

the recruitment, retention, or advancement of groups historically underrepresented in STEM studies and careers; and

(B) providing educational opportunities, including workshops, for STEM professionals to learn about current research on effective practices for unbiased recruitment, evaluation, and promotion of undergraduate and graduate students and research personnel.

(2) Establishment of policies

Consistent with the guidance developed under paragraph (1)—

(A) The Director of the National Science Foundation, in consultation with the heads of Federal research agencies, shall develop a policy that—

(i) applies to, at a minimum, doctoral degree granting institutions that receive Federal research funding; and

(ii) requires each such institution, not later than 3 years after August 9, 2022, and to the extent practicable, to report to the Director of the National Science Foundation on activities and policies developed and implemented based on the guidance disseminated under paragraph (1); and

(B) each Federal research agency with a Federal laboratory shall maintain or develop and implement practices and policies for the purposes described in paragraph (1) for such laboratory and, not later than three years after August 9, 2022, each Federal laboratory shall report to the head of such agency on such practices and policies.

(b) Report to Congress

Not later than four years after August 9, 2022, the Director of the National Science Foundation shall submit a report to Congress that includes a summary and analysis of the types and frequency of activities and policies developed and carried out under subsection (a) based on the reports submitted under paragraph (2) of such subsection.

(Pub. L. 117–167, div. B, title V, §10505, Aug. 9, 2022, 136 Stat. 1612.)

§ 19156. Existing activities

A Federal research agency may satisfy requirements under this part through activities and programs in existence as of August 9, 2022.

(Pub. L. 117–167, div. B, title V, §10506, Aug. 9, 2022, 136 Stat. 1612.)

§ 19157. Merit review

Nothing in this part may be construed as altering any intellectual or broader impacts criteria at Federal research agencies for evaluating award applications.

(Pub. L. 117–167, div. B, title V, §10508, Aug. 9, 2022, 136 Stat. 1613.)

Editorial Notes

REFERENCES IN TEXT

This part, referred to in text, was in the original “this subtitle”, meaning subtitle A (§§10501–10510) of

title V of div. B of Pub. L. 117–167, Aug. 9, 2022, 136 Stat. 1609, which is classified principally to this part. For complete classification of subtitle A to the Code, see Tables.

§ 19158. Definition

In this part, the term “Director” means the Director of the Office of Science and Technology Policy.

(Pub. L. 117–167, div. B, title V, §10510, Aug. 9, 2022, 136 Stat. 1613.)

PART B—RURAL STEM EDUCATION RESEARCH

§ 19171. Definition

In this part, the term “Director” means the Director of the National Science Foundation.

(Pub. L. 117–167, div. B, title V, §10511, Aug. 9, 2022, 136 Stat. 1613.)

§ 19172. National Science Foundation rural STEM activities

(a) Preparing rural STEM educators

(1) In general

The Director shall make awards on a merit-reviewed, competitive basis to institutions of higher education or nonprofit organizations (or a consortium thereof) for research and development activities to advance innovative approaches to support and sustain high-quality STEM teaching in rural schools.

(2) Use of funds

(A) In general

Awards made under this subsection shall be used for the research and development activities referred to in paragraph (1), which may include—

(i) engaging rural educators, principals, or other school leaders of students in pre-kindergarten through grade 12 in professional learning opportunities to enhance STEM knowledge, including computer science, and develop best practices;

(ii) supporting research on effective STEM teaching and school leadership practices in rural settings, including the use of rubrics and mastery-based grading practices to assess student performance when employing the transdisciplinary teaching approach for STEM disciplines;

(iii) designing and developing pre-service and in-service training resources to assist such rural educators, principals, and other school leaders in adopting transdisciplinary teaching practices across STEM courses;

(iv) coordinating with local partners to adapt STEM teaching practices to leverage local, natural, and community assets in order to support in-place learning in rural areas;

(v) providing hands-on training and research opportunities for rural educators described in clause (i) at Federal laboratories or institutions of higher education, or in industry;

(vi) developing training and best practices for educators who teach multiple grade levels within a STEM discipline;

(vii) designing and implementing professional development courses and experiences, including mentoring, for rural educators, principals, and other school leaders described in clause (i) that combine face-to-face and online experiences; and

(viii) any other activity the Director determines will accomplish the goals of this paragraph.

(B) Rural stem collaborative

The Director shall establish a pilot program of regional cohorts in rural areas that will provide peer support, mentoring, and hands-on research experiences for rural STEM educators, principals, and other school leaders of students in prekindergarten through grade 12, in order to build an ecosystem of cooperation among educators, principals, other school leaders, researchers, academia, and local industry.

(b) Broadening participation of rural students in STEM

(1) In general

The Director shall make awards on a merit-reviewed, competitive basis to institutions of higher education or nonprofit organizations (or a consortium thereof) for—

(A) research and development of programming to identify the barriers rural students face in accessing high-quality STEM education; and

(B) development of innovative solutions to improve the participation and advancement of rural students in prekindergarten through grade 12 in STEM studies.

(2) Use of funds

(A) In general

Awards made under this subsection shall be used for the research and development activities referred to in paragraph (1), which may include—

(i) developing partnerships with community colleges to offer advanced STEM course work, including computer science, to rural high school students;

(ii) supporting research on effective STEM practices in rural settings;

(iii) implementing a school-wide STEM approach, including preparation and support for principals and other school leaders;

(iv) improving the Foundation's Advanced Technology Education program's coordination and engagement with rural communities;

(v) collaborating with existing community partners and networks, such as the Cooperative Extension System services and extramural research programs of the Department of Agriculture and youth serving organizations like 4-H, after school STEM programs, and summer STEM programs, to leverage community resources and develop place-based programming;

(vi) connecting rural school districts and institutions of higher education, to improve precollegiate STEM education and engagement;

(vii) supporting partnerships that offer hands-on inquiry-based science activities, including coding, and access to lab resources for students studying STEM in prekindergarten through grade 12 in a rural area;

(viii) evaluating the role of broadband connectivity and its associated impact on the STEM and technology literacy of rural students;

(ix) building capacity to support extra-curricular STEM programs in rural schools, including mentor-led engagement programs, STEM programs held during non-school hours, STEM networks, makerspaces, coding activities, and competitions;

(x) creating partnerships with local industries and local educational agencies to tailor STEM curricula and educational experiences to the needs of a particular local or regional economy; and

(xi) any other activity the Director determines will accomplish the goals of this paragraph.

(c) Application

An applicant seeking an award under subsection (a) or (b) shall submit an application at such time, in such manner, and containing such information as the Director may require. The application may include the following:

(1) A description of the target population to be served by the research activity or activities for which such award is sought.

(2) A description of the process for recruitment and selection of students, educators, principals, and other school leaders, or schools from rural areas to participate in such activity or activities.

(3) A description of how such activity or activities may inform efforts to promote the engagement and achievement of rural students in prekindergarten through grade 12 in STEM studies.

(4) In the case of a proposal consisting of a partnership or partnerships with one or more rural schools and one or more researchers, a plan for establishing a sustained partnership that is jointly developed and managed, draws from the capacities of each partner, and is mutually beneficial.

(d) Partnerships

In making awards under subsection (a) or (b), the Director shall—

(1) encourage applicants which, for the purpose of the activity or activities funded through the award, include or partner with a nonprofit organization or an institution of higher education (or a consortium thereof) that has extensive experience and expertise in increasing the participation of rural students in prekindergarten through grade 12 in STEM;

(2) encourage applicants which, for the purpose of the activity or activities funded through the award, include or partner with a consortium of rural schools or rural school districts; and

(3) encourage applications which, for the purpose of the activity or activities funded through the award, include commitments from

school principals, other school leaders, and administrators to making reforms and activities proposed by the applicant a priority.

(e) Evaluations

All proposals for awards under subsections (a) and (b) shall include an evaluation plan that includes the use of outcome-oriented measures to assess the impact and efficacy of the award. Each recipient of an award under this subsection shall include results from these evaluative activities in annual and final projects.

(f) Accountability and dissemination

(1) Evaluation required

The Director shall evaluate the portfolio of awards made under subsections (a) and (b). Such evaluation shall—

(A) use a common set of benchmarks and tools to assess the results of research conducted under such awards and identify best practices; and

(B) to the extent practicable, integrate the findings of research resulting from the activity or activities funded through such awards with the findings of other research on rural students' pursuit of degrees or careers in STEM.

(2) Report on evaluations

Not later than 180 days after the completion of the evaluation under paragraph (1), the Director shall submit to Congress and make widely available to the public a report that includes—

(A) the results of the evaluation; and

(B) any recommendations for administrative and legislative action that could optimize the effectiveness of the awards made under this subsection.

(g) Report by Committee on Equal Opportunities in Science and Engineering

As part of the first report required by section 1885c(e) of this title transmitted to Congress after August 9, 2022, the Committee on Equal Opportunities in Science and Engineering, in consultation with the Chief Diversity Officer of the National Science Foundation, shall include—

(1) a description of past and present policies and activities of the Foundation to encourage full participation of students in rural communities in science, mathematics, engineering, and computer science fields;

(2) an assessment of trends in participation of rural students in prekindergarten through grade 12 in Foundation activities; and

(3) an assessment of the policies and activities of the Foundation, along with proposals for new strategies or the broadening of existing successful strategies towards facilitating the goal of increasing participation of rural students in prekindergarten through grade 12 in Foundation activities.

(h) Coordination

In carrying out this subsection, the Director shall, for purposes of enhancing program effectiveness and avoiding duplication of activities, consult, cooperate, and coordinate with the programs and policies of other relevant Federal agencies.

(i) Authorization of appropriations

There are authorized to be appropriated to the Director—

(1) \$8,000,000 to carry out the activities under subsection (a) for each of fiscal years 2023 through 2027; and

(2) \$12,000,000 to carry out the activities under subsection (b) for each of fiscal years 2023 through 2027.

(Pub. L. 117-167, div. B, title V, §10512, Aug. 9, 2022, 136 Stat. 1613.)

§ 19173. Opportunities for online education

(a) In general

The Director shall make competitive awards to institutions of higher education or nonprofit organizations (or a consortium thereof, which may include a private sector partner) to conduct research on online STEM education courses for rural communities.

(b) Research areas

The research areas eligible for funding under this subsection shall include—

(1) evaluating the learning and achievement of rural students in prekindergarten through grade 12 in STEM subjects;

(2) understanding how computer-based and online professional development courses and mentor experiences can be integrated to meet the needs of educators, principals, and other school leaders of rural students in prekindergarten through grade 12;

(3) combining computer-based and online STEM education and training with mentoring and other applied learning arrangements;

(4) leveraging online programs to supplement STEM studies for rural students that need physical and academic accommodation; and

(5) any other activity the Director determines will accomplish the goals of this subsection.

(c) Evaluations

All proposals for awards under this section shall include an evaluation plan that includes the use of outcome-oriented measures to assess the impact and efficacy of the award. Each recipient of an award under this subsection shall include results from these evaluative activities in annual and final projects.

(d) Accountability and dissemination

(1) Evaluation required

The Director shall evaluate the portfolio of awards made under this subsection. Such evaluation shall—

(A) use a common set of benchmarks and tools to assess the results of research conducted under such awards and identify best practices; and

(B) to the extent practicable, integrate findings from activities carried out pursuant to research conducted under this section, with respect to the pursuit of careers and degrees in STEM, with those activities carried out pursuant to other research on serving rural students and communities.

(2) Report on evaluations

Not later than 180 days after the completion of the evaluation under paragraph (1), the Di-