particularly in high-need and rural schools; and

(B) if deemed effective, a proposal to Congress for permanent implementation of the pilot program.

(9) Sunset

The authority to carry out this subsection shall terminate on the date that is 15 years after August 9, 2022.

(10) Authorization of appropriations

There are authorized to be appropriated $60,000,000 for each of fiscal years 2023 through 2032 to carry out this subsection.

(Pub. L. 117–167, div. B, title III, §10311, Aug. 9, 2022, 136 Stat. 1510.)

Editorial Notes

CODIFICATION

Section is comprised of section 10311 of div. B of Pub. L. 117–167. Subsec. (b) of section 10311 of div. B of Pub. L. 117–167 amended section 1862q of this title.

§ 18992. Undergraduate STEM education

(a) Research on STEM education and workforce needs

The Director shall make awards, on a competitive basis, to four-year institutions of higher education or nonprofit organizations (or consortia of such institutions or organizations) to support research and development activities to—

(1) encourage greater collaboration and coordination between institutions of higher education and industry to enhance education, foster hands-on learn experiences, and improve alignment with workforce needs;

(2) understand the current composition of the STEM workforce and the factors that influence growth, retention, and development of that workforce;

(3) increase the size, diversity, capability, and flexibility of the STEM workforce; and

(4) increase dissemination and widespread adoption of effective practices in undergraduate education and workforce development.

(b) Omitted

(c) Innovations in STEM education at community colleges

(1) In general

The Director shall make awards on a merit-reviewed, competitive basis to institutions of higher education or nonprofit organizations (or consortia of such institutions or organizations) to advance research on the nature of learning and teaching at community colleges and to improve outcomes for students who enter the workforce upon completion of their STEM degree or credential or transfer to 4-year institutions, including by—

(A) examining how to scale up successful programs at community colleges that are improving student outcomes in foundational STEM courses;

(B) supporting research on effective STEM teaching practices in community college settings;

(C) designing and developing new STEM curricula;

(D) providing STEM students with hands-on training and research experiences, internships, and other experiential learning opportunities;

(E) increasing access to high quality STEM education through new technologies;

(F) re-skilling or up-skilling incumbent workers for new STEM jobs;

(G) building STEM career and seamless transfer pathways; and

(H) developing novel mechanisms to identify and recruit talent into STEM programs, in particular talent from groups historically underrepresented in STEM.

(2) Partnerships

In carrying out activities under this subsection, the Director shall encourage applications to develop, enhance, or expand cooperative STEM education and training partnerships between institutions of higher education, industry, and labor organizations.

(d) Improving access to STEM education at career and technical education institutions

(1) In general

The Director shall make awards, on a competitive basis, to institutions of higher education (including postsecondary vocational institutions) to support career and technical education in STEM and computer science related fields.

(2) Priority

In making awards under this subsection, the Director shall give priority to institutions that demonstrate effective strategies to recruit and provide career and technical education to veterans and members of the Armed Forces transitioning to the private sector workforce.

(3) Career and technical education defined

In this subsection, the term ''career and technical education'' has the meaning given that term in section 2302 of title 20.

(e) Course-based undergraduate research experiences

(1) In general

The Director shall carry out a 4-year pilot program under which the Director shall make awards, on a competitive basis, to institutions of higher education and nonprofit organizations (or consortia of such institutions or organizations) to establish a total of not fewer than five Centers to develop and scale up successful models for providing undergraduate students with hands-on, course-based research experiences.

(2) Use of funds

Awards made under this paragraph shall be used to—

(A) develop, assess, and disseminate models for providing undergraduate students with course-based research experiences across STEM disciplines and education levels;

(B) identify and address opportunities and challenges in facilitating implementation

across a broad range of institution types, including historically Black colleges and universities, Tribal Colleges or Universities, minority serving institutions and community colleges;

(C) identify and develop best practices to address barriers for faculty, including institutional culture, resources, and incentive structures;

(D) identify and address factors that may facilitate or discourage participation by students from all backgrounds;

(E) provide faculty with curriculum, professional development, training, networking opportunities, and other support to enable the development, adaptation, or expansion of a course-based research experience; and

(F) collect data and carry out research to evaluate the impacts of course-based undergraduate research experiences on the STEM workforce.

(3) Partnerships

In making awards under this paragraph, the Director shall consider the extent to which the proposed Center will establish partnerships among multiple types of academic institutions, including community colleges, emerging research institutions, EPSCoR institutions, historically Black colleges and universities, Tribal Colleges or Universities, and minority-serving institutions, the private sector, and other relevant stakeholders in supporting programs and activities to facilitate faculty training and the widespread and sustained implementation of promising, evidence-based practices, models, programs, and curriculum.

(4) Report

Not later than 180 days after the date on which the pilot program is completed, the Director shall submit to Congress a report that includes—

(A) an assessment, that includes feedback from the research community, of the effectiveness of the pilot program in increasing the number, diversity, and workforce readiness of STEM graduates; and

(B) if determined to be effective, a plan for permanent implementation of the pilot program.

(Pub. L. 117–167, div. B, title III, §10312, Aug. 9, 2022, 136 Stat. 1516.)

Editorial Notes

CODIFICATION

Section is comprised of section 10312 of div. B of Pub. L. 117–167. Subsec. (b) of section 10312 of div. B of Pub. L. 117–167 amended section 1862i of this title. Subsec. (f) of section 10312 of div. B of Pub. L. 117–167 amended sections 1862h, 1862i, and 1862j of this title.

§ 18993. Graduate STEM education

(a) Mentoring and professional development

(1) Mentoring plans

(A) Omitted

(B) Evaluation

Not later than 120 days after August 9, 2022, the Director shall enter into an agreement with a qualified independent organization to evaluate the effectiveness of the postdoctoral mentoring plan requirement for improving mentoring for Foundation-supported postdoctoral researchers.

(2) Career exploration

(A) In general

The Director shall make awards, on a competitive basis, to institutions of higher education and nonprofit organizations (or consortia of such institutions or organizations) to develop innovative approaches for facilitating career exploration of academic and nonacademic career options and for providing opportunity-broadening experiences, including work-integrated opportunities, for graduate students and postdoctoral scholars that can then be considered, adopted, or adapted by other institutions and to carry out research on the impact and outcomes of such activities.

(B) Review of proposals

In selecting award recipients under this subparagraph, the Director shall consider, at a minimum—

(i) the extent to which the administrators of the institution are committed to making the proposed activity a priority; and

(ii) the likelihood that the institution or organization will sustain or expand the proposed activity effort beyond the period of the award.

(3) Development plans

The Director shall require that annual project reports for awards that support graduate students and postdoctoral scholars include certification by the principal investigator that each graduate student and postdoctoral scholar receiving substantial support from such award, as determined by[1] has developed and annually updated an individual development plan to map educational goals, career exploration, and professional development.

(4) Professional development supplement

The Director shall carry out a five-year pilot initiative to award up to 2,500 administrative supplements of up to $2,000 to existing research awards annually, on a competitive basis, to support professional development experiences for graduate students and postdoctoral researchers who receive a substantial portion of their support under such award, as determined by the Director. Not more than 10 percent of supplements awarded under this subparagraph[2] may be used to support professional development experiences for postdoctoral researchers.

(5) Graduate education research

The Director shall make awards, on a competitive basis, to institutions of higher education or nonprofit organizations (or consortia of such institutions or organizations) to sup-

[1] So in original.

[2] So in original. Probably should be ''paragraph''.