PROGRESS REPORT.—At the end of the second year of the program assisted under this Act, the Director shall submit to Congress an interim progress report that includes an evaluation of programmatic features assisted under this Act that are most effective in increasing the number of students studying science, mathematics, engineering, or technology.

(c) FINAL REPORT.—The Director shall submit to Congress a final report in 2007 regarding activities assisted under this Act, including—

(1) an evaluation of the features described in subsection (b);

(2) the number of degrees granted to students under this Act; and

(3) information on the number of graduates assisted under this Act who elected to pursue graduate degrees, and other career paths taken by individuals assisted under this Act.

SEC. 7. ADVISORY COMMITTEE.

The Director shall establish an advisory committee, that includes significant representation from industry and academic leaders, for the grant program assisted under this Act. The advisory committee shall—

(1) assist the Director in securing active industry, and State and local government, participation in the program assisted under this Act;

(2) recommend to the Director new innovative approaches to furthering the mission of the program; and

(3) critique and advise the Director regarding program metrics, implementation and performance of the program, and program progress reports.

SEC. 8. AUTHORIZATION OF APPROPRIATIONS; FUNDING.

(a) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to the National Science Foundation to carry out this Act—

(1) $25,000,000 for fiscal year 2002; and

(2) such sums as may be necessary for each subsequent fiscal year.

(b) FUNDING.—In addition to any other purposes for which such funds are available, any funds made available to the Director under section 286(s) of the Immigration and Nationality Act (8 U.S.C. 1356(s)) shall be available to carry out this Act.

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