

Editorial Notes

REFERENCES IN TEXT

The Commercial Engagement Through Ocean Technology Act of 2018, referred to in subsec. (b), is Pub. L. 115-394, Dec. 21, 2018, 132 Stat. 5281, also known as the CENOTE Act of 2018, which is classified generally to chapter 54 (§4101 et seq.) of Title 33, Navigation and Navigable Waters. For complete classification of this Act to the Code, see Short title note set out under section 4101 of Title 33 and Tables.

§ 19063. Leveraging international expertise in research

The Director shall explore and advance opportunities for leveraging international capabilities and resources that align with the Foundation and United States research community priorities and have the potential to benefit United States prosperity, security, health, and well-being, including through binational research and development organizations and foundations and by sending teams of Foundation scientific staff for site visits of scientific facilities and agencies in other countries. The Director shall establish and implement policies, including through any research security training requirements, to mitigate the potential risks of such interactions, including risks to the protection of intellectual property and the risk of undue foreign influence on research.

(Pub. L. 117-167, div. B, title III, §10354, Aug. 9, 2022, 136 Stat. 1562.)

§ 19064. Biological research collections**(a) In general**

The Director shall continue to support databases, tools, methods, and other activities that secure and improve existing physical and digital biological research collections, improve the accessibility of collections and collection-related data for research and educational purposes, develop capacity for curation and collection management, and to transfer ownership of collections that are significant to the biological research community, including to museums and universities.

(b) Specimen management plan

In consultation with other relevant Federal research agencies, and as the Director determines is appropriate, the Director shall require that proposals submitted to the Foundation for funding for research that involves collecting or generating specimens include, as part of the data management plan under section 19053 of this title, a description of how the specimens and associated data will be accessioned into and maintained in an established biological collection.

(c) Action Center for Biological Collections

In coordination with other relevant Federal research agencies, as appropriate, the Director shall make awards on a competitive basis to institutions of higher education or non-profit organizations (or consortia of such institutions or organizations) to facilitate coordination and data sharing among communities of practice for research, education, workforce training, evaluation, and business model development, including

by establishing an Action Center for Biological Collections.

(Pub. L. 117-167, div. B, title III, §10355, Aug. 9, 2022, 136 Stat. 1562.)

§ 19065. Clean water research and technology acceleration

The Director shall make awards on a competitive, merit-reviewed basis to institutions of higher education or non-profit organizations (or consortia of such institutions or organizations) to—

(1) support transdisciplinary research to significantly advance our understanding of water availability, quality, and dynamics and the impact of human activity and a changing climate on urban and rural water and wastewater systems, including in low-income, underserved, and disadvantaged communities;

(2) develop, pilot, and deploy innovative technologies, systems, and other approaches to identifying and addressing challenges that affect water availability, quality, and security, including through direct engagement with affected communities and partnerships with the private sector, State, territorial, Tribal, and local governments, non-profit organizations and water management professionals; and

(3) grow the scientific workforce capable of studying and managing water and wastewater systems and of conducting wastewater surveillance, through education, training, and other professional development.

(Pub. L. 117-167, div. B, title III, §10356, Aug. 9, 2022, 136 Stat. 1563.)

§ 19066. Technology and behavioral science research**(a) In general**

The Director shall make awards on a merit-reviewed, competitive basis for research and development to—

(1) increase understanding of social media and consumer technology access and use patterns and related mental health, behavioral, and substance use disorder issues, particularly for children and adolescents; and

(2) explore the role of social media and consumer technology in rising rates of mental health and substance use disorder issues, including within communities experiencing long-term economic distress.

(b) Coordination to avoid duplication

In making awards under this subsection, the Director shall, for purposes of avoiding duplication of activities and research, consult, collaborate, and coordinate with the heads of other relevant Federal departments and agencies, including the Department of Health and Human Services.

(Pub. L. 117-167, div. B, title III, §10357, Aug. 9, 2022, 136 Stat. 1563.)

§ 19067. Critical minerals mining research and development

(a) Critical minerals mining research and development at the Foundation

(1) In general

In order to support supply chain resiliency, 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 support basic research that will accelerate innovation to advance critical minerals mining strategies and technologies for the purpose of making better use of domestic resources and eliminating national reliance on minerals and mineral materials that are subject to supply disruptions.

(2) Use of funds

Activities funded by an award under this section may include—

(A) advancing mining research and development activities to develop new mapping and mining technologies and techniques, including advanced critical mineral extraction and production, separation, alloying, or processing techniques and technologies that can decrease energy intensity to improve existing or to develop new supply chains of critical minerals, and to yield more efficient, economical, and environmentally benign mining practices;

(B) advancing critical mineral processing research activities to improve separation, alloying, manufacturing, or recycling techniques and technologies that can decrease the energy intensity, waste, potential environmental impact, and costs of those activities;

(C) conducting long-term earth observation of reclaimed mine sites, including the study of the evolution of microbial diversity at such sites;

(D) examining the application of artificial intelligence for geological exploration of critical minerals, including what size and diversity of data sets would be required;

(E) examining the application of machine learning for detection and sorting of critical minerals, including what size and diversity of data sets would be required;

(F) conducting detailed isotope studies of critical minerals and the development of more refined geologic models;

(G) improved understanding of the geological and geochemical processes through which critical minerals form and are concentrated into economically viable deposits; or

(H) providing training and research opportunities to undergraduate and graduate students to prepare the next generation of mining engineers and researchers.

(3) Existing programs

The Director shall ensure awards made under this subsection are complementary and not duplicative of existing programs across the Foundation and Federal Government.

(b) Critical Materials Interagency Subcommittee

(1) In general

The Critical Minerals Subcommittee of the National Science and Technology Council (referred to in this section as the “Subcommittee”), shall coordinate Federal science and technology efforts to ensure secure, reliable, and environmentally sustainable supplies of critical materials to the United States.

(2) Purposes

The purposes of the Subcommittee shall be—

(A) to advise and assist the National Science and Technology Council, including the Committee on Homeland and National Security, on United States policies, procedures, and plans as it relates to critical materials, including—

(i) Federal research, development, and commercial application efforts to minimize the environmental impacts of methods for extractions, concentration, separation and purification of conventional, secondary, and unconventional sources of critical materials;

(ii) efficient use, substitution, and reuse of critical materials;

(iii) the critical materials workforce of the United States; and

(iv) United States private industry investments in innovation and technology transfer from federally funded science and technology;

(B) to identify emerging opportunities, stimulate international cooperation, and foster the development of secure and reliable supply chains of critical materials and establish scenario modeling systems for supply problems of critical materials and energy critical materials;

(C) to ensure the transparency of information and data related to critical materials; and

(D) to provide recommendations on coordination and collaboration among the research, development, and deployment programs and activities of Federal agencies to promote a secure and reliable supply of critical materials necessary to maintain national security, economic well-being, public health, and industrial production.

(3) Responsibilities

In carrying out this subsection, the Subcommittee may, taking into account the findings and recommendations of relevant advisory committees—

(A) provide recommendations on how Federal agencies may improve the topographic, geologic, and geophysical mapping of the United States and improve the discoverability, accessibility, and usability of the resulting and existing data, to the extent permitted by law and subject to appropriate limitation for purposes of privacy and security;

(B) assess the progress towards developing critical materials recycling and reprocessing technologies, and technological alternatives to critical materials;

(C) establish a mechanism for the coordination and evaluation of Federal programs