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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 11/13/2020 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 or MS Teams.

INDEX

1. Organic Agriculture Research and Extension Initiative (OREI), Department of Agriculture, National Institute of Food and Agriculture

Application Deadline: January 14, 2021

The Organic Agriculture Research and Extension Initiative (OREI) seeks to solve critical organic agriculture issues, priorities, or problems through the integration of research, education, and extension activities. The purpose of this program is to fund projects that will enhance the ability of producers and processors who have already adopted organic standards to grow and market high quality organic agricultural products. Priority concerns include biological, physical, and social sciences, including economics. The OREI is particularly interested in projects that emphasize research, education and outreach that assist farmers and ranchers with whole farm planning by delivering practical research-based information. Projects should plan to deliver applied production information to producers. Fieldwork must be done on certified organic land or on land in transition to organic certification, as appropriate to project goals and objectives. Refer to the USDA National Organic Program for organic production standards.

Consistent with 7 U.S.C. 5925b, OREI has eight goals:

1. Facilitating the development and improvement of organic agriculture production, breeding, and processing methods;
2. Evaluating the potential economic benefits of organic agricultural production and methods to producers, processors, and rural communities;
3. Exploring international trade opportunities for organically grown and processed agricultural commodities;
4. Determining desirable traits for organic commodities;
5. Identifying marketing and policy constraints on the expansion of organic agriculture;
6. Conducting advanced on-farm research and development that emphasizes observation of, experimentation with, and innovation for working organic farms, including research relating to production, marketing, food safety, socioeconomic conditions, and farm business management;
7. Examining optimal conservation, soil health, and environmental outcomes relating to organically produced agricultural products; and
8. Developing new and improved seed varieties that are particularly suited for organic agriculture.

Link to Additional Information: https://nifa.usda.gov/funding-opportunity/organic-agriculture-research-and-extension-initiative

2. Viral Pathogen and Surrogate Approaches for Assessing Treatment Performance in Water Reuse, Environmental Protection Agency

Application Deadline: January 6, 2021

The U.S. Environmental Protection Agency (EPA), as part of its Science to Achieve Results (STAR) program, is seeking applications proposing to conduct research on existing and novel surrogates for the detection and monitoring of the presence of human enteric viral pathogens and surrogates in water reuse applications, where wastewater is the source water. Additionally, proposals should aim to identify quantitative reductions of infectious viral pathogens and surrogates across unit treatment processes and full treatment trains to improve viral risk assessments; viral log reduction targets; and unit process credits for water reuse applications.

EPA is issuing this Request for Applications (RFA) to support research into the development of standardized approaches to identify, characterize, and validate suitable viral surrogates and enumeration methods for quantifying the potential human health risks posed by the levels of human enteric viral pathogens found in reclaimed wastewater. Information on the concentrations of infectious viral pathogens relative to the concentrations of viral surrogates is also needed. Additionally, data on the inactivation or removal of viral pathogens and surrogates are needed to:

1. establish and verify viral pathogen log-reduction values for individual unit treatment processes and through treatment trains,
2. inform monitoring, and
3. optimize treatment train performance.

For the purpose of this RFA, viral surrogates are defined as an organism, particle, or compound used to study the fate of a pathogen in a given environment (1). Viral surrogates may include nonpathogenic (e.g., coliphage, pepper mild mottle virus [PMMoV], etc.) or pathogenic viruses (e.g., adenovirus, norovirus, etc.) and/or other types of indicators demonstrated to predict the presence of and/or risk of illness from human pathogenic viruses (e.g., enterococcus qPCR [EPA Method 1609], the human marker HF183, etc.) via co-occurrence studies and quantitative microbial risk assessments.

Results from studies funded by this RFA could provide information that could help refine the understanding of fit-for-purpose specifications related to multiple applications of recycled water. The same information could be used to develop and validate unit treatment processes and understand treatment performance to help promote water reuse opportunities. Data on improved surrogates and methods provide better information on the quality, and perhaps the quantity, of water available for reuse, thus potentially increasing the opportunities for reuse applications. Finally, the RFA can enhance the coordination of water reuse research to optimize its value, better identify critical science gaps, and accelerate the opportunities for reuse.

Link to Additional Information: https://www.epa.gov/research-grants/viral-pathogen-and-surrogate-approaches-assessing-treatment-performance-water-reuse

3. Energy Program for Innovation Clusters (EPIC), Department of Energy - Headquarters

Application Deadline: February 3, 2021

The Department of Energy, Office of Technology Transitions (OTT) seeks to support the formation and development of regional clusters supporting entrepreneurs and startups by funding innovation-accelerating organizations that demonstrate the ability to advance energy and related technologies in collaboration with and with the support of state, regional, and/or local entities.

Innovation clusters enhance national energy entrepreneurship and commercialization. The U.S. Department of Energy's (DOE's) Energy Program for Innovation Clusters (EPIC) Funding Opportunity Announcement (FOA) seeks to fund the most creative, comprehensive, and impactful innovation-accelerating organizations that support energy and related hardware technology development and testing in regional innovation clusters—geographic concentrations of specialized skills, industries, and technology sectors. Innovation-accelerating, entrepreneurially-focused organizations (often referred to as accelerators or incubators) are critical to the growth of an innovation economy; these organizations help entrepreneurs accelerate the launch, growth, and scale of their businesses, ultimately resulting in the commercialization of new technologies and business models, and development of jobs in the United States.

Through this FOA, the Office of Technology Transitions (OTT) seeks to support the formation and development of regional clusters supporting entrepreneurs and startups by funding innovation-accelerating organizations that demonstrate the ability to advance energy and related technologies in collaboration with and with the support of state, regional, and/or local entities. Through this Funding Opportunity, DOE plans to fund four to eight innovation-accelerating organizations to propose and implement regional engagement plans, and guide companies as they scale to production and enhance our energy manufacturing competitiveness. An innovation-accelerating organization's role and participation in its local ecosystem is a critical element to the FOA as OTT recognizes the importance of clusters, which increase productivity of area companies; drive the direction and pace of innovation—thus spurring future productivity growth; and stimulate the formation of new businesses, which expands and strengthens the cluster itself.

Link to Additional Information: https://ott-exchange.energy.gov/ and search for funding opportunity number **DE-FOA-0002425**

4. Institutes for Advanced Topics in the Digital Humanities, National Endowment for the Humanities

Application Deadline: March 2, 2021

The National Endowment for the Humanities (NEH) Office of Digital Humanities is accepting applications for the Institutes for Advanced Topics in the Digital Humanities program. The purpose of this program is to support national or regional (multistate) training programs for scholars, humanities professionals, and advanced graduate students to broaden and extend their knowledge of digital humanities. Through this program NEH seeks to increase the number of humanities scholars and practitioners using digital technology in their research and to broadly disseminate knowledge about advanced technology tools and methodologies relevant to the humanities.

The Institutes for Advanced Topics in the Digital Humanities (IATDH) program supports national or regional (multistate) training programs for scholars, humanities professionals, and advanced graduate students to broaden and extend their knowledge of digital humanities. Through this program NEH seeks to increase the number of humanities scholars and practitioners using digital technology in their research and to broadly disseminate knowledge about advanced technology tools and methodologies relevant to the humanities.

Applicants may apply to create institutes that are a single opportunity or are offered multiple times to different audiences. Institutes may be as short as a few days or as long as six weeks and held at a single site or at multiples sites; virtual institutes are also permissible. Training opportunities could be offered before or after regularly occurring scholarly meetings, during the summer months, or during appropriate times of the academic year. The duration of a program should allow for full and thorough treatment of

the topic; it should also be appropriate for the intended audience.

These professional development programs may focus on a particular computational method, such as network or spatial analysis. They may also target the needs of a particular humanities discipline or audience.

Today, digital resources and other complex data—their form, manipulation, and interpretation—are as important to humanities study as more traditional research materials. Datasets, for example, may represent digitized historical records, high-quality image data, or even multimedia collections, all of which are increasing in number due to the availability and affordability of mass data storage devices and international initiatives to create digital content. Moreover, using computational approaches to explore absences or omissions in humanities datasets is becoming an important scholarly research area. And finally, extensive networking capabilities, sophisticated analytical tools, and new collaboration platforms are simultaneously providing and improving interactive access to and analysis of the data as well as a multitude of other resources.

Link to Additional Information: https://www.neh.gov/grants/odh/institutes-advanced-topics-in-the-digital-humanities

5. Computational Chemical Sciences, Department of Energy - Office of Science

Application Deadline: February 8, 2021

The DOE SC program in Basic Energy Sciences (BES) hereby announces its interest in receiving new and renewal applications from small groups (2-3 principal investigators) and integrated multidisciplinary teams (typically from multiple institutions) in Computational Chemical Sciences (CCS). Single-investigator applications are not responsive to the objectives of this FOA. CCS will support basic research to develop validated, open-source codes for modeling and simulation of complex chemical processes and phenomena that allow full use of emerging exascale and future planned DOE leadership-class computing capabilities. The focus for CCS is on developing capabilities that allow modeling and simulation of new or previously inaccessible complex chemical systems and/or provide dramatic improvement in fidelity, scalability, and throughput. Teams should bring together expertise in domain areas (e.g., electronic structure, chemical dynamics, statistical mechanics, etc.) and other areas important to advance computational tools such as data science, algorithm development, and software architectures. Priority will be given to efforts that address reaction chemistry across multiple scales in complex environments important in geosciences, catalysis, biochemistry, or electrochemistry.

CCS will continue to support the DOE Exascale Computing Initiative (ECI). The ECI aims to accelerate the research and development needed to overcome key exascale challenges and maximize benefits of high-performance computing. This funding opportunity continues the BES commitment to ECI by developing open-source codes that can take full advantage of emerging exascale and future planned DOE leadership-class computing facilities.

Applications that are responsive to this FOA will:

- Focus on development of open-source, community-based codes that can be deployed on emerging exascale and future leadership class computers to model systems of relevance to the BES mission, specifically those related to chemical sciences, geosciences, and biosciences.
- Focus on research leading to open-source software for description of chemical and molecular processes. Suitable types of software will address the intermediate to strong correlation and coupling regime, excited states, transport, dynamics, and/or electronic or optical properties, or will accurately describe the behavior of molecular quantum-information systems that are based upon high-fidelity processing of light, charge, or spin.
- Describe a plan to deliver validated research codes and the associated data to academia, National Laboratories, and industry. Software developed under this FOA should have broad applicability. All efforts should describe how their efforts will develop and deploy modular capabilities. Efforts must also describe their plan to distribute the software and foster community adoption.
- Provide a detailed plan for the full utilization of emerging exascale national leadership computing facilities.
- Explicitly excluded are proposals that are limited to use of existing quantum-based methods in their traditional regimes of application. Efforts aimed at extending currently attainable length/time scales or increasing attention to complexity and that algorithmically match efficiency enhancements offered by next generation computers will receive priority.

Link to Additional Information: Go to www.grants.gov and search for opportunity **DE-FOA-0002426**

6. Science & Technology for Advanced Manufacturing Projects (STAMP), Department of Defense, Office of Naval Research

Application Deadline: October 30, 2021

The Department of Defense Manufacturing Technology Program (ManTech) is the Defense Department's investment mechanism for staying at the forefront of defense-essential manufacturing capability. The Program develops technologies and processes for the

affordable and timely production and sustainment of defense systems. The Program impacts all phases of acquisition. It aids in achieving reduced acquisition and total ownership costs by developing, maturing, and transitioning key manufacturing technologies. ONR will focus investments on those that have the most benefit to the warfighter and include quick-hitting, rapid response projects to address immediate manufacturing needs.

The ManTech Program targets the needs of our warfighters and weapon system programs by helping to find and implement affordable low-risk solutions. The ManTech Program:

- Provides the crucial link between technology invention and development and industrial applications;
- Matures and validates emerging manufacturing technologies to support low-risk implementation in industry and DoD facilities, for example depots and shipyards;
- Addresses production issues from system development through transition to production and sustainment;
- Disseminates information concerning improved manufacturing improvement concepts, including information on such matters as best manufacturing practices, product data exchange specifications, computer-aided acquisition and logistics support, and rapid acquisition of manufactured parts; and
- Sustains and enhances the skills and capabilities of the manufacturing work force.

Using the authority of the Manufacturing Technology Program codified at 10 U.S.C. §2521, the Department of Defense (DoD) established a group of manufacturing innovation institutes in technology areas with relevance to military systems. These institutes are executed and managed by the services (Army, Air Force, and Navy). Each institute consists of members, including private companies, nonprofit organizations, academic institutions, federal laboratories, and state and local governments. These DoD-managed institutes are also involved in the Department of Commerce Manufacturing USA network as part of a long-term collaborative partnership-of-choice in light of a common purpose.

The overall goal of this effort is to continue to support Manufacturing Technology projects that offer potential for advancement and improvement of military operations in areas that address the focus areas of the ManTech Program, as noted in the above paragraphs. The long-term goals of this BAA are to create market expansion; and components and systems utilizing new optimized high performing material systems across defense, aerospace, automotive, energy, and consumer products industries.

The focus of this BAA is primarily on projects that continue to advance the systems engineering approach needed for the design, fabrication, and manufacture of structural components to address challenges in system weight, performance, affordability, and/or survivability. The foundation of this approach should include the integration of materials information, captured in computational tools, with engineering product performance analysis and manufacturing-process simulation termed commonly as Integrated Computational Materials Engineering (ICME). From this foundation it is expected the integration of manufacturing process information and product performance information utilizing the full range of engineering and analytical tools, processes, and principles to improve efficiency and effectiveness of their integrated approach. The intent is to bring together materials designers, materials suppliers, product designers, and manufacturers to collaborate on the design, production, and commercialization of novel affordable, manufacturable systems. Projects may include basic and applied research, technology and component development, and prototyping; but may also focus on manufacturing supply-chain technical support and integration, workforce development, and manufacturing education.

Prior to preparing proposals, potential offerors are encouraged strongly to contact the ONR technical point of contact (POC) identified for this program.

Link to Additional Information: https://www.onr.navy.mil/en/work-with-us/funding-opportunities

7. Multi-Level HIV Prevention Interventions for Individuals at the Highest Risk of HIV Infection, Department of Health and Human Services, National Institutes of Health

Application Deadline: January 15, 2021

This initiative will support R01 projects that test the effectiveness of multi-level interventions to prevent HIV in high-risk health disparity populations or subgroups in one or more geographic areas with a high rate of new infections. This initiative will support research projects that test the effectiveness of multi-level interventions to prevent HIV infection in high-risk health disparity populations or subpopulations in one or more geographic hotspots (see https://files.hiv.gov/s3fs-public/Ending-the-HIV-Epidemic-Counties-and-Territories.pdf for a list of hotspots). Viral suppression as a prevention strategy is not a subject of this RFA but is the topic of a related FOA, RFA-MD-21-002. The population focus is expected to include HIV-negative MSM and/or transgender women who are African American or Latino/a, as these populations have the highest risk for acquiring new HIV infections and account for over half of new infections. Projects may include these populations globally or specific subpopulations that are relevant to the selected hotspots. Examples of potential subgroups include, but are not limited to, MSM or transgender women who are African American or Latino; identify as bisexual; have mental health or substance use disorders; belong to house and ballroom communities; or who are

under 18, homeless, recent immigrants, involved in the criminal justice system, or engaged in sex work or exchange sex. Other health disparity populations in addition to Black and Latino MSM and transgender women that could be considered for inclusion are non-Hispanic White MSM, cisgender Black or Latina women, or rural residents who inject drugs). Justification of the selected target population(s) must be based on (1) local surveillance, clinical, or research data demonstrating a high incidence of new HIV infections and/or low rates of PrEP use, condom use or HIV testing within the hotspot, and (2) evidence that existing local, state, or federal HIV prevention and treatment initiatives are not including, reaching, or effective for these populations. It is expected that the target populations may be more narrowly defined in urban hotspots, where significant HIV prevention programs and services already exist, than those in underserved urban or rural hotspots, where services may be limited for all populations. National or statewide data may provide guidance in the absence of hot spot data.

Projects are generally expected to be clinical trials in which participants or settings are prospectively assigned by study investigators to intervention conditions as part of the project. However, projects may also involve the evaluation of initiatives being implemented by county, state, or regional service providers (independent of NIH funding), where prospective assignment by study investigators does not occur. Rigorous quasi-experimental study designs with appropriate control or comparison conditions or populations are expected for projects that are not clinical trials.

Areas of special interest include, but are not limited, to the following:

- Testing of interventions in multiple geographic hotspots.
- Use of cluster randomized trials or multi-site quasi-experimental studies.
- Interventions that include clinician- or healthcare setting-level intervention components to enhance cultural competency, reduce health-care related stigma and discrimination, and increase clinician comfort and willingness to prescribe PrEP.
- Engagement of community members of the target high-risk health disparity populations or subgroups as investigators, advisors, or peer interventionists.
- Collaboration with diverse local stakeholders in addition to HIV-prevention service providers, including school systems, school-based student or parent associations, community-based organizations, consumer organizations, and faith-based organizations, to enhance intervention relevance, feasibility, and sustainability.
- Projects that examine cost-effectiveness of intervention implementation and delivery.

Link to Additional Information: http://grants.nih.gov/grants/guide/rfa-files/RFA-MD-21-001.html

8. American Mathematical Society Invites Applications for Youth Summer Programs

Application Deadline: December 15, 2020

A professional society since 1888, the American Mathematical Society works to advance research and connect the diverse global mathematical community through publications, meetings and conferences, MathSciNet, professional services, advocacy, and awareness programs. To that end, the society invites applications for its Epsilon Fund Grants for Young Scholars Program. Through the program, grants of up to $15,000 will be awarded in support of existing summer programs for mathematically talented high school students.

Programs may focus on problem solving or mathematical research in any area of mathematics. Funding is for one year, and it is expected that half of the award will be used for student scholarships and half for program expenses. No indirect costs will be covered. To be eligible, programs must have been in existence for at least one year, and preferably longer.

The AMS Epsilon Fund was established to help support summer mathematics programs for mathematically talented high school students. The goal of the program is to aid and promote programs that support and nurture mathematically talented youth in the United States, and to make these opportunities available to a broad pool of mathematically talented students. Although we hope that this will motivate students to pursue a career in mathematics, the real purpose is to help create a body of individuals who have struggled with challenging mathematics and developed an appreciation for and confidence in their ability to take on rigorous intellectual pursuits.

The Epsilon Fund seeks to fund programs that follow the basic model that has proved so successful in the past: the programs should run over a period of multiple weeks during the summer, bring in at least twenty high school students with mathematical talent, and generally be directed by mathematicians.

Within these broad guidelines, many different models of programs are considered eligible and are welcome to apply. Programs may focus on any area of mathematics, pure or applied, and be of narrow or broad scope, or they may be specifically targeted to one high school year (e.g., 9th graders), or to mathematically talented women or minorities. Programs that concentrate on problem solving or mathematical research or both are welcome to apply as well. Even "summer" is not a firm requirement, though it is expected that most,

if not all, will take place during the summer. Programs that use undergraduate or graduate students along with mathematicians in their teaching are particularly encouraged.

We recognize that there is no magic formula that makes the best mathematics programs. That said, our first and main objective is to support programs that are most successful in nourishing mathematically talented youth.

Programs that have run successfully for at least one year are given preference for funding over new programs. The selection committee, in an effort to encourage new programs, would like to be as flexible as possible with the understanding that funds are limited and recently begun programs will have to show evidence of a good fit between their plans and the Epsilon Fund's mission. All programs are encouraged to make an extra effort to attract members of underrepresented groups. It is our belief that true mathematical talent lives in students in rural areas as well as cities, in students of both genders and of all colors.

Link to Additional Information: http://www.ams.org/programs/edu-support/epsilon/emp-epsilon

9. Center for Retirement Research Welcomes Proposals for Steven H. Sandell Grant Program

Application Deadline: January 31, 2021

The Center for Retirement Research at Boston College sponsors the annual Steven H. Sandell Grant Program for scholars in the field of retirement or disability research and policy. The program is funded by the U.S. Social Security Administration to provide opportunities for junior or non-tenured scholars (within seven years of receiving their PhD) from all academic disciplines to pursue cutting-edge projects on retirement or disability issues.

Research focus areas include trends in disability; determining disability; requirements of work in the modern economy; informing long-term projections and models; improving communication and outreach; state and local pensions for non-covered workers; modernizing totalization agreements; economic security of SSA beneficiaries; work-activity retention of disabled beneficiaries with overpayments; and improving service delivery.

Through the program, up to three grants of $45,000 will be awarded based on the quality of applicants' proposals and proposed budgets. Applicants are required to complete the research outlined in the proposal within a year of the award. Grant recipients may be required to present their work to the Social Security Administration in Washington, D.C., or Baltimore, Maryland.

The Principal Investigator (PI) and Co-Principal Investigator (Co-PI), if applicable, are required to have a Ph.D. or comparable professional certification. Grants are not intended to fund dissertation research. The PI and the Co-PI(s) must be junior or non-tenured scholar(s) who are within 1-7 years of completing their Ph.D. or comparable professional certification. Please note that applications with senior or tenured co-authors may be disqualified. The scholar(s) must be employed fulltime at an academic or research institution. The applicant must be affiliated with an institution (with accreditation equivalent to U.S. standards) willing to enter into a sub-agreement with Boston College.

To download the proposal guidelines and a budget matrix, see the Center for Retirement Research website.

Link to Additional Information: https://crr.bc.edu/about-us/grant-programs/steven-h-sandell-grant-program-2/

10. National Academies of Sciences, Engineering, and Medicine Invites Applications for Ford Foundation Fellowships

Application Deadline: December 10, 2020

Through fellowship programs administered by National Academies of Sciences, Engineering, and Medicine, the Ford Foundation seeks to increase the diversity of the nation's college and university faculties by increasing their ethnic and racial diversity, maximizing the educational benefits of diversity, and increasing the number of professors who can and will use diversity as a resource for enriching the education of all students.

To that end, three types of fellowships will be awarded through the program:

- Pre-doctoral Awards — A stipend of $27,000 a year for three years will be awarded in support of individuals engaged in graduate study leading to a PhD or ScD degree. Approximately seventy fellowships will be awarded in this category. Applications due December 10, 2020.

- Dissertation Awards — A one-year stipend of $28,000 will be awarded to individuals working to complete a dissertation leading to a PhD or ScD degree. Approximately thirty-six fellowships will be awarded in this category. Application due December 10, 2020.
- Postdoctoral Awards — A one-year stipend of $50,000 will be awarded to individuals engaged in postdoctoral study after the attainment of the PhD or ScD degree. Approximately twenty fellowships will be awarded in this category. Application due December 17, 2020.

In addition to a stipend, fellows will receive an invitation to attend the Conference of Ford Fellows, a unique national convening of a group of high-achieving scholars committed to diversifying the professoriate and using diversity as a resource for enriching the education of all students.

Awards will be made for study in research-based programs within the following major disciplines and related interdisciplinary fields: American studies, anthropology, archaeology, art and theater history, astronomy, chemistry, computer science, cultural studies, communications, earth sciences, economics, education, engineering, ethnic studies, ethnomusicology, geography, history, international relations, language, life sciences, linguistics, literature, mathematics, performance study, philosophy, physics, political science, psychology, religious studies, sociology, urban planning, and women's studies. Also eligible are interdisciplinary ethnic studies programs such as African American studies, Native American studies, and other interdisciplinary programs such as area studies, peace studies, and social justice.

Eligible applicants include citizens, nationals, and permanent residents (holders of a Permanent Resident Card) of the United States, as well as individuals granted deferred action status under the Deferred Action for Childhood Arrivals Program, Indigenous individuals exercising rights associated with the Jay Treaty of 1794 and political asylees and refugees, regardless of race, national origin, religion, gender, age, disability, or sexual orientation, are eligible to apply.

Link to Additional Information: http://sites.nationalacademies.org/pga/fordfellowships/index.htm

11. Climate Program Office (CPO), Regional Integrated Sciences and Assessments (RISA) Program FY2021, Department of Commerce

Application Deadline: February 16, 2021

The Regional Integrated Science and Assessments (RISA) Program resides in the Climate Program Office's (CPO) Climate and Societal Interactions Division (CSI). CSI has traditionally been a home for high-impact science, catalyzing some of the earliest U.S. government investments in regionally scaled, societally relevant, interdisciplinary climate research and engagement focused on reducing vulnerability and risk through the use of climate knowledge and information. Today, CSI continues to work with partners to enhance community and national resilience in the face of climatic changes, through research and engagement activities designed to connect innovative science directly to complex and dynamic preparedness, adaptation and resilience challenges. Programs managed by CSI are a key component of NOAA's cutting-edge research enterprise, which has evolved over time to include the private sector, NGOs, interdisciplinary teams and the social sciences at large. Moving forward, the CSI Division is reorganizing to include the new Adaptation Science Program as well as continuing to support the RISA Program, in order to streamline, expand and build upon past investments, and address cutting-edge topics in adaptation science - a critical cornerstone to a more resilient future.

The RISA program supports the development of knowledge, expertise, and abilities of decision-makers to plan and prepare for climate variability and change. Through regionally-focused and interdisciplinary research and engagement teams, RISA builds and expands the Nation's capacity to adapt and become resilient to extreme weather events and climate change. RISA teams accomplish this through co-developed applied research and partnerships with public and private communities. A central tenet of the RISA program is that learning about climate adaptation and resilience is facilitated by and sustained across a wide range of experts, practitioners, and the public. As such, the RISA program supports a network of people, prioritizing wide participation in learning by doing, learning through adapting, and managing risk with uncertain information. Early decades of the program focused on understanding the use of climate information at regional scales (e.g., through experimental seasonal outlooks), improving predictions and scenarios, building capacity for drought early warning, and advancing the science of climate impact assessments. More recently, emphasis has shifted to address the growing urgency to advance approaches that tackle the complex societal issues surrounding adaptation planning, implementation, and building community resilience. To do so, RISA continues to prioritize collaborative approaches that incorporate multiple knowledge sources and integrate social, physical, and natural science, resulting in long-term support of and increased capacity for communities. As the adaptation community in the United States advances and evolves, RISA seeks to support new creative, solution-oriented approaches that are both responsive to communities and that integrate across silos of scientific knowledge and expertise. Central to achieving the RISA mission are:

- Regional Relevance, Local Expertise
- Integrated Scientific Approaches

- Knowledge-to-Action Partnerships
- A National Network of Resilience Researchers and Adaptation Science Specialists

The RISA program encourages applicants and awardees to support the principles of justice, equity, diversity, and inclusion when writing their proposals and performing their work. Ensuring justice and equity -means paying particular attention to the most vulnerable populations, which are often low-income, those already overburdened by pollution, those who lack economic or social opportunity, and people facing disenfranchisement. Diversity here is defined as a collection of individual attributes that together help organizations achieve objectives. Inclusion is defined as a culture that connects each person to the larger organizing structure. Promoting justice, equity, diversity, and inclusion improves the creativity, productivity, and vitality of the communities in which the program engages.

The RISA program is holding two competitions under this Federal Funding Opportunity:

- Competition for one RISA team in each of the following nine regions with existing RISA activities: Northeast, MidAtlantic, Intermountain West, Carolinas, Great Lakes, Alaska, Pacific Islands, South Central, and Pacific Northwest
- **Competition for collaborative planning activities** in the Southeast and the **U.S. Caribbean**

Link to Additional Information: Go to www.grants.gov and search for opportunity **NOAA-OAR-CPO-2021-2006677**

12. Agriculture and Food Research Initiative Competitive Grants Program Sustainable Agricultural Systems (SAS), Department of Agriculture, National Institute of Food and Agriculture

Application Deadline: Letters of Intent January 7 & March 4, 2021; Full Applications: April 1 & July 1, 2021

Applications to the Agriculture and Food Research Initiative - Sustainable Agricultural Systems (SAS) Request for Applications (RFA) must focus on approaches that promote transformational changes in the U.S. food and agriculture system. NIFA seeks creative and visionary applications that take a systems approach for projects focused on the themes in the USDA Science Blueprint:

(1) sustainable agricultural intensification;
(2) agricultural climate adaptation;
(3) value-added innovation; and/or
(4) food and nutrition translation.

These projects are expected to significantly improve the supply of affordable, safe, nutritious, and accessible agricultural products, while fostering economic development and rural prosperity in America. These approaches must demonstrate current needs and anticipate future social, cultural, behavioral, economic, health, and environmental impacts. Additionally, the outcomes of the work being proposed should result in societal benefits, including promotion of rural prosperity and enhancement of quality of life for all those involved in food and agricultural value chains from production to utilization and consumption.

For FY 2021, applications to the SAS RFA must focus on systems approaches that promote transformational changes in the U.S. food and agricultural system within the context of the long-term goal of increasing American agricultural production by 40% with a reduction in environmental footprint by 50% by 2050. Projects are expected to significantly improve the supply of affordable, safe, nutritious, and accessible agricultural products, while fostering economic development and rural prosperity in America. These approaches must demonstrate current needs and anticipate future social, cultural, behavioral, economic, health, and environmental impacts. Additionally, the outcomes of the work being proposed should result in societal benefits, including promotion of rural prosperity and enhancement of quality of life for all those involved in food and agricultural value chains from production to utilization and consumption.

Link to Additional Information: https://nifa.usda.gov/funding-opportunity/afri-sustainable-agricultural-systems-competitive-grants-program

13. Vision and Change in Undergraduate Biology Education, National Science Foundation

Application Deadline: March 1, 2021

The National Science Foundation's (NSF's) Division of Undergraduate Education (DUE) in the Directorate for Education and Human Resources (EHR) acknowledges the need to expand and chronicle educational change efforts across the nation. To this end, DUE invites proposals to study the impact of the Vision and Change (V&C) movement in Undergraduate Biology Education. Specifically, this program seeks to support projects that evaluate a combination of factors such as the awareness, acceptance, adoption, and

adaptation of V&C principles and outcomes including changes in curriculum, laboratories, and student retention, completion, and learning. Collectively, results of these projects are anticipated to describe the nature and extent of V&C's use within the undergraduate biology curriculum. The projects could also describe key factors and approaches taken by the V&C community that have the potential to be useful for improving undergraduate education in other scientific disciplines or in interdisciplinary STEM education.

Advances in the frontiers of biology and educational research have enabled the biological sciences communities to explore effective teaching approaches and promote student learning (NRC 2003, 2009). Key stakeholders of these communities were energized to revise and revitalize biology education and to launch the V&C movement (AAAS 2011, 2015, 2018). It is now time to examine the roles of V&C in the improvements in biology education.

DUE has a long history of promoting systemic improvements in how faculty, departments, and STEM professional societies develop and apply innovations in undergraduate STEM education. As summarized by Levers for Change (AAAS, 2019), most successful efforts have been focused on specific STEM disciplines. NSF is interested in exploring potential relationships between the V&C principles and the current national state of undergraduate biological education, including biological knowledge, concepts, and science process skills. This program description is a call for proposals to analyze the breadth and fidelity with which V&C principles were implemented and the resulting effects on students. Proposal budgets should be commensurate with the scope and scale of the proposed work and level of effort.

Although the list below is by no means exhaustive, proposals of interest include projects that aim to examine one or more of the following areas:

1) Analyses of the nature, extent of use, and influence of the V&C principles on undergraduate biology education across multiple institutions and/or biological disciplines;
2) Investigations of how V&C influences faculty to change their teaching strategies and learning approaches, content and curriculum, and their expectations of students;
3) Examinations of changes in students' conceptual understanding, skills, and competencies; determination of how these gains impact science self-efficacy, retention, and graduation rates, as well as diversity and inclusion in biological sciences; and analyses of potential causation and/or correlation of these outcomes with V&C principles;

Determinations of how V&C has impacted professional societies and engaged them in undergraduate biology education, setting standards, providing vetted educational resources, engaging students in both research and education, enhancing professional development, and implementing standards of recognition or status for educators.

Link to Additional Information: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505859

Strategic
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