Oportunidades de Fondos Externos
Vicepresidencia de Recursos Externos
ACADEMIC YEAR 2022 – 23 / VOLUME XVII   **JUNE 28, 2023**

Universidad de Puerto Rico
LA MEJOR EDUCACIÓN A TU ALCANCE

UPR external funding success is of utmost importance to strengthen the connection between its investigators/faculty and funding entities who have the potential to sponsor their research and academic endeavors. This publication has been developed in order to summarize funding opportunities and promote the participation of faculty and collaborative research groups in their intent to apply for external funds. Such efforts are aligned with the UPR Strategic Plan 2017-2022: A New Era of Innovation and Transformation for Student Success; Certification 50 (2016-2017) of the Governing Board, December 19, 2016. Strategic Area: Research and Creative Work. Goal 2: Increase Applications for and awards of external funds for research and creative work.

SELECTED FUNDING OPPORTUNITIES

This is a selection of identified funding opportunities for the period ending 06/28/2023 and is in no way all-inclusive of funding opportunities available. Further information has been shared with External Resource Coordinators and Research Coordinators at each UPR campus by e-mail.

INDEX

1. **Behavioral Health Workforce Education and Training- Children, Adolescents, and Young Adults (BHWET-CAY) Program for Professionals, HRSA**

Application Deadlines: July 14, 2023
Award Amounts: up to $530,000

The purpose of the BHWET-CAY Program is to increase the supply and distribution of behavioral health providers in rural and underserved communities to address the behavioral health needs of children, adolescents, and young adults (ages 16-25). The program aims to address specific bottlenecks in recruiting and training behavioral health professionals including by providing stipends to support trainees during their clinical/experiential training and by increasing the supply of and training for clinical supervisors overseeing trainees.

The BHWET-CAY Program will support training that focuses on providing identification, assessment and treatment of behavioral health conditions for these vulnerable populations. It will support psychoeducation training to trainees, clinical supervisors, and staff to reduce barriers to behavioral health care for CAY, including stigma and inequity.

Program Goals:
1. Establishing training opportunities (i.e., field placements, internships, etc.) for trainees in community-based settings serving children, adolescents, and young adults, prioritizing settings in underserved and rural communities.
2. Increasing the number of clinical supervisors for behavioral health professional trainees working with children, adolescents, and young adults and enhancing training opportunities for new and existing faculty and clinical supervisors focused on the behavioral health needs of children, adolescents, and young adults.
3. Providing assistance and supports to connect graduates with employment opportunities.

Successful recipients must address the following:
1. Provide stipend support to BHWET-CAY trainees who are in their final year of experiential training (internship or field placement) prior to graduation for no less than 6 consecutive months and no more than 12 consecutive months for full-time trainees. Part-time BHWET-CAY trainees are allowed to receive a stipend prorated at one-half of the fixed amount for no more than 24 consecutive months.
2. Develop or expand the number of experiential trainings sites (traditional, non-traditional, and community-based settings which could include tribal locations) in rural and underserved communities that prioritize cultural and linguistic competencies.
3. Recruit current students and clinical supervisors from different racial, ethnic, cultural, geographic, religious, linguistic, and class backgrounds, and different genders and sexual orientations into the BHWET-CAY Program.
4. Provide training to faculty, clinical supervisors, and BHWET-CAY trainees to increase the knowledge and understanding of the concerns of children and adolescents, and young adults exhibiting risk factors for or diagnosed with mental health or substance use disorders.
5. Recruit, develop, retain, and, when not otherwise funded, compensate clinical supervisors supporting field placements, internships, practicums, etc. for BHWET-CAY trainees.
6. Provide resources and support to BHWET-CAY trainees in securing employment post-graduation in in rural and underserved communities that provide behavioral health services to CAY.

Link to Additional Information: https://www.grants.gov/web/grants/view-opportunity.html?oppId=346098

2. **Immersive Employment Readiness Training for Justice-Involved Individuals, National Institute of Corrections**

Application Due Dates: July 31, 2023
Anticipated Award Amount: up to $500,000 for a 12-month project period

The National Institute of Corrections (NIC) promotes job training for justice-involved individuals through its Workforce Development and Correctional Industries training programs, which are specially designed to meet the training needs of correctional staff. These programs provide practitioners with employment resources and help them successfully apply cognitive behavioral therapies and interventions to various situations with justice-involved individuals. Cognitive

behavioral therapies and interventions have been used, for example, to help individuals repair distorted beliefs about the world and learn critical thinking and problem-solving skills. These are the same skills that justice-involved individuals need to help them maintain employment.

NIC is seeking applications for the development of content to be used in soft skills training with immersive learning technologies. The awardee will not be responsible for creating the immersive learning environment; however, they will be expected to (1) research cognitive behavioral therapies and interventions, (2) develop research-based training scenarios that can facilitate the teaching of skills that justice-involved individuals need for employment, and (3) pair the scenarios with multiple learning methods to create a comprehensive, blended training that maximizes the unique capabilities of immersive learning technologies.

A qualified awardee does not need immersive learning development experience, they but should demonstrate that they have access to the expertise on their project team or have the ability to consult with technical providers who have such expertise during the course of the project. The awardee must be able to communicate ideas with technical providers about how to develop their ideas for virtual environments and scenarios.

To be considered, the successful applicant must:
1. Articulate a clear understanding of recidivism and workforce issues affecting justice-involved individuals and why it is important to provide them with training.
2. Show working knowledge of techniques used to address employment-related issues facing justice-involved individuals.
3. Demonstrate 10 years of experience with cognitive behavioral therapies and interventions as used in correctional settings.
4. Have at least ten (10) years of experience developing corrections-based scenarios.
5. Provide examples of written communication competency in the form of lesson plans and training scenarios, which may have been delivered in person, through film or television, or through other audio/visual media.
6. Provide evidence of a minimum of 10 years of expertise in project management with successful deliverables and completion of projects.
7. Provide evidence of access to project team members or consultants who have knowledge of immersive learning technologies and development that can be consulted during the course of the project.
8. Demonstrate prior experience in curriculum development and learning design that maximize use of immersive learning technologies.

The goal of this cooperative agreement is to create content that will be used to build immersive learning that promotes the use of cognitive behavioral approaches and employment skill-building for justice involved individuals.

The objectives of this cooperative agreement are to:
1. Research cognitive behavioral therapies and interventions to be used in the development of employment-focused immersive learning for justice-involved individuals.
2. Develop a research-based employment-focused curriculum with training scenarios that maximize the capabilities of immersive learning, including 2-dimensional and 3-dimensional technologies such as virtual reality.

Additional deliverables for this project are divided into three areas:
1. Research and Learning for the Development of Cognitive Intervention and Job Readiness Skill Scenarios
2. Immersive Learning Instructional Design
3. Non-Technical Immersive Learning Production

Link to Additional Information: https://nicic.gov/about-nic/funding-opportunities/cooperative-agreement-23ac07-immersive-employment-readiness

3. **Agriculture and Food Research Initiative Competitive Grants Program Foundational and Applied Science Program - Foundational Knowledge of Plant Products, USDA/NIFA**

Application Due Date: August 17, 2023
Award Budget:
- **Standard Grants, Strengthening Standard Grants, and New Investigator Standard Grants: $650,000 for 36 to 48 months**
- **Seed Grants: $300,000 for up to 24 months**
- **Conference and Equipment Grants: $50,000 for up to 60 months**

The purpose of AFRI is to support research, education, and extension projects that address key problems of local, regional, national, and global importance in sustaining conventional, organic, urban food, and agricultural and natural systems. These include farm and ranch production efficiency, profitability, and sustainability; bioenergy and bio-based products; forestry; aquaculture; rural communities and entrepreneurship; human nutrition; mitigating impacts of biotic and abiotic constraints on food production; food safety; mitigating food waste and food loss; physical and social sciences; rural human ecology; development of circular/regenerative economies, and genetic improvement of plant and animals. In addition, the economic sustainability of food systems is an overarching priority for the projects funded in response to this RFA; therefore, projects focusing on plant or animal species or commodities that are important to underserved communities, farmers, ranchers, or small- or medium-sized farms or ranches are also welcome.

Through this support, AFRI advances knowledge in both fundamental and applied sciences important to agriculture. Additionally, AFRI supports work in education and extension activities that deliver science-based knowledge to end users, allowing them to make informed, practical decisions. This AFRI RFA provides funding for research-only, extension-only, and integrated research, education, and/or extension projects addressing six priorities.

The **Foundational Knowledge of Plant Products** program supports projects to study the biosynthesis of plant-derived, high-value biomolecules for use in foods, pharmaceuticals, and other products. Projects must focus on agriculturally important plants, but the choice of plant species must be justified. Molecular, biochemical, synthetic biology, or eco-physiological approaches may be used to determine the biosynthetic pathways for industrially important biomolecules. The intent of this program is for results to be translated into discoveries that help create or meet emerging and future markets and contribute towards long-term demand for agricultural-based products.

Applications must address one or more of the following (order does not indicate importance):
   a. Primary and/or secondary metabolic pathways regulating the biosynthesis of plant metabolites that improve the quality of food and/or feed.
   b. Biosynthetic pathways of metabolites with herbicidal or pesticidal activities.
   c. Improving the production (biosynthesis) of plant-based chemicals that have industrial and/or pharmaceutical relevance.
   d. Macronutrient and/or micronutrient biosynthesis, accumulation, and/or availability that are beneficial to human health and nutrition.
   e.
Program Area Priority Additional Information:
   a. Requests exceeding budgetary guidelines will not be reviewed. Unless otherwise stated, grants are not renewable.
   b. Projects focusing on species and commodities that are important to underserved farmers or small- or medium-sized farms are welcome.
   c. Applications that address topics related to medicinal studies or human health are not appropriate for this program area priority.
   d. Applications that address plant physiology or environmental responses may be more appropriate for Physiology of Agricultural Plants (A1152).

Link to Additional Information: https://www.nifa.usda.gov/grants/funding-opportunities/agriculture-food-research-initiative-foundational-applied-science

4. Engineering of Biomedical Systems, NSF

Application Deadlines: Proposals Accepted Anytime
Estimated Total Program Funding: $10,400,000

The goal of the Engineering of Biomedical Systems (EBMS) program is to provide opportunities for fundamental and transformative research projects that integrate engineering and life sciences to solve biomedical problems and serve humanity in the long term. Projects are expected to use an engineering framework (for example, design or modeling) that supports increased understanding of physiological or pathophysiological processes. Projects must include objectives that advance both engineering and biomedical sciences.

Projects may include methods, models, and enabling tools applied to understand or control living systems; fundamental improvements in deriving information from cells, tissues, organs, and organ systems; or new approaches to the design of systems that include both living and non-living components for eventual medical use in the long term.

The EBMS program supports fundamental and transformative research in the following areas of biomedical engineering:

- Development of validated models (living or computational) of healthy and pathological tissues and organ systems that can support improved fundamental understanding of these systems or that could be applied in the future for development and testing of medical interventions.
- Design and validation of systems that integrate living and non-living components for improved understanding of physiology that could be applied in the future for diagnosis, monitoring, and treatment of disease or injury.
- Design and subsequent application of technologies and tools to investigate fundamental physiological and pathophysiological processes.
- Advanced biomanufacturing of three-dimensional tissues and organs.
- Application of engineering tools and principles, including mathematical modeling, to quantitatively study the immune system in health and disease and to develop techniques for controlling and modulating a host's immune response to challenges such as infectious diseases, cancer, implants, autoimmune disorders, wounds, etc.

The long-term impact of the projects can be related to effective disease diagnosis and/or treatment, or improved health care delivery. However, immediate goals should focus on improved fundamental understanding of cell and tissue function in normal or pathological conditions and advancing biomedical engineering.

Prior to submission, it is strongly recommended that the PIs contact the program director to avoid the possibility of the proposal being returned without review.

Link to Additional Information: https://new.nsf.gov/funding/opportunities/engineering-biomedical-systems-0

5. American Latino Museum Internship and Fellowship Initiative, IMLS

Application Deadlines: August 7, 2023
Award Amount: $100,000 – $750,000 for a grant period of one to three years

This initiative is designed to provide opportunities for internships and fellowships at American Latino museums for students enrolled in Institutions of Higher Education, including Hispanic-Serving Institutions (HSIs). The initiative will nurture students carrying out studies relating to American Latino life, art, history, and culture.

As a result, the American Latino Museum Internship and Fellowship Initiative has significant potential to generate positive societal impact through project activities undertaken as part of the grant-funded work and activities that may be complementary to the project. IMLS does not prescribe the type, focus, reach, or scale of societal impact required for each project, but the questions to be addressed in the application Narrative and the review criteria reflect the agency's commitment to both advancing knowledge and understanding and to ensuring that the federal investment made through grants generates benefits to society. Applicants should keep these two agency commitments in mind when they

conceptualize their projects, identify the target group(s) they propose to reach, prepare their work plans, and formulate their intended results.

Projects should involve engagement between Institutions of Higher Education and museums as sites for paid internship and/or fellowship opportunities. Projects may involve cohort-based approaches to internship and fellowship design; incorporate evaluation of institutional and student experience of the program; or support documentation and publication of program design to be shared with the wider professional community.

Reflecting IMLS's agency-level goals, the American Latino Museum Internship and Fellowship Initiative has two goals and two objectives associated with each goal. Each applicant should align their proposed project with one of these two goals and one of the associated objectives:

- **Goal 1:** Support museum-based undergraduate internship programs designed to advance careers of individuals in the study of American Latino life, art, history, and culture.
  - o Objective 1.1: Create new museum-based internship programs for undergraduate students pursuing studies relating to American Latino life, art, history, and culture.
  - o Objective 1.2: Expand and enhance existing museum-based internship programs for undergraduate students pursuing studies relating to American Latino life, art, history, and culture.

- **Goal 2:** Support museum-based fellowships to increase museum career opportunities for individuals in the study of American Latino life, art, history, and culture.
  - o Objective 2.1: Create new museum-based fellowship opportunities for students pursuing advanced studies related to American Latino life, art, history, and culture.
  - o Objective 2.2: Expand and enhance existing museum-based fellowship opportunities for students pursuing advanced studies relating to American Latino life, art, history, and culture.

Link to Additional Information: https://www.imls.gov/sites/default/files/2023-06/fy23-oms-almifi-nofo.pdf

6. Agriculture and Food Research Initiative Competitive Grants Program Foundational and Applied Science Program - Food Safety and Defense, USDA/NIFA

Application Deadline: August 24, 2023
Anticipated Funding Amount:
- **Standard Grants, Strengthening Standard Grants and New Investigator Standard Grants: up to $650,000 per year for a duration of 36-60 months**
- **Seed Grants: up to $300,000 for up 24 months**
- **Conference and Equipment Grants: $50,000 for up to 60 months**

Safe, high quality, and nutritious foods are essential for human health and well-being, and their production is critical to the domestic and global competitiveness of American agricultural products, fostering consumer trust and the long-term sustainability of the U.S. agricultural industries. Our nation's population is more diverse than ever, and consumers continue to demand foods that are nutritious and safe, including those that are local and regionally produced, and those that have not been common in the typical American diet. Consumer interest in novel foods has risen, and to address this need, industry is responding with novel technologies for engineering, manufacturing, packaging, and delivery of foods and food ingredients. Implementation strategies to address diet-related chronic diseases such as obesity, cardiovascular diseases, diabetes, and certain types of cancers include increasing physical activity, improving fruit and vegetable consumption, and strengthening policies, systems, and environmental supports that encourage healthy eating and activity behaviors. As the nation's food systems become more global, vertically integrated and specialized, the use of data science approaches and advanced analytics will be critical to safeguard foods from intentional or accidental contamination. The Food Safety, Nutrition, and Health (FSHN) program area seeks to provide the scientific foundation for addressing equitable public demands for safe, high quality, accessible and nutritious foods throughout the lifecycle, using a transdisciplinary approach, and to explore previously unrealized opportunities for improving food safety, quality and

nutrition along the value chain.

Program Area Key Information applicable to ALL Food Safety, Nutrition, and Health Program Area Priories:
   a. All applications must adhere to the requirements in Part IV.
   b. Applications from and collaborations with minority-serving institutions, small to midsized institutions, and/or institutions within the EPSCoR states are welcome in this program area.
   c. Applications that include collaborations with international partners may also be submitted. The AFRI International Partnerships webpage contains additional information on international partnerships.
   d. Use of trans-disciplinary teams, including social and behavioral scientists and economists, is welcome, where appropriate.
   e. Applications with highly complex, large scale, transdisciplinary, and integrated research, education, and extension projects that incorporate foundational knowledge from this program area should be submitted to the AFRI Sustainable Agricultural Systems program (A9201) described in the AFRI SAS RFA.
   f. An applicant may submit a Conference Grant application anytime during the year.

NIFA requests proposals for basic and applied research that will reduce the risk of intentional or unintentional contamination of foods.

Applications must address one or more of the following (order does not indicate importance):
   a. Develop microbiological methods for enumerating enteric pathogens, specifically Salmonella, Campylobacter, and Shiga toxin-producing E. coli (STEC), in large representative food samples designed to represent a food production lot.
   b. Develop microbiological procedures designed to alleviate the need for enrichment in the detection of very small numbers of pathogens in large food samples collected to represent a food production lot.
   c. Develop methods for identifying, detecting, and/or enumerating pathogens of relatively high public health risk including persistence or virulence.
   d. Develop and validate advanced and innovative technologies or processes for food processing, manufacturing, packaging, cleaning, and sanitation to effectively reduce the presence of surviving enteric pathogens in food and processing facilities.
   e. Develop preharvest or postharvest methods to detect, reduce, and/or mitigate microbial pathogens, allergens, physical hazards, or toxic chemicals in foods, such as arsenic, lead, cadmium, mercury, PFAS, or emerging chemicals of concern such as micro- and nanoplastics) in foods, including specific reference to culturally and contextually appropriate approaches (such as Indigenous Traditional Ecological Knowledge).
   f. Develop methods to identify, prevent, or reduce intentional contamination or adulteration of foods.
   g. Develop and validate novel strategies for the effective control of persistent reservoirs of foodborne pathogens.

   Link to Additional Information: https://www.nifa.usda.gov/grants/funding-opportunities/agriculture-food-research-initiative-foundational-applied-science

---

7. Catalysis, NSF

Application Deadlines: Proposals Accepted Anytime
Estimated Total Program Funding: $4,900,000

The Catalysis program is part of the Chemical Process Systems cluster, which also includes: 1) the Electrochemical Systems program; 2) the Interfacial Engineering program; and 3) the Process Systems, Reaction Engineering, and Molecular Thermodynamics program.

The goals of the Catalysis program are to increase fundamental understanding in catalytic engineering science and to advance the development of catalysts and catalytic reactions that are beneficial to society. Research should focus on critical challenges and opportunities in both new and proven catalysis technologies. Areas of emphasis may include novel catalyst compositions, structures, operating environment, data science tools, theory, and modeling – preferably in various combinations as dictated by the specific reaction and related knowledge and technology gaps. Target applications include

fuels, specialty and bulk chemicals, environmental catalysis, biomass conversion to fuels and chemicals, greenhouse gas mitigation, recycling of waste materials, generation of solar hydrogen, as well as efficient routes to energy utilization.

Heterogeneous catalysis represents the main thrust of the program. Proposals related to both gas-solid and liquid-solid heterogeneous catalysis are welcome, as are proposals that incorporate concepts from homogeneous catalysis. Recent research trends have highlighted the need for evaluation of catalyst performance and properties under working conditions, especially as supported by advanced in situ and in operando characterization methods. Catalyst synthesizability and stability present additional research opportunities given the harsh operating environments of many catalytic processes.

Topic areas of particular interest include:
- Energy-related catalysis, utilizing renewable or sustainable energy in lieu of thermal, fossil fuel-based technologies, especially applications in electrocatalysis, photocatalysis, and catalytic conversion of biomass-derived chemicals, and also including fuel cell catalysis.
- Catalysis aimed at closing the carbon cycle (especially conversion of carbon dioxide, methane, and natural gas to fuels and chemical intermediates).
- Heterogeneous catalytic alternatives to traditionally non-catalytic or homogeneous reaction processes, as well as new catalyst designs for established catalytic processes.
- Environmental catalysis focused on mitigating both air and water pollutants and supporting energy-efficient upcycling of waste materials to higher-value products.
- Catalytic remediation of feedstocks, process streams, products, or effluents.
- Commercially scalable methods of catalyst synthesis, including durable, poison-resistant, and easily regenerable catalyst formulations and designs.
- New catalytic materials and architectures (especially those substituting earth-abundant materials for precious and noble metal catalysts).
- Basic understanding of catalytic materials, reaction pathways, kinetics, and surface reaction mechanisms.
- Advanced tools for catalyst characterization and theoretical/computational catalysis.

Proposals that deal with new catalytic materials, especially when viewed in light of the inherent complexity of heterogeneous catalytic reactions, will be enhanced by including plans to assess: 1) reproducibility and repeatability of data, 2) stability under realistic operating conditions including start-up and shut-down cycles, 3) performance relative to standard or well-known reference materials, and 4) quantitative, well-accepted measures of catalyst activity, selectivity, and catalytic efficiency, such as turnover frequencies, quantum and/or photon yields of photocatalysts, Faradaic efficiency of electrocatalytic reactions, and detailed product analyses and mass balances for the targeted application.

Prior to submission, it is strongly recommended that the PIs contact the program director to avoid the possibility of the proposal being returned without review.

Link to Additional Information: https://new.nsf.gov/funding/opportunities/catalysis-2

---

8. BRAIN Initiative: Development and Validation of Novel Tools to Probe Cell-Specific and Circuit-Specific Processes in the Brain (R01 Clinical Trial Not Allowed), NIH

Application Deadlines:
- **Letter of Intent: 30 days prior to the application due date**
- **Full Proposal: June 07, 2024**

Award Amount: budgets are not limited but need to reflect the actual needs of the proposed project

This Notices of Funding Opportunity (NOFO) is designed to support the development and validation of novel tools to facilitate the detailed analysis of cells and circuits and provide insights into the neural circuitry and structure underlying complex behaviors. The human brain consists of an estimated one hundred billion neurons and more than one trillion supporting glial cells that are uniquely organized to confer the extraordinary computational activities of the brain. Cell types are categorized by their anatomical position, neurotransmitter content, dendritic and axonal connections, receptor

profile, gene expression profile, and distinct electrical properties. Although the human brain has long been the focus of numerous studies, with major achievements made along the way, many specific details about the brain remain to be discovered, such as cell types and connections that are responsible for rapid information processing. Defining cellular and circuit-level function is dependent on detailed knowledge about the components and structure of the circuit. Such knowledge, in turn, is fundamental to understanding how these features underlie cognition and behavior, which should aid in the development of targeted cell-type and circuit-specific therapeutics to treat brain disorders. Improved technology is needed to obtain this knowledge.

Development of novel tools that will delineate anatomical connections between cells and expand our knowledge of circuit architecture and function is an area well poised for additional investment. Several efforts are ongoing to study large-scale, long-range connections, such as the BRAIN Initiative Connectivity across Scales (BRAIN CONNECTS) program. The recent development of new technologies (e.g., hydrogel-based brain tissue clearing, expansion microscopy, spatial transcriptomics, and several other imaging breakthroughs) allow an unprecedented three-dimensional view into the post-mortem brain. These exciting technologies hold promise for mapping short- and long-range connections throughout the brain. Coupled with improved activity monitoring technologies in awake, behaving animals, these new tools promise an understanding of circuitry in action. Further development of these technologies is crucial to push the envelope beyond our current capabilities. To this end, applicants from the biological sciences are encouraged to establish collaborations with nanobiologists, material scientists, engineers and colleagues in other disciplines to develop groundbreaking approaches to study brain activity.

This NOFO solicits applications to develop next-generation, innovative technologies to define and target specific cell types in the brain. Of particular interest are first-in-class and/or cross-cutting non-invasive or minimally invasive techniques that permit repeated measurements from cells over time in a non-destructive manner. Tools/technologies relevant for this initiative are expected to be transformative, either through the development of novel tools that may be high-risk or through major advances in current approaches that break through technical barriers and will significantly improve current capabilities. An emphasis of the BRAIN initiative is the development of novel tools to study the brain, and here we highlight the need for innovative approaches to bridge experimental scales. Studies that are able to explore molecular and cellular mechanisms of neural activity permitting improved precision and sensitivity in the analysis of micro-and macro-circuits are strongly encouraged. Progress in understanding how the activity of the brain translates to complex behaviors will be facilitated by non-invasive approaches for both monitoring and manipulating neural activity in awake, behaving organisms.

This NOFO seeks applications in areas including, but not limited to:
- Novel methods for tagging individual neurons such that cellular components of a functional circuit can be explored.
- Novel methods for non-invasive targeted access to, or manipulation of, distinct cell types in defined circuits with spatiotemporal control.
- Novel, transgenic methods in multiple model species to allow more refined cell-specific and circuit-specific manipulation.
- Novel technologies to target and characterize non-neuronal cells, including glial and vascular cells, in the brain.
- Novel methods for visualizing or manipulating epigenomic marks or gene expression in neural cells.
- Development of cell type-specific molecular sensors and additional tools and approaches to address circuit-specific manipulation and monitoring.
- New tools and approaches that minimize tissue and cell perturbations so that cell viability is maintained, allowing for multiple repeated measures in the same cell over time.
- Development of in situ gene profiling using FISH and sequencing methodologies.
- Unique combinations of tools for multiplex analysis and/or manipulation of single cells in situ to maximize data content over many parameters (e.g., RNAs, proteins, metabolites, organelles, electrochemical dynamics, signal secretion/reception/transduction, cytoarchitecture or migratory changes).
- Novel automated and scalable assays for high-throughput analysis of single cells in situ in the brain, including scalability of measured parameters in parallel, cell numbers and/or speed of processing.

- Technologies enabling phenotypic comparison of cell types across species and classes.
- Novel trans-synaptic tracers that can work in retrograde and anterograde direction or deliver cargos to cells in the nervous system.
- Novel trans-synaptic tracers that can be used both at the electron- and light-microscopy level.
- Novel tools or methods to label and identify chemical or electrical synaptic molecules and contacts.
- Innovative tools that provide significant advances in sensitivity, selectivity, or the spatiotemporal resolution of molecules/structures/activities within single cells in the brain and between ostensibly similar cells in situ (e.g., high-resolution imaging of molecular interactions within single cells).
- Enhanced temporal and spatial resolution techniques for noninvasive molecular imaging of neuronal cells for in situ brain studies.
- Novel uses of super-resolution light microscopic approaches for identifying synaptic connections and mapping micro-circuits.
- Innovative approaches to reduce the time and cost of determining high-resolution synaptic connectivity by electron microscopy or other approaches.
- Development of novel sensors or tools to manipulate neurotransmitters or neuromodulators release or intracellular molecules.
- Innovative ways to use multiple vectors to deliver "split" gene products to limit and/or control expression in specific cell types.
- Significantly improved viral- or non-viral-mediated gene delivery that targets specific cells or cell types in the nervous system.
- Novel methods (genetic or non-genetic) to deliver active agents (e.g., chemical or pharmacological probes/drugs) to specific neurons or intracellular compartments, and/or techniques to detect target engagement by those agents in intact brains in situ.
- Chemical or genetic engineering of blood brain barrier-crossing carrier agents (such as tagged antibodies or other tools) to allow delivery of specific cargoes (e.g., neuronal activity, effectors, tracers or sensors) to specific cells or circuits.
- Unique systems-level single cell computational approaches to help define functional cell types and circuitry.
- Novel computational approaches to analyze and integrate multi-scale datasets to better understand brain function.
- Innovative approaches to bridge scales of experimental approach. Studies that are able to explore molecular and cellular mechanisms of neural activity in broader contexts are encouraged.
- Novel techniques for integrating micro-scale connectivity data (e.g., by electron microscopy) with cellular or synaptic phenotypic information.
- Innovative molecular complementation methods to identify synaptic connections and determine their phenotypes.

Link to Additional Information: https://grants.nih.gov/grants/guide/rfa-files/RFA-MH-24-280.html

9. Agriculture and Food Research Initiative Competitive Grants Program Foundational and Applied Science Program - Diet, Nutrition and the Prevention of Chronic Diseases, USDA/NIFA

Application Deadlines: August 24, 2023
Award Amounts:
- **Standard Grants, Strengthening Standard Grants and New Investigator Standard Grants: $1,000,000 for 36 to 60 months**
- **Seed Grants: up to $300,000 for 24 months**
- **Conference and Equipment Grants: $50,000 for up to 60 months**

NIFA requests proposals for integrated projects that help prevent and control chronic disease equitably across the lifecycle by supporting and encouraging culturally relevant, healthy dietary choices through data-driven, flexible, customer-focused approaches.

Applicants must address at least one of the following and at least one Program Area Priority Approach:

a. Develop, implement, and evaluate innovative research, educational, and outreach strategies to improve eating patterns that prevent and control diet-related chronic diseases.
b. Investigate, assess, and recommend food and nutrition research and program interventions with the goal to achieve food and nutrition security, improve and sustain health.
c. Improve food security and nutritional health outcomes for racial/ethnic minority populations, underserved populations, rural, or remote populations through an evidence-based approach to healthy eating and active living.

Program Area Priority Approaches:
a. Precision nutrition, also referred to as personalized nutrition, which focuses on individuals rather than groups of people, or specific historically underserved communities rather than the general population.
b. Nutrition education that motivates or facilitates voluntary adoption of food choices and other food and nutrition-related behaviors conducive to health and well-being.
c. Policy, systems, and/or environmental change efforts supportive of healthy food and physical activity behaviors.
d. Culturally and contextually appropriate approaches to tackle food and nutrition insecurity and prevent and control diet-related chronic diseases and corresponding disparities.

Projects that in addition to helping prevent and control chronic disease also address critical current and future effects of climate change on food systems or the potential to improve the health and financial security of food-insecure families by reducing food waste in the home will also be considered.

NIFA welcomes projects to address the intersections between climate change, food systems, and food and nutrition security including the role of precision nutrition, direct nutrition education and/or policy, systems, and environmental supports.

NIFA welcomes applicants to consider educational components of integrated projects that (1) address training or retraining workforce for careers as nutrition educators, to support Food and Nutrition programs particularly in historically underserved populations or (2) develop evidence-based program interventions and materials responsive to local and regional workforce needs while addressing barriers to career pathways including access to equipment, technology, broadband, instructors, mentors, childcare, eldercare, and transportation.

Link to Additional Information: https://www.nifa.usda.gov/grants/funding-opportunities/agriculture-food-research-initiative-foundational-applied-science

10. Cyberinfrastructure Technology Acceleration Pathway (CITAP), NSF

Application Deadline: September 06, 2023
Estimated Range of Awards: up to $10,000,000 for a period of performance of up to five years

The national cyberinfrastructure (CI) ecosystem is essential to computational- and data-intensive research across all science and engineering (S&E) domains. The CI ecosystem is highly dynamic, driven by rapid advances in a wide range of technologies, increasing volumes of highly heterogeneous data, and escalating demands for CI resources and services by the research community. Innovations in CI are consequently key catalysts for new modes of discovery and play a critical role in ensuring U.S. leadership in science, engineering, economic competitiveness, and national security, consistent with NSF's mission. It is thus imperative that CI innovations become available, in a coordinated and sustainable manner, as part of the NSF-funded advanced CI ecosystem.

The Advanced Cyberinfrastructure Coordination Ecosystem of Support and Services (ACCESS) program provides an array of national-scale CI services to the S&E research community, including integrated coordination of users' requests for computational and data resources; integration of resource providers' systems; deployment of technical support; monitoring of system usage; user training; and communication and outreach to the CI and research communities. The ACCESS program is envisioned to include a process to enable breakthrough CI innovations of recognized value to researchers to be translated into production-quality sustained services that are deployed and made available to the user community from applicable NSF-funded resource providers. Such a process would also include methods to prioritize

which innovations to translate to production services and to identify when these services should be taken out of service or replaced.

This CITAP solicitation is focused on the translation of innovative research CI software – such as system software, libraries, application codes, and software enabling data services. NSF seeks proposals that aim to design, test, and subsequently operate a pathway service within the ACCESS program that manages and accelerates the translation of promising research CI software to production-quality services across the NSF advanced CI ecosystem in support of the NSF S&E research community. CITAP proposals are expected to create a new workflow process (represented notionally in Figure 1 below) within the ACCESS program that: (1) identifies novel CI software from diverse sources in a strongly community-informed way; (2) establishes an open and merit-based process for selecting and prioritizing/sequencing which of the identified innovations are of highest and most immediate value to users of the advanced CI ecosystem and can be feasibly translated to production level and made available for use by researchers using ACCESS resources; and (3) establishes an operational process that translates innovations into production services, including creation of partnerships where necessary to address each of the technical challenges and intellectual property (IP) considerations faced when integrating novel CI software within the advanced CI ecosystem.

Examples of translation challenges include (but are not limited to):
- awareness by potential users who could benefit from the technology
- systems engineering and software deployment
- an initial launch period of collaborative maintenance
- anticipation of user support that will be necessary
- engagement of people or possibly organizations needed to sustain and upgrade the software/service in response to changes in technology and/or feedback from users and communities served
- determination of when the relative use or value of the software has decreased to an extent that decommissioning is warranted

The proposals should assume the following three phases of development activities during the award period for the CITAP project: process design; pilot development and testing using CI translation use cases within the ACCESS program; and initial operations at scale. Advancement by the project to each subsequent phase will be based on successful associated milestone reviews that will assess the satisfaction of performance criteria defined for each phase that reflect the interests of key constituents, including S&E users, system administrators, and CI developers. During the initial operations phase, product launches will include a period of collaborative maintenance by the CITAP awardee and developers. Longer-term maintenance should also be planned to sustain and upgrade the technology.

Given the variety of sources of CI research and potential development partners, CITAP proposals are expected to promote the sustainability of the production software via collaboration with organizations or relevant NSF projects. Office of Advanced Cyberinfrastructure (OAC) programs highlighted below are among those that foster development of CI technologies that are candidates for accelerated translation to production. Programs in OAC and in NSF's new Directorate for Technology, Innovations and Partnerships (TIP) support communities that may be suited to sustain or upgrade the production CI technologies. CITAP proposals are welcome to also include or propose to recruit collaborative involvement of constituents beyond NSF programs, such as academic institutions, non-government organizations, industry, and other government agencies.

Link to Additional Information: https://www.nsf.gov/pubs/2023/nsf23597/nsf23597.htm

11. Process Systems, Reaction Engineering, and Molecular Thermodynamics, NSF

Application Deadlines: Proposals Accepted Anytime
Estimated Total Program Funding: $4,900,000

The goal of the Process Systems, Reaction Engineering, and Molecular Thermodynamics program is to advance fundamental engineering research on the rates and mechanisms of chemical reactions, systems engineering, and molecular

thermodynamics as they relate to the design and optimization of chemical reactors and the production of specialized materials that have important impacts on society.

The program supports the development of advanced optimization and control algorithms for chemical processes, molecular and multi-scale modeling of complex chemical systems, fundamental studies on molecular thermodynamics, and the integration of these methods and concepts into the design of novel chemical products and manufacturing processes. This program supports sustainable chemical manufacturing research on the development of energy-efficient chemical processes and environmentally friendly chemical products through concurrent chemical product/process design methods. Sustainability is also enhanced by research that promotes the electrification of the chemical process industries over current thermally activated processes.

Proposals should focus on:

- **Chemical reaction engineering**: This area encompasses the interaction of transport phenomena and kinetics in reactive systems and the use of this knowledge in the design of chemical reactors. Research areas include(1) development of novel reactor designs, such as catalytic and membrane reactors, micro-reactors, chemical vapor and atomic layer deposition systems, (2) studies of reactions in supercritical fluids, (3) novel reaction activation techniques such as atmospheric pressure plasmas (which may be submitted under the ECLIPSE meta-program) and microwave radiation, (4) design of multifunctional and intensified systems, such as chemical-factory/lab-on-a-chip concepts, (5) nanoparticle nucleation, growth, and surface functionalization, and (6) biomass conversion to fuels and chemicals. The program also supports new approaches that enable the design of modular chemical manufacturing systems such as distributed hydrogen and ammonia production processes.

- **Process design, optimization, and control**: This area encompasses process systems science, including the development of process modeling, design, control and optimization theory and algorithms; process development proposals are not appropriate for this program. High-priority research topics include process intensification, modular process systems, smart manufacturing, large-scale carbon dioxide capture and conversion, computational tools (including those based on quantum computing methods) enabling advanced chemical manufacturing, real-time optimization and control of large-scale chemical systems with quantitative sustainability metrics, machine learning, and optimization of enterprise-wide processes involving planning, scheduling, and real-time control to create resilient supply chains.

- **Reactive polymer processing**: Program scope in this area is limited to research that integrates synthesis and processing to engineer specific nanoscale structures and compositions to tune the macroscopic scale properties of polymers, such as their ability to biodegrade or to be recycled. The focus is on reactive processes that address these environmental concerns while producing tailor-made macromolecular materials.

- **Molecular thermodynamics**: This area focuses on fundamental research that combines principles of classical thermodynamics, statistical mechanics, and atomistic-scale simulations to improve chemical processing and to facilitate synthesis of novel functional materials such as catalysts, polymers, solvents, and colloids. Topics include fundamental studies on self- and directed-assembly of nanoscale-level patterned polymer films, machine-learning methods to predict structure-property relationships, large-ensemble molecular dynamics simulations, simulation of peptide self-assembly and protein interactions, and behavior of multiphase and reactive systems under nanoscale confinement. The ultimate goal of research supported by this program is to enable the development of more efficient chemical processes, improve environmental sustainability and water quality, and design functional materials with tailored properties.

Prior to submission, it is strongly recommended that the PIs contact the program director to avoid the possibility of the proposal being returned without review.

    Link to Additional Information: https://new.nsf.gov/funding/opportunities/process-systems-reaction-engineering-molecular-2

12. NIDDK Catalyst Award (DP1 Clinical Trial Not Allowed), NIH

The NIDDK Catalyst Award is intended to support investigators developing bold, innovative, and often risky approaches to address significant and intractable problems in research topics of interest within two extramural divisions of NIDDK: the Division of Diabetes, Endocrinology and Metabolic Diseases and the Division of Digestive Diseases and Nutrition. To be considered pioneering or catalyzing, the proposed research must reflect approaches substantially different from the current state-of-the-art, or ideas outside the mainstream of contemporary research. The program is not intended to expand a current research program's funding in the area of the proposed project, but instead must reflect a fundamental new insight or understanding that will revolutionize the field. Catalyzing advances may emanate from the application of exceptionally innovative approaches and/or from testing radically unconventional hypotheses.

Research areas of interest for DEMD include:
- **Diabetes**: diabetes and other metabolic disorders, including inborn errors of metabolism and rare genetic metabolic diseases such as lipodystrophy and maturity onset diabetes of the young (MODY); non-pulmonary aspects of cystic fibrosis pathogenesis and pathophysiology; metabolic or endocrine complications related to HIV or anti-retroviral therapy; complications of diabetes that affect multiple organ systems, or the specific complications of diabetic foot ulcers, peripheral sensory neuropathy, and neurovascular or neurocognitive complications of diabetes.

- **Endocrinology**: development, metabolism and basic biology of the endocrine system including pathophysiology of endocrine disorders involving thyroid and parathyroid; neuroendocrinology of energy balance, including neural pathways and peptides that regulate feeding behavior, satiety, and energy expenditure.

- **Metabolism**: mechanisms regulating metabolism, metabolic dysfunction, and tissue crosstalk in specific peripheral tissues such as adipose, bone, muscle, or liver; effects of the intrauterine environment on metabolic responses in offspring.

Research areas of interest for DDN include:
- **Digestive Diseases**: achalasia, gastroesophageal reflux disease, peptic ulcer disease, gastrointestinal bleeding, diarrhea, malabsorption, appendicitis, inflammatory bowel diseases, celiac disease, functional GI and motility disorders, metaplasia, and dysplasia.

- **Hepatobiliary diseases**: nonalcoholic fatty liver disease, chronic hepatitis, cirrhosis, drug-induced liver injury, autoimmune liver diseases [autoimmune hepatitis, sclerosing cholangitis, primary biliary cholangitis], biliary atresia and cholestatic liver diseases of childhood, genetic liver diseases, gallbladder disease, liver transplantation; as well as investigation of molecular pathways involved in liver development, injury, inflammation, repair, cholestasis, and fibrosis.

- **Exocrine pancreatic diseases**: acute and chronic pancreatitis, autoimmune pancreatitis (idiopathic and familial), pancreatogenic diabetes.

- **Pathophysiological mechanisms related to obesity and nutrition** including nutrient metabolism and energy balance, gut-brain interactions related to food intake, integration of microbiome-nutrient host interactions, and integrated response to a meal.

- **Mechanisms of central and peripheral neural control of the normal digestive system** and the role of neural mechanisms in diseases and conditions.

- **HIV/AIDS** research in the context of the above areas of interest.

Catalyst recipients are required to commit a substantial portion of their research effort (at least 4 person-months) to activities supported by the award. Effort expended toward teaching, administrative, or clinical duties should not be included in this calculation. Investigators who will not be able to meet this requirement should not submit applications.

Prior to applying, investigators are strongly encouraged to contact the Scientific/Research Contacts listed in Section VII of the NOFO to discuss the appropriateness of the proposed research.

Link to Additional Information: https://grants.nih.gov/grants/guide/rfa-files/RFA-DK-23-014.html

---

13. Agriculture and Food Research Initiative Competitive Grants Program Foundational and Applied Science Program - Food and Human Health, USDA/NIFA

Application Deadline: August 10, 2023
Award Budget:
- **Standard Grants, Strengthening Standard Grants and New Investigator Standard Grants: $650,000 for 36 to 60 months**
- **Seed Grants: up to $300,000 for 24 months**
- **Conference and Equipment Grants: $50,000 for up to 60 months years**

NIFA requests proposals that use culturally and contextually appropriate approaches, where applicable, to investigate the interrelationships of foods, or components of foods, and their impact on the gut microbiota to improve human health. Project results should inform precision nutrition or personalized dietary needs particularly for historically underrepresented populations. Project results should complement our nation's dietary pattern recommendations to prevent, reduce, or control chronic diseases.

Applicants must address at least one of the following:
a. Investigate the interrelationship of foods, or components of foods; and gut microbiota on human health; and/or;
b. Research on functional outcomes of the interrelationship between toxic elements, such as arsenic, cadmium, lead, and mercury and human microbiome; and/or;
c. Investigate relationship of food contaminants and the human gut microbiota; and/or
d. Determine the structure and functional outcomes of metabolites of gut microbiome and foods, or food components and/or contaminants.

Program Area Priority Additional Information:
a. Requests exceeding budgetary guidelines will not be reviewed. Unless otherwise stated, grants are not renewable.
b. Justification must be provided for the hypothesized relationship of the bioactive component(s) to human health outcomes.
c. Applications using a whole food approach are preferred. The enrichment, fortification or micro- and nano-encapsulation must use whole foods.
d. This program area priority does not support research on the development of dietary supplements, or for the establishment, expansion, or maintenance of dietary databases.
e. Projects with specific types of partnerships (small and mid-sized or minority-serving degree-granting institutions not on the list of most successful institutions; EPSCoR institutions; or international partners) can request up to an additional $150,000 as specified in the key information table.

Link to Additional Information: https://www.nifa.usda.gov/grants/funding-opportunities/agriculture-food-research-initiative-foundational-applied-science

14. Limited Competition: Collaborative Partnership to Advance Global Health Research (U01 Clinical Trial Not Allowed), NIH

The purpose of this Notice of Funding Opportunity (NOFO) is to enhance global health through the establishment and maintenance of a successful collaborative partnership to advance health research, research capacity enhancement, and other research-related NIH activities. Thus, this NOFO aims to support a partnership between the NIH and the recipient(s) with the commitment and capacity to help extend NIH research-related programs worldwide. An applicant organization or institution must 1) be a recognized authority for facilitating global and regional biomedical programs; 2) possess the infrastructure and capacity for developing, implementing, and maintaining NIH research-related programs internationally; and 3) demonstrate experience in successfully guiding and coordinating international research activities.

This NOFO will support the development, implementation, establishment, and maintenance of a collaborative partnership to advance health research internationally. Specifically, this NOFO seeks to:

- support and strengthen innovative international basic, applied, and clinical biomedical research activities to better acquire fundamental scientific knowledge and to apply and advance that knowledge to enhance health;
- develop, maintain, renew and enhance research-related education to increase research capability to study the causes, improve diagnosis, implement better prevention methodologies, and seek treatments and cures of human diseases;
- develop, maintain, renew and enhance research-related resources to increase research capability worldwide;
- disseminate scientific knowledge to facilitate global utilization of research findings and the coordination of evidence-based improvements in health; and
- assess and evaluate health-related programs focused on health research and public health

Program Requirements

As part of the overall project, applicants will propose multiple activities to address global health issues and advance health research world-wide. The activities listed below are required.

1) **Infectious Disease Global Health Research Activity** - Applicants must propose a collaborative activity that responds to an emerging issue or need in global health research and public health related to infectious diseases. This activity may involve, for example, scientific meetings, consultations, expert panels or reports and related follow-on activities.

2) **Specified Collaborative Activities** - Applicants must propose plans to respond to the following required activities that will be executed during the award period:

- Immunization Agenda 2030: Applicants must develop, in consultation with NIAID and other partners, a plan to address the research and innovation strategic priority of Immunization Agenda 2030, by convening the Global Vaccine and Immunization Research Forum (GVIRF) biennially (every two years). The purpose of this activity is to assemble global leaders in vaccine and immunization research and development to accomplish the following: track progress and discuss obstacles related to priority vaccine research and development, identify actions recommended to be taken by the research and development community in the area of vaccines and immunization research, create a forum where experts can discuss ongoing and emerging scientific opportunities and challenges, and review progress towards the research and innovation strategic priority of the Immunization Agenda 2030. This plan must involve in-person, biennial scientific meetings to be held in rotating foreign nations, and may involve multiple virtual webinars annually, and consultations,

reports and related follow-on activities.

- Genomics for Global Health: Applicants must propose strategies to enhance the capacity for the use of genomics for health in LMICs. These must include: 1) Coordination and support of a genomics oversight and steering group that will help identify opportunities and challenges and set priorities; 2) A forum for international and regional stakeholder engagement that will help establish and disseminate best practices for incorporating genomics into healthcare and public health; 3) Convening experts to identify and address the most pressing ethical, legal and social implications of genomics research and implementation in low-resource settings; and 4) Supporting regional genomics expertise and consultation to promote and advocate for expanded genomics programs and provide technical guidance for emerging programs.

- Collaboration for Cancer Control: Applicants must provide a plan for collaborative work around implementation of cancer control tools, interventions and strategies in low resource settings. The purpose of this activity is to bring together global leaders in cancer control in collaboration with the National Cancer Institute to accomplish the following: develop training and dissemination activities to support application of the WHO/UN One Health tool for cancer, establish guidance for the development and use of data systems to inform and monitor cancer control plans, provide technical support towards tailored strategies aimed at increasing coverage, quality, and effectiveness of cervical cancer prevention, screening and treatment, and provide technical support for the dissemination and implementation of evidence-based interventions for cancer prevention and survivorship in low resource settings.

- Global Mental Health Agenda: Applicants must provide a plan for a partnership to advance research and development of innovative strategies targeting priorities of the National Institute for Mental Health (NIMH) Global Mental Health Agenda. This includes (a) research to track progress and barriers to research on the integration of mental care within healthcare systems, community centers, schools, work environments, and/or on platforms of care used to support mobile populations; (b) research to expand effective suicide prevention; (c) research to identify and address the social drivers of mental health; (d) research to develop preventive and therapeutic strategies for mental disorders in mobile populations in humanitarian crises; and (e) research to understand and intervene on healthcare systems to improve access and availability to mental health care services.

3. **Global Health Activity Fund** - Applicants must develop an infrastructure required to manage and oversee a Global Health Activity Fund (GHAF) to further the impact of the overall Program through timely engagement with experts on specific, collaborative projects in support of research that address management and response to health threats.

Link to Additional Information: https://grants.nih.gov/grants/guide/pa-files/par-23-203.html

15. Disability and Rehabilitation Engineering (DARE), NSF

Application Deadlines: Proposals Accepted Anytime
Estimated Total Program Funding: $5,000,000

The Disability and Rehabilitation Engineering program supports fundamental engineering research that will improve the quality of life of persons with disabilities through the development of new theories, methodologies, technologies, or devices. Disabilities could be developmental, cognitive, hearing, mobility, visual, selfcare, independent living, or other. Proposed projects must advance knowledge regarding a specific human disability or pathological motion or understanding of injury mechanisms.

Research may be supported that is directed toward the characterization, restoration, rehabilitation, and/or substitution of human functional ability or cognition, or to the interaction between persons with disabilities and their environment. Areas of particular interest are neuroengineering, rehabilitation robotics, brain-inspired assistive or rehabilitative systems, theoretical or computational methods, and novel models of functional recovery including the development and application

of artificial physiological systems.

Emphasis is placed on significant advancement of fundamental engineering knowledge that facilitates transformative outcomes. The DARE Program encourages high-risk/high-reward proposals that surpass incremental technological improvements. The DARE Program also encourages participatory design and the inclusion of trainees with disabilities as part of the proposed research or broader impacts.

NSF does not support clinical trials; however, feasibility studies involving human volunteers may be supported if appropriate to the project objectives. The development and application of artificial physiological systems that do not model functional recovery and instead improve fundamental understanding of physiological and pathophysiological processes would be appropriate for EBMS.

Furthermore, the DARE program does not support proposals having as their central theme commercialization of a product. Small businesses seeking early-stage R&D funding for product development are encouraged to contact the NSF SBIR/STTR program in the America's Seed Fund within the Directorate for Technology, Innovation and Partnerships (TIP).

Prior to submission, it is strongly recommended that the PIs contact the program director to avoid the possibility of the proposal being returned without review.

Link to Additional Information: https://new.nsf.gov/funding/opportunities/disability-rehabilitation-engineering-dare-2

16. Health Equity Leadership Development Initiative, DHHS

Application Deadlines: August 1, 2023
Award Amount: up to $700,000 per budget period

The U.S. Department of Health and Human Services (HHS), Office of Minority Health (OMH) is dedicated to improving the health of racial and ethnic minority populations through the development of health policies and programs that will help eliminate health disparities. Through its demonstration grants, OMH supports the identification of effective approaches for improving health outcomes with the goal of promoting dissemination of these approaches.

We anticipate funding the Health Equity Leadership Development Initiative (HELDI) to implement a fellowship program at HHS to provide training in health equity issues and leadership to early career individuals to improve the health of racial and ethnic minority and other disadvantaged populations. Recipients will be expected to address the gap in federal fellowship opportunities for individuals to advance health equity and address the social determinants of health through health policies, programs, and practices.

Award recipients under this announcement should meet each of the below expectations in the execution of their funded project:

1. **Develop and implement a Health Equity Leadership Development Project**
   We expect recipients to develop and implement a project to support a 9 to 12-month fellowship for graduate-level students and recent graduates who have completed their graduate degree within the previous two years. The project should focus on developing skills and creating opportunities for federal experience in health equity, health disparities, public health, and the social determinants of health for project participants. Participants will benefit from participation in the following ways:

   - Preparation for career opportunities within public health agencies
   - Increased awareness and competency in health equity knowledge and practice

   We expect recipients to utilize the OMH curriculum and training modules to educate and engage fellows in health policy issues and processes, with a focus on health disparities and health equity; to improve cultural competence;

and to build leadership skills aligned with core competencies (e.g., leading change, leading people, results driven, business acumen, and building coalitions) for federal leadership. An overview of the OMH curriculum is provided on grants.gov under Related Documents for this NOFO.

In addition to the OMH curriculum and modules, we expect project activities to incorporate facilitated professional experiences and supplemental learning opportunities focused on areas such as leadership and technical skills development. These activities may include webinars, guest speaker seminars, training sessions, or innovative approaches toward the desired outcomes. We encourage recipients to explore innovative approaches to case studies, panels and/or guest speaker presentations on health equity centered policies, programs, and practices.

We expect recipients to provide mentoring and coaching, for up to 10 fellows each year of the project, to support practice of leadership and technical skills, and to support the design of a career pathway to leadership.

2. **Provide fellowship project management and oversight.**
   We expect recipients to develop and implement a process to manage and provide oversight of the project that should include, but is not limited to processes for:

   1. *Fellow Recruitment:* Recruit potential fellows interested in health equity, health disparities, public health, and the social determinants of health through diverse and tailored methods. We encourage recipients to partner with Minority Serving Institutions and with racial and ethnic minority organizations to maximize recruitment outreach.

   2. *Identification of Fellow Housing Options*: Ensure that fellows have access to safe housing options that are located within a reasonable distance of the fellows' host site(s) (e.g., within 20 miles) and near public transportation.

   3. *Host Site Recruitment*: Collaborate with us to recruit HHS sites to host fellows that have meaningful public health, social determinants of health, health equity and/or health disparities projects and programs.

   4. *Fellow Selection, Placement, and Stipend*: Select fellows, with OMH approval, through an application process that includes an application review protocol and developed selection criteria. Provide federal placement recommendations and coordinate with assistance from OMH to match fellows with identified HHS host sites aligned with each fellow's individual interests. Manage a process for fellow stipend distribution. A flat rate stipend amount will be determined in consultation with OMH.

   5. *Fellow Orientation*: Develop and implement an orientation for the fellows prior to the start of their fellowship experience. The orientation should the following components: overview of the recipient's program components (e.g., mentorship, webinars, speakers), expectations for the fellowship, information on housing and stipends, and host site information (e.g., on-boarding process, placement). Recipients should also include other relevant topics in the orientation that would contribute to a meaningful experience for the fellows.

   6. *Fellow Engagement*: Develop a system to track each fellow's progress during the fellowship relative to activities that: facilitate networking and learning among fellows, develop leadership competencies for advancing health equity, and develop awareness of the federal hiring system (e.g., resume preparation, interviewing) and employment opportunities.

   7. *Fellow Follow-Up Post Fellowship*: Work with us to conduct post-participation assessments with fellows. Develop activities that sustain and support the fellow's interest in and awareness of federal and other career opportunities in public health leadership.

3. **Participate in evaluation activities**
   We expect recipients to participate in the process and outcomes evaluation. We expect recipients to work with us to

evaluate the implementation and impact of the initiative, which is expected to result in the following primary outcomes at the individual fellow level:

- Increased opportunities for federal fellowship experiences in advancing health equity and addressing the social determinants of health through health policies, programs, and practices.
- Increased knowledge and technical skills that align with the core Federal leadership competencies (e.g., leading change, leading people, results-driven, business acumen, and building coalitions).
- Increased competency in health equity knowledge and practice.

4. **Disseminate project knowledge and findings**
   Recipients should document project knowledge and findings, to include the implementation process, lessons learned, successes and challenges. Recipients should communicate and disseminate project knowledge and findings, to include dissemination to federal, state, territorial and tribal public health agencies; policymakers; community organizations, community members; and other stakeholders. Dissemination products should be freely, immediately, and equitably accessible to the public.

5. **Disparity Impact Statement**
   We expect recipients to develop a disparity impact statement (DIS) during the project period using local data to identify populations at highest risk for health disparities relative to this initiative.

   Technical Assistance Webinar: 07/06/2023 at 3:00 PM Eastern

   Link to Additional Information: https://www.grants.gov/web/grants/view-opportunity.html?oppId=342717

17. Cellular and Biochemical Engineering, NSF

Application Deadlines: Proposals Accepted Anytime
Estimated Total Program Funding:

The Cellular and Biochemical Engineering program supports fundamental engineering research that advances understanding of cellular and biomolecular processes. CBE-funded research may lead to the development of enabling technology for advanced biomanufacturing of therapeutic cells, biochemicals, and biopharmaceuticals, and for other biotechnology industries.

The program encourages highly innovative and potentially transformative engineering research leading to novel bioprocessing and biomanufacturing approaches. Fundamental to many CBE research projects is the understanding of how biomolecules, subcellular systems, cells, and cell populations interact, and how those interactions lead to changes in structure, function, and behavior. A quantitative treatment of problems related to biological processes is considered vital to successful research projects in the CBE program.

Major areas of interest for the program include:

- Metabolic engineering and synthetic biology for biomanufacturing,
- The design of synthetic metabolic components and synthetic cells,
- Microbiome structure, function, maintenance, and design,
- Protein and enzyme engineering, and
- Design of integrated chemoenzymatic systems.

The CBE program also encourages proposals that effectively integrate knowledge and practices from different disciplines while incorporating ongoing research into educational activities.

All proposals should include a description on the potential impact of proposed research on an associated biomanufacturing

process.

Prior to submission, it is strongly recommended that the PIs contact the program director to avoid the possibility of the proposal being returned without review.

Link to Additional Information: https://new.nsf.gov/funding/opportunities/cellular-biochemical-engineering-0

---

18. Assessing and Predicting Technology Outcomes (APTO), NSF

Application Deadlines:
- **Preliminary Proposal: August 21, 2023**
- **Full Proposal: October 30, 2023**

Award Information: annual budget of $500,000 to $4 million for a period of one to five years

The APTO program is interested in supporting R&D in causal models for assessing and predicting outcomes related to technology capabilities, technology production, and technology use. To that end, the program supports two Lines of Effort (LOE) — one on Technology Outcome Models and the other on Data Sets and Tools. The program will select a cohort of projects which, taken together, are best able to cover the full landscape of technology assessment and prediction across the key technology focus areas listed above.

Individual projects may focus on assessment and prediction of one or more technology outcomes (i.e., technology Capability, Production, Use) and on one or both Lines of Effort (i.e., Technology Outcome Models, Data Sets & Tools). The program will strive to cover the full breadth of areas, as best as possible, across the funded cohort of projects.

1. **Technology Outcomes and Lines of Effort** - The technical goals of the APTO program are methods, with related data sets and accompanying tools, that help to accurately assess and predict three types of technology outcomes:
   - *Capabilities* refers to the state-of-the-art technical performance of an artifact or method;
   - *Production* is the quantity of creation of an artifact or adoption of a method with a given level of Capabilities; this could be a global total or the total for different regions, industries, etc.; and
   - *Use* is the count of instances or volume of utilization of an artifact or method with a given level of Capabilities; this could also be a global total or the total for different regions, consumer groups, etc.

   The APTO program will support the development of causal models that accurately describe how different types and scales of investments change technology outcomes, and by how much. For example, consider a model for high-performance computing that could be built with data until 1980 and make predictions on the state of the art of computer chip capabilities in 1990 — how many would be produced and what parts of the world would use them. Importantly, the models should be capable of including descriptions of what cause(s) led to these outcomes and be able to make accurate predictions of the outcomes when the purported cause(s) change. This causal understanding is essential for correctly assessing the effectiveness of previous investments and for identifying how future investments might change future outcomes.

   The APTO program will support two Lines of Effort (LOEs) – Development of Technology Outcome Models and Development of reference Data Sets along with associated Tools:

   - *Technology Outcome Models* – Causal models that accurately predict technology outcomes and what investments change them, along with accompanying software and a reference to data sets employed; and
   - *Data Sets and Tools* – Derived and/or newly created data sets used for creation and testing of Technology Outcome Models. May include data on technology outcomes or predictors of those outcomes, along with tools developed for efficiently creating such datasets.

2. **Technology Outcome Models** - Projects focusing on technology outcome models should create models that accurately predict future technology outcomes. The ultimate goal is predictive causal models that describe what

actions decision makers could take to change technology outcomes and by how much. Pursuit of this goal may require intermediate modeling efforts that only identify correlation instead of causation, that have low predictive power outside of the data upon which they were built, or that have unexplainable mechanics.

- *Model Inputs*: The focus of APTO is on the role of monetary investments. It is possible that the effectiveness of such investments is heavily mediated and moderated by additional factors. Frequent candidates for predictors for future technology outcomes include R&D funding (public, private) in aggregate or specific to the technology; how the R&D funding is spent (e.g., object-level research vs. collective research tools, grants vs. contracts, etc.); academic publications; patents; publication norms; intellectual property law; the modularity of the technology; scaling relationships in the design of the technology; level of agreement on the dominant technology design; education spending (public, private); graduation rates and numbers of graduates; population growth; size of working age population; historical industrial production of similar technologies; market concentration of producers; market concentration of consumers; changes in outcomes of other technologies; and changes in other outcomes for the same technology.

- *Model Outputs*: Model outputs would typically be the probability that a technology outcome (Capability, Production, or Use) will be within several possible values, by a particular date. For example, model outputs may be expressed as probability distributions across possible outcome values for each future date. APTO is interested in model outputs that are at least 5 years into the model's future (see Accuracy Evaluation) — and ideally decades out.

- *Accuracy Evaluation*: Prediction accuracy improvements are a key goal of the program and will be considered both during the proposal review and in evaluation of multi-year efforts. Prediction accuracy should be tested using methods such as out-of-sample prediction that train the model with data until year N and then predict the outcome in year N+5. Prediction accuracy should be quantified using generalized metrics that comprehensively describe the gap in information between using predicted values to describe the true outcomes (e.g., Kullback-Leibler divergence, cross-entropy, log-loss, etc.). These may be supplemented by additional metrics of accuracy.

- *Benchmarks*: APTO is interested in the development of benchmarks for technology outcome models. For example, a "theory-free" approach may build extrapolation models using only historical trend data, such as ARIMA (Autoregressive Integrated Moving Average) models. Technology outcome models could be compared with such trend extrapolation models to measure their performance.

- *Time Scale*: Predictions and prediction accuracy may be reported at a time scale no shorter than annually, though models may choose to make use of faster time scales.

- *Time Horizon*: Predictions should be made and evaluated at least 5 years into the future from the latest data used in the model. For example, if a technology outcome model is constructed using data until 1980, prediction accuracy from 1985 and onward should be reported.

- *Granularity and Generalization*: The ultimate aim of the APTO program is accurate predictions across many key technologies, but those key technologies are specific: models should make predictions about Capabilities, Production or Use of specific key technologies, and not aggregated measures of technology as a whole like total factor productivity.

3. **Data Sets & Tools** - Awards under the Data Sets & Tools LOE will create data sets, with associated tools, that are useful for creating and testing technology outcome models that accurately predict future technology outcomes. Data sets can be created on the technology outcomes to be predicted (Capabilities, Production, and Use), as well as possible predictors of technology outcomes; these will serve as model outputs or model inputs for the Technology Outcome Models LOE. Data sets can be created through aggregation, preparation, and curation of historical data, including through digitization, archival research, acquisition from data vendors, etc. Data sets can also be built

through creating and collecting novel data, such as through experiments designed to test a particular hypothesized predictor.

4. **Considerations for Use-Inspired Research in the APTO Program**
    - Gaps Between Capabilities, Production and Use
    - Ontologies of Technologies
    - Multidimensional Technology Performance
    - Technical vs. Economic Performance
    - Interactions and Dependencies Between Technologies
    - Outcome Frontiers vs. Populations
    - Theoretical Advances

5. **Outputs** - All models, data, and tools created for the APTO program should be made openly accessible and available. It is possible that certain data sets may be proprietary in nature and cannot be made open access — those should be clearly justified.

Link to Additional Information: https://www.nsf.gov/pubs/2023/nsf23600/nsf23600.htm

---

19. University Training and Research for Fossil Energy and Carbon Management, Dept. of Energy

Application Deadlines: August 7, 2023
Estimated Funding:
- **AOI 1: up to $1,500,000 for up to 36 months**
- **AOI 2: up to $800,000 for up to 36 months**
- **AOI 3: up to $1,000,000 for up to 36 months**
- **AOI 4: up to $500,000 for up to 24 to 36 months**
- **AOI 5: up to $750,000 for up to 24 months**

The University Training and Research (UTR) Program, sponsored by Office of Fossil Energy and Carbon Management (FECM) and administered by the National Energy Technology Laboratory (NETL), has the following primary mission objectives: 1) educate and train the next generation of engineers and scientists to help develop and contribute to a highly-skilled, inclusive, and competitive U.S. workforce and economy; 2) support novel, early-stage research at U.S. colleges and universities that advances the FECM mission of delivering integrated solutions related to fossil energy and carbon management and enable transformation to a sustainable, net-zero greenhouse gas future; 3) increase research and development opportunities for underrepresented and structurally marginalized communities within the U.S. and tap into the innovative and diverse thinking of student researchers at minority serving institutions of higher learning; and, 4) ensure that students are being equipped with cutting-edge, translatable skillsets that will allow them to contribute to the U.S. workforce and greater economy over the course of a longstanding and enduring career.

The UTR Program consists of two (2) sub-programs, including University Carbon Research (UCR) and Historically Black Colleges and Universities and other Minority Serving Institutions (HBCU-MSI). A brief description of each sub-program is provided below:

1. **University Carbon Research (UCR) Program**
    The UCR Program is aligned with Administration goals to successfully achieve net-zero or net-negative GHG emissions by focusing on the following research and development efforts: 1) technology development to mitigate and/or remediate legacy environmental impacts of fossil-based generation systems; 2) assessments of environmental benefits and impacts of utilizing legacy mining materials such as coal-related wastes for the production of low-carbon products and recovery of valuable materials (e.g., critical minerals and rare earth elements); 3) ensuring the safety and environmental integrity of systems that provide benefit for coal and power plant communities.

2. **Historically Black Colleges and Universities and other Minority Serving Institutions (HBCU-MSI) Program**

   This funding opportunity is for the Historically Black Colleges and Universities and Minority Serving Institutions (HBCU-MSI) Program which is funded under the Office of Fossil Energy and Carbon Management (FECM)'s University Training and Research Program. The purpose of the University Training Research (UTR) program is to sustain and achieve a healthy economy, achieve net-zero greenhouse gas (GHG) emissions goals, and remain competitive internationally. To achieve these goals, the United States will need a highly skilled workforce, which includes competent and dedicated scientists, engineers, and managers in technical fields. This workforce will need not only knowledge of advanced technology markets, but also knowledge of and sensitivity for culturally diverse customers and business partners.

The objective of this FOA is to educate and train the next generation of engineers and scientists to fill critical workforce gaps. This will be achieved by funding early-stage decarbonization and net-zero GHG emission technology R&D projects that support FECM program goals. The HBCUMSI Program has additional objectives to increase opportunities and provide investments for traditionally underrepresented and disadvantaged communities within the U.S. to achieve a more racially diverse and highly skilled workforce.

Projects are specifically sought under Five (5) Areas of Interest (AOIs) as follows:

- **AOI 1: Visiting scholars' program to benefit students from minority-serving institutions** - seeks to maximize the number of students who benefit from opportunities provided through the UTR program by fostering new partnerships between institutions with differing research capacity. Projects under this AOI should involve a partnership between one "host institution" and one, or more, MSIs (i.e., "partner institution(s)") which have demonstrably lesser capacity than the host institution to conduct research in FECM-related priority areas.

- **AOI 2 (HBCU-MSI Only): Development of geoscience education curriculum at minority-serving institutions to prepare a workforce for critical mineral production** – seeks to expand and diversify the highly skilled workforce needed to for a domestic industry of critical mineral production, it is paramount that more underrepresented minority students be trained in the fields of mining, metallurgical, and materials engineering. Because relatively few of the currently established programs in these disciplines are located at MSIs, programs and curriculum should first be developed at HBCUs and other MSIs that will expose students to the more general field of geosciences. Applicants must provide a plan for helping students who successfully complete the newly established courses to successfully achieve follow-on opportunities (e.g., academic, industry, etc).

- **AOI 3: Humanities-driven science (including social science), technology, engineering, and mathematics (HDSTEM) to facilitate interdisciplinary student training and technology development** - this area of interest includes funding research and development for collaborative work amongst researchers in social sciences and humanities fields (as a primary focus) in collaboration with researchers in STEM fields, leading to sustainable technology deployment in communities. The majority of the proposed budget must be allocated to the students, PI(s), and/or co-PI(s) in the social sciences and/or humanities. Social science focus areas could include policy, entrepreneurship, urban planning, energy equity, and other sociological topics. Humanity focus areas could include ethnic, art and design, equity, and other considerations relating to the incorporation of new technology into the landscape of a community and/or ecosystem to minimize negative impacts, and ultimately lead to sustainable deployment.

  By investing in the education and training of America's future scientists, engineers, and humanitarians, the FECM UTR program highlights the key role technology plays in addressing America's energy challenges while also being incorporated into our communities in a just manner. With a special emphasis on diversity and inclusion, UTR provides opportunities for traditionally underrepresented communities in STEM fields.

- **AOI 4: Improving critical minerals and materials recovery from coal-based resources** - intends to foster research that will develop and/or promote the development of novel techniques and methods to allow for simultaneous cost-competitive economic recovery of CMs from coal and coal by-products and the reduction of

waste in terms of volume, toxicity, or maintenance costs. Study materials relevant to this AOI may only be collected from previous and sustaining coal mining operations. Applicants are encouraged to apply state of-the-art analytical techniques and instrumentation for thorough and detailed material characterization. Applicants are encouraged to develop and apply novel and burgeoning techniques and/or methods to one or more steps of the CM recovery process specifically for any of the coal-based materials listed above, including extraction, separation, and refinement. Relatively new technologies and methodologies such as ionic liquids (ILs) and artificial intelligence/machine learning (AI/ML) may provide new, previously unrecognized or unrealized avenues to unlock the economic potential of these coal-based feedstocks. This AOI is split into two subtopics (i.e., AOI-4A and AOI-4B). Applicants should select a subtopic and clearly state in their application to which subtopic they are applying with a clear description of which section(s) of the recovery process(es) they will focus on, which feedstock material(s), and which CM(s).

- **AOI 5: Energy Asset Transformation** -
  o **Subtopic A (5A): Pathways to Transition Energy Assets that Maximize Benefits to Local Communities** - research proposals are sought to conduct paper-based analysis and assessments of viable pathways to transition existing fossil-based energy assets to achieve net-zero or net-negative greenhouse gas emissions. The final deliverable will be in the form of a public facing report and related materials on how a fossil asset can transition to support the narrative provided so that it will help the stakeholders with decision making at the host community level, including emphasis on transition options that are 1) technically feasible; 2) provide measurable benefits compatible with host community needs; and 3) facilitate decarbonization.

  o **Subtopic B (5B): Safety and Reliability for Fossil Assets under Decarbonization and Climate Change** - research proposals are sought to conduct paper-based analysis and assessments regarding challenges and solutions for safe and reliable operation of fossil fuel infrastructure under dynamic operational constraints related to decarbonization and climate change that are 1) technically feasible; 2) provide measurable benefits compatible with host community needs; and 3) facilitate decarbonization. Examples of fossil fuel infrastructure include power plants, natural gas pipelines, and refineries. Examples of decarbonization-driven dynamics include lower capacity factor/volumes and different patterns of operation to accommodate growing non-fossil energy use. Examples of climate-driven dynamics include: higher temperature operating conditions and higher amplitude storm conditions.

Link to Additional Information: https://www.fedconnect.net/FedConnect/PublicPages/PublicSearch/Public_Opportunities.aspx

Non-Scientific Forecasted Opportunities

1. **Spotlight on Humanities in Higher Education, NEH**

The Spotlight on Humanities in Higher Education program supports the exploration and development of small projects that would benefit underserved populations through the teaching and study of the humanities. Eligible applicants include small- to medium-size two- and four-year institutions of higher education and nonprofit organizations whose work advances the humanities at these institutions and among their faculty and students. NEH especially welcomes applications from Native American and Indigenous institutions, Historically Black Colleges and Universities, Hispanic-Serving Institutions, Asian American and Native American Pacific Islander-Serving Institutions, Tribal Colleges and Universities, minority-serving institutions, community colleges, rural colleges and universities, schools that have a majority-minority undergraduate enrollment, and those that serve significant numbers of first-generation and nontraditional students.

The Spotlight program supports activities such as curricular or program development, expert consultations, speakers' series, student research, creation of teaching resources, and community engagement. Projects may benefit students, faculty, the institution or organization, and/or the community.

Link to Additional Information: https://www.neh.gov/program/spotlight-humanities-higher-education

2. Dangers and Opportunities of Technology: Perspectives from the Humanities, NEH

The Dangers and Opportunities of Technology: Perspectives from the Humanities (DOT) program supports humanistic research that examines the relationship between technology and society. NEH is particularly interested in projects that examine current social and cultural issues that are significantly shaped by technology. The DOT program is part of the NEH's new initiative, American Tapestry.

Technology has had an enormous impact on modern society, affecting how we work, communicate, learn, engage in the political process, and live. The relationship between technology and culture continues to have dramatic impacts, both positive and negative, on our health, the environment, our social interactions, our government, cultural and educational institutions, the arts, and nearly all other aspects of life.

The program supports projects led by individual researchers (up to $75K) and by collaborative teams (up to $150K).

Link to Additional Information: https://www.neh.gov/program/dangers-and-opportunities-technology-perspectives-humanities

Proposals Accepted Anytime

1. Division of Environmental Biology, NSF
   https://www.nsf.gov/pubs/2022/nsf22541/nsf22541.pdf

2. Computational and Data-Enabled Science and Engineering in Mathematical and Statistical Sciences, NSF
   https://beta.nsf.gov/funding/opportunities/computational-and-data-enabled-science-and-engineering-mathematical-and

3. Condensed Matter and Materials Theory (CMMT), NSF
   https://www.nsf.gov/pubs/2022/nsf22610/nsf22610.htm#pgm_desc_txt

4. Division of Materials Research: Topical Materials Research Programs (DMR: TMRP), NSF
   https://www.nsf.gov/pubs/2022/nsf22609/nsf22609.htm

5. Research in the Formation of Engineers, NSF
   https://beta.nsf.gov/funding/opportunities/research-formation-engineers-rfe

6. Computer and Information Science and Engineering (CISE): Core Programs, NSF – Small Projects
   https://www.nsf.gov/pubs/2022/nsf22631/nsf22631.htm

7. Manufacturing Systems Integration (MSI), NSF
   https://beta.nsf.gov/funding/opportunities/manufacturing-systems-integration-msi

8. Cybersecurity Innovation for Cyberinfrastructure (CICI), NSF
   https://www.nsf.gov/pubs/2023/nsf23532/nsf23532.htm

9. Division of Molecular and Cellular Biosciences Core Programs (MCB), NSF
   https://www.nsf.gov/pubs/2023/nsf23548/nsf23548.htm

10. Division of Integrative Organismal Systems Core Programs, NSF
    https://www.nsf.gov/pubs/2023/nsf23547/nsf23547.htm

11. Electronics, Photonics and Magnetic Devices (EPMD), NSF
    https://beta.nsf.gov/funding/opportunities/electronics-photonics-magnetic-devices-epmd-0

12. Plant Genome Research Program (PGRP), NSF
https://www.nsf.gov/pubs/2023/nsf23559/nsf23559.htm#elig

13. Communications, Circuits, and Sensing-Systems (CCSS), NSF
https://beta.nsf.gov/funding/opportunities/communications-circuits-sensing-systems-ccss-0

14. Fluid Dynamics, NSF
https://beta.nsf.gov/funding/opportunities/fluid-dynamics-2

15. Biophotonics, NSF
https://beta.nsf.gov/funding/opportunities/biophotonics-2

16. Environmental Sustainability, NSF
https://beta.nsf.gov/funding/opportunities/environmental-sustainability-2

17. Particulate and Multiphase Processes, NSF
https://beta.nsf.gov/funding/opportunities/particulate-multiphase-processes-2

18. Interfacial Engineering, NSF
https://beta.nsf.gov/funding/opportunities/interfacial-engineering-0

19. Nanoscale Interactions, NSF
https://beta.nsf.gov/funding/opportunities/nanoscale-interactions-0

20. Combustion and Fire Systems (CFS), NSF
https://new.nsf.gov/funding/opportunities/combustion-fire-systems-cfs

21. Infrastructure Innovation for Biological Research (Innovation), NSF
https://www.nsf.gov/pubs/2023/nsf23578/nsf23578.htm

22. Infrastructure Capacity for Biological Research (Capacity), NSF
https://www.nsf.gov/pubs/2023/nsf23580/nsf23580.htm

23. Energy, Power, Control, and Networks (EPCN), NSF
https://new.nsf.gov/funding/opportunities/energy-power-control-networks-epcn-0

Announcing Previous Important Funding Opportunities

1. Humanities Collections and Reference Resources, NEH
   Deadline: July 18, 2023
   https://www.neh.gov/grants/preservation/humanities-collections-and-reference-resources

2. Small Research Grant Program for the Next Generation of Researchers in AD/ADRD Research (R03 Clinical Trial Optional), NIH
   Deadline: July 19, 2023; October 16, 2023
   https://grants.nih.gov/grants/guide/pa-files/PAR-23-179.html

3. Child Care Access Means Parents in School (CCAMPIS) Program, Dept. of Education
   Deadline: July 31, 2023
   https://www.federalregister.gov/documents/2023/05/31/2023-11469/applications-for-new-awards-child-care-access-means-parents-in-school-program

4. ADVANCE: Organizational Change for Gender Equity in STEM Academic Professions (ADVANCE), NSF
   Deadline: August 7, 2023
   https://www.nsf.gov/pubs/2020/nsf20554/nsf20554.htm

5. Media Projects, NEH
   Deadline: August 9, 2023
   https://www.neh.gov/program/media-projects

6. Public Humanities Projects, NEH
   Deadline: August 9, 2023
   https://www.neh.gov/grants/public/public-humanities-projects

7. Innovative Technology Experiences for Students and Teachers (ITEST), NSF
   Deadline: August 11, 2023
   https://www.nsf.gov/pubs/2022/nsf22585/nsf22585.htm

8. NIH Support for Conferences and Scientific Meetings (Parent R13 Clinical Trial Not Allowed), NIH
   Deadline: August 12, 2023
   https://grants.nih.gov/grants/guide/pa-files/PA-21-151.html

9. Archival Projects, National Historical Publications & Records Commission- National Archives
   Deadline: August 15, 2023
   https://www.archives.gov/nhprc/announcement/archival.html

10. Research and Extension Experiences for Undergraduates (REEU)
    Deadline: August 17, 2023
    https://www.nifa.usda.gov/grants/funding-opportunities/agriculture-food-research-initiative-education-workforce-development

11. Research in the Education Sciences and Using Longitudinal Data To Support State Education Policymaking Grant Programs, Department of Education
    Deadline: August 17, 2023
    https://www.govinfo.gov/content/pkg/FR-2023-06-06/pdf/2023-11915.pdf

12. Decision, Risk and Management Sciences (DRMS), NSF
    Deadline: August 18, 2023
    https://new.nsf.gov/funding/opportunities/decision-risk-management-sciences-drms-0

13. Division of Chemistry: Disciplinary Research Programs (CHE-DRP), NSF
    Deadline:
    - **CAT, CSDM-B and SYN: September 1 - September 30, 2023**
    - **CMI, ECS and MSN: October 1 - October 31, 2023**
    https://www.nsf.gov/pubs/2022/nsf22605/nsf22605.htm

14. Multidisciplinary Research Program of the University Research Initiative (MURI), Department of Defense
    Deadline: September 8, 2023
    https://www.grants.gov/web/grants/view-opportunity.html?oppId=346282

15. Community Infrastructure for Research in Computer and Information Science and Engineering (CIRC), NSF
    Deadline: September 8, 2023
    https://www.nsf.gov/pubs/2023/nsf23589/nsf23589.htm

16. Humanities Connections, NEH
    Deadline: September 7, 2023
    https://www.neh.gov/grants/education/humanities-connections

17. Of the People: Widening the Path: Connecting Communities Digital Initiative – Libraries, Archives and Museums, The Library of Congress
    Deadline: September 7, 2023
    https://grants.nih.gov/grants/guide/pa-files/PA-21-151.html

18. Of the People: Widening the Path: Connecting Communities Digital Initiative – Higher Education, The Library of Congress
    Deadline: September 7, 2023
    https://www.govinfo.gov/content/pkg/FR-2023-04-19/pdf/2023-08249.pdf

19. Professional Development for Agricultural Literacy (PDAL)
    Deadline: September 14, 2023
    https://www.nifa.usda.gov/grants/funding-opportunities/agriculture-food-research-initiative-education-workforce-development

20. Faculty Development in geoSpace Science (FDSS), NSF
    Deadline: September 18, 2023
    https://www.nsf.gov/pubs/2023/nsf23577/nsf23577.htm

21. Workplace Equity for Persons with Disabilities in STEM and STEM Education, NSF
    Deadline: September 19, 2023
    https://www.nsf.gov/pubs/2023/nsf23593/nsf23593.htm

22. Agricultural Workforce Training at Community Colleges (AWT)
    Deadline: September 21, 2023
    https://www.nifa.usda.gov/grants/funding-opportunities/agriculture-food-research-initiative-education-workforce-development

23. NSF Boosting Research Ideas for Transformative and Equitable Advances in Engineering (BRITE), NSF
    Deadline: September 28, 2023
    https://www.nsf.gov/pubs/2023/nsf23592/nsf23592.htm

24. Computer and Information Science and Engineering (CISE) Research Initiation Initiative (CRII), NSF
    Deadline: September 30, 2023
    https://www.nsf.gov/pubs/2023/nsf23576/nsf23576.htm

25. Maximizing Investigators' Research Award (MIRA) for Early-Stage Investigators (ESI) (R35 - Clinical Trial Optional), NIH
    Deadline: October 3, 2023; February 1, 2024
    https://grants.nih.gov/grants/guide/pa-files/PAR-23-145.html

26. Advanced Technological Education (ATE), NSF
    Deadline: October 5, 2023
    https://www.nsf.gov/pubs/2021/nsf21598/nsf21598.htm

27. Research With Activities Related to Diversity (ReWARD) (R01 Clinical Trial Optional), NIH
    Deadline: October 5, 2023

https://grants.nih.gov/grants/guide/pa-files/PAR-23-122.html

28. Racial Equity in STEM Education (EDU Racial Equity), NSF
    Deadline: October 10, 2023
    https://www.nsf.gov/pubs/2022/nsf22634/nsf22634.htm

29. Major Research Instrumentation (MRI) Program: Instrument Acquisition or Development, NSF
    Deadline Window Date(s): October 16, 2023 - November 15, 2023
    https://www.nsf.gov/pubs/2023/nsf23519/nsf23519.htm

30. Academic Research Enhancement Award for Undergraduate-Focused Institutions (R15 Clinical Trial Required), NIH
    Deadline: October 25, 2023
    https://grants.nih.gov/grants/guide/pa-files/PAR-21-154.html

31. Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science (NSF INCLUDES), NSF
    Deadline: October 30, 2023
    https://www.nsf.gov/pubs/2022/nsf22622/nsf22622.htm

32. Discovery Research PreK-12 (DRK-12), NSF
    Deadline: November 8, 2023
    https://www.nsf.gov/pubs/2023/nsf23596/nsf23596.htm#elig

33. NIDA REI: Racial Equity Visionary Award Program for Research at Minority Serving Institutions on Substance Use and Racial Equity (DP1 Clinical Trial Optional), NIH
    Deadline: November 14, 2023
    https://grants.nih.gov/grants/guide/rfa-files/RFA-DA-23-031.html

34. Centers of Research Excellence in Science and Technology (CREST Centers), NSF
    Deadline: December 1, 2023
    https://www.nsf.gov/pubs/2023/nsf23595/nsf23595.htm

35. Food and Agricultural Non-Formal Education (FANE)
    Deadline: December 7, 2023
    https://www.nifa.usda.gov/grants/funding-opportunities/agriculture-food-research-initiative-education-workforce-development

36. Research and Mentoring for Postbaccalaureates in Biological Sciences (RaMP), NSF
    Deadline: January 18, 2024
    https://www.nsf.gov/pubs/2023/nsf23514/nsf23514.htm

37. Measures and Methods to Advance Research on Minority Health and Health Disparities-Related Constructs (R01 Clinical Trial Not Allowed), NIH
    Deadline: February 5, 2024
    https://grants.nih.gov/grants/guide/pa-files/PAR-22-072.html

38. NLM Grants for Scholarly Works in Biomedicine and Health (G13 Clinical Trial Not Allowed), NIH
    Deadline: February 26, 2024
    https://grants.nih.gov/grants/guide/pa-files/PAR-23-183.html

39. STEM Program, Office of Naval Research
    Deadline: April 2, 2024

https://www.grants.gov/web/grants/view-opportunity.html?oppId=347274

40. Measurement Science and Engineering (MSE) Research Grant Programs, National Institute of Standards & Technology (NIST)
    Deadline: Applications will be accepted and considered on a rolling basis as they are received.
    https://www.grants.gov/web/grants/view-opportunity.html?oppId=347512

Universidad de Puerto Rico

LA MEJOR EDUCACIÓN A TU ALCANCE