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## 1. EPA Science to Achieve Results (STAR) program, “Drivers and Environmental Impacts of Energy Transitions in Underserved Communities.”

The Environmental Protection Agency (EPA) released a new [solicitation](#) under the Science to Achieve Results (STAR) program, “Drivers and Environmental Impacts of Energy Transitions in Underserved Communities.” Through this opportunity, EPA is seeking to augment its capacity to conduct “community-engaged research” that will characterize the impacts of energy transitions on disadvantaged communities, identify ways to help maximize the positive impacts of the clean energy transition on these communities, understand the factors that contribute to the adoption of renewable energy and related technologies at the household and community levels, and identify and evaluate multi-pollutant or multi-sector approaches to achieve environmental goals. A total of up to \$11 million will be available through this solicitation, of which \$6 million may go to regular applications (up to \$1.125 million over four years) and at least \$5 million will go to five early career applications (up to \$650,000 million over four years). Full proposals are due **April 28, 2022**, and a [webinar](#) on this opportunity will take place on **February 10, 2022**.

## 2. NSF Releases Solicitation for Cultural Transformation in the Geoscience Community (CTGC)

*Lewis-Burke Associates LLC – February 3, 2022*

The National Science Foundation (NSF) has released a new solicitation for Cultural Transformation in the Geoscience Community (CTGC) which is aimed at addressing the underrepresentation of people of color, LGBTQIA+, and persons with disabilities in the geoscience field. This program builds on previous iterations such as the GEO Opportunities for Leadership in Diversity (GOLD) program which funded smaller planning and exploratory grants in this area in addition to NSF’s long-standing ADVANCE and INCLUDES programs. The CTGC program will fund two tracks:

- Implementation Grants at up to \$1.5 million for the establishment of research cohorts aimed at fostering growth for a particular set of underrepresented individuals. This will include fostering a safe, equitable, and rewarding research environment with a focus on community-driven Earth Systems projects. Cohort recruitment and mentoring will be a large piece of these projects. Institutions applying for the Implementation Grants should already have a demonstrated track record of fostering the success of underrepresented scientists. Minority Serving Institutions are especially encouraged to apply.
- Planning Grants which will be funded at up to \$120,000 each will focus on building capacity and programs to reach the next stage and work toward an Implementation Grant. These should include developing a strategy to foster the success of Black, Indigenous, People of Color (BIPOC), persons with disabilities, LGBTQIA+, and other individuals from marginalized groups.

### **Due Dates:**

- **Letters of intent** are required only for Implementation Grants and are due March 14, 2022.
- **Full Proposals** are due May 2, 2022.

- **Total Funding and Award Size:** NSF has anticipated funding of \$10 million for this competition. There are expected to be three implementation grants worth up to \$1.5 million each with potential to renew after five years and eight planning awards of up to \$120,000.

**Eligibility and Proposal Limitations:** Proposals may be submitted by U.S. academic institutions or non- profits. Organizations may only lead on a single proposal.

*Sources and Additional Information:*

- The complete solicitation is available at <https://www.nsf.gov/pubs/2022/nsf22562/nsf22562.pdf>.
- The CTGC program page is at <https://beta.nsf.gov/funding/opportunities/cultural- transformation- geoscience-community-ctgc/>.

### 3. DOE Releases \$25 Million Solicitation for Concentrating Solar-Thermal Power Research, Development, and Demonstration

*Lewis-Burke Associates LLC – February 8, 2022*

The Department of Energy (DOE) Solar Energy Technologies Office (SETO) released a \$25 million funding opportunity for innovative research, development, and demonstration (RD&D) that accelerates the large-scale development and deployment of solar technology. **Concept papers are due March 16, 2022.** Projects will focus on lowering the cost of Concentrating Solar-Thermal Power (CSP) technologies in order to enable substantial deployment of CSP to decarbonize the electricity grid and energy system. In Spring 2022, DOE plans to release another solar energy focused funding opportunity to support research and development of photovoltaics and associated energy storage and manufacturing issues.

SETO plans to fund projects in two specific areas of interest:

- **Concentrating Solar-Thermal for Industrial Decarbonization** to advance concentrating solar thermal energy generation coupled with thermal energy storage and integrated with high- temperature process technologies to produce economically important products, like steel, cement, ammonia, chemicals, and fuels.
- **Concentrating Solar-thermal Particle Technologies for Generation 3 CSP and Beyond (Gen3++)** to build on SETO's Gen3 CSP to develop systems that can operate at temperatures above 700°C.

Due to the typically non-linear correlation between component size and performance for new thermal system technologies, proposals need to respond withing the Scalable Outputs for Leveraging Advanced Research (SOLAR) Tier structure. Proposals must specifically indicate which of the three SOLAR Tiers, listed below, their project addresses and a vision for advancing the technology through each remaining Tier towards a commercial-scale demonstration.

- Tier 1. Research, Discover, and Analyze
- Tier 2. Develop, Design, and De-risk
- Tier 3. Build, Test and Partner

**Due Dates:** Concept papers are due March 16, 2022, and full Proposals are due May 16, 2022. DOE plans to make award decisions in July 2022 and award announcements in September 2022.

**Eligibility and Proposal Limitations:** Proposals may be submitted by U.S. academic institutions, non-profits, industry and national laboratories. There are no limited submission limitations. DOE strongly encourages teaming among multiple stakeholders across academia, nonprofit and for-profit companies, national laboratories, and State and local governments. Teams are also highly encouraged to include participation of individuals from historically underrepresented groups or Minority Serving Institutions and applicants are required to describe how diversity, equity, and inclusion objectives will be incorporated in the project.

**Total Funding and Award Size:** DOE plans to make 8 to 15 awards, each ranging between \$750,00 and \$6 million with an anticipated performance period of 12-36 months. A 20 percent cost share is required on research and development projects and a 50 percent cost share is required on demonstration projects.

## **4. DOD Releases FY 2023 Multidisciplinary University Research Initiative (MURI) BAA**

*Lewis-Burke Associates LLC – February 11, 2022*

The Department of Defense (DOD) released a broad agency announcement (BAA) for the fiscal year (FY) 2023 Multidisciplinary University Research Initiative (MURI). Initiated over 25 years ago, MURI remains one of the most popular programs among researchers at institutions of higher education and stands as the benchmark for building a defense-oriented research capability on campus. With the goal of understanding and achieving revolutionary breakthroughs on behalf of the warfighter, each MURI program is managed closely by a program manager from one of the Services supporting high-risk basic research in science, economic growth, and military technology.

The Army, Navy, and Air Force basic research offices have released 24 topics this year. Like previous years, the FY 2023 topics have an emphasis on materials and quantum sciences, but also a focus on issues related to climate. FY 2023 MURI topics include:

### **Army Research Office (ARO)**

1. Integrated Bio-Hybrid Actuators
2. Neuro-Inspired Distributed Deep Learning (NIDDL)
3. Chemical and Microbial Indicators of Permafrost Degradation from Changes in Climate
4. Dynamically Tunable and Enhanced Thermal Conductivity in Polymeric Materials
5. The Stranger Within: The Ecology of the Brain
6. Control Theory for Novel Quantum Error Correction
7. Emergent Refractory Behaviors in Earth and Extraterrestrial Materials

### **Office of Naval Research (ONR)**

8. Supremacy over Quantum: Efficient Real-World Optimization on Stochastic Binary Networks
9. Identifying the Fundamental Properties of Biological Soft Structures Subjected to High

Hydrostatic Pressure that Preserve Structural and Functional Integrity of Deep-Sea Organisms

10. Advance Mixed-Precision and Deep Learning Algorithms for Computation of Multiscale-

Multiphysics and Optimization Models

11. Fundamental Processes in Solid-Fuel Combustion

12. Climate Change Risk and Decision Superiority

13. Twist on Photonics (TOP): Light-Matter Interactions Defined by Novel Degrees of Freedom

14. Building Overall Cognitive Capability through Attention Control

15. Assessing the Role of Marine Biology in Driving Ocean Mixing Using Autonomous Sampling of Microstructure and eDNA (BIOMIX)

16. Spatially Programmed Material Properties via Designed Meso-Structures

17. Excited State Chemistry of Pre-ceramic Polymers

#### **Air Force Office of Scientific Research (AFOSR)**

18. Fluid-(Sub-) Surface Material Interactions for Passive Flow Control

19. Quantum Spin Effects in Chiral Matter

20. Cognitive Security

21. Open Hybrid Dynamical Systems: Compositions, Invariants, and Computation

22. Dislocations as One Dimensional Quantum Matters

23. Quantum Phononics

24. Fundamental Limits of Nanoscale X-ray Microscopy in Radiation Sensitive Materials

DOD encourages faculty to engage with the Research Topic Chiefs assigned to each topic area (see section II.H) through the white paper process to assess the feasibility of proposed topics. Topics listed above describe the focus areas important to each Service and are not meant to restrict the possible directions awarded research could take.

**White Papers:** While not required, prospective awardees are strongly encouraged to submit white papers before 11:59 PM Eastern Time on May 16, 2022, to minimize the labor and cost associated with the production of detailed full proposals.

#### **Timeline for Submission:**

- Questions on eligibility and technical requirements are due by **May 2, 2022**
- White papers are due **May 16, 2022, by 11:59 PM ET**
- Notifications of initial evaluations of white papers are expected on **June 13, 2022**
- Questions for Grants Officer on proposal submission are due by **August 26, 2022, by 11:59 ET**
- Full proposals are due on **September 9, 2022, by 11:59 PM ET**
- Notification of selection for awards are expected to be made on **February 1, 2023**
- Grants are estimated to start on **April 1, 2023**

**Total Funding and Award Size:** DOD expects \$190 million to be made available for five years, pending out-year appropriations. Typical individual awards range from \$1.25 to \$1.5 million, per year.

**Eligibility and Limitations:** The competition is open to U.S. institutions of higher education, including DOD institutions of higher education, with degree-granting programs in science and or engineering. A

University Affiliated Research Centers (UARC) is an eligible applicant, if it is affiliated with a U.S. institution of higher education and not Federally Funded Research and Development Center. While industry, DOD laboratories, and foreign universities may not receive funding, DOD encourages universities to collaborate with entities focused on applied and transitional research for potential commercial applications of MURI-funded research.

*Sources and Additional Information:*

- The full FY 2023 MURI solicitation issued by each Military Service is available at [www.grants.gov](http://www.grants.gov) by searching “N00014-22-S-F002” (Navy), “W911NF-22-S-0007” (Army), and “FOA-AFRL-AFOSR- 2022-0003” (Air Force).
- Additional information on DOD’s university-focused basic research efforts, including MURI, can be found by visiting the following Services’ websites:
  - o Navy-<https://www.onr.navy.mil/Education-Outreach/Sponsored-Research/University-Research-Initiatives/>
  - o Army-<https://www.arl.army.mil/business/>
  - o Air Force - <https://www.afrl.af.mil/About-Us/Fact-Sheets/Fact-Sheet-Display/Article/2282120/afosr-funding-opportunities-university-research-initiative- uri/#anchor3>

## **5. USDA Launches Partnerships for Climate- Smart Commodities Program**

*Lewis-Burke Associates LLC – February 8, 2022*

The U.S. Department of Agriculture (USDA) released a request for applications (RFA) for the new Partnerships for Climate-Smart Commodities program, with funding made available through USDA’s Commodity Credit Corporation (CCC). Through this initiative, USDA will provide competitive grants to entities proposing pilot projects to advance the production and dissemination of environmentally-conscious agricultural commodities. Proposals must include a plan to implement large-scale climate-smart agricultural and/or forestry practices; monitoring, measurement, verification, and reporting of the resulting carbon and greenhouse gas (GHG) benefits; develop markets and promote the climate-smart commodities; and substantive engagement of small or underserved producers. Consistent with the Justice40 initiative, equity, environmental justice (EJ), and reach to minority-serving institutions (MSIs) is listed as one of the merit criteria for this program, and as such, proposals will be evaluated for their potential economic benefits for producers, especially those from underrepresented groups; the proposed number of underserved producers to be enrolled; and partnerships with organizations focused on equity, EJ, MSIs, or small farmer representation. The ultimate goals of this program are to establish a market for climate-smart commodities, increase uptake of climate-smart practices, promote innovation in quantifying farm-level GHG benefits, empower farmers and ranchers to steer climate-smart markets and practices, and facilitate public-private partnerships in climate-smart agriculture and forestry.

Funding for this program will be provided through two funding pools:

- The first funding pool, designed for proposals requesting \$5 million to \$100 million, is for large-scale pilot projects that focus on GHG benefits of climate-smart commodity production, and

which describe the direct benefits to a wide variety of agricultural producers and sectors, including underserved producers. Expected GHG and carbon benefits of climate-smart commodity production is particularly important for proposals to the first funding pool.

- The second funding pool, designed for proposals requesting \$250,000 to \$4,999,999, is soliciting particularly innovative pilot projects focused on participation of small or underserved producers, and/or the monitoring, reporting, and verification practices developed at MSIs. Equity, EJ, and MSI outreach are more heavily weighted in the second funding pool.

**Due Dates:** Proposals for the first funding pool are due **April 8, 2022 by 11:59pm ET**. Proposals for the second funding pool are due **May 27, 2022 by 11:59pm ET**.

**Eligibility:** This program is open to public, state-controlled, and private institutions of higher education; non-profit and for-profit organizations; small businesses; city, county, township, special district, state, or federally recognized Native American tribal governments; and Native American tribal organizations. USDA encourages coordination with multiple partners on project proposals. Primary applicants must be an entity, not an individual.

**Total Funding and Award Size:** Awards in the first funding pool will range from \$5 million to \$100 million. Awards in the second funding pool will be a minimum of \$250,000, and will not exceed \$5 million, for a total program funding of \$1 billion.

**Matching Requirements:** There is no matching requirement.

*Sources and additional information:*

- The RFA is available at <https://www.usda.gov/sites/default/files/documents/climate-smart-nfo-usda-nrcs-comm-22-nofo0001139-02062022-web-final.pdf>.
- The program overview is available at <https://www.usda.gov/climate-solutions/climate-smart-commodities>.
- The grants.gov page for this opportunity is available at <https://www.grants.gov/web/grants/view-opportunity.html?oppId=337878>.

## 6. Department of Defense Releases FY 2023 DURIP BAA

*Lewis-Burke Associates LLC – February 7, 2022*

The Department of Defense (DOD) released a broad agency announcement (BAA) for the fiscal year (FY) 2023 Defense University Research Instrumentation Program (DURIP) competition. DURIP, an annual program under DOD's University Research Initiative (URI), provides acquisition funding for equipment and instrumentation used to support defense-related research activities. DURIP funding supports the purchase of major, state-of-the-art equipment (from \$50,000 to \$1.5 million) that augments current research institutions' capabilities or develops new capabilities to perform cutting edge defense research in disciplines of importance to DOD. According to DOD, DURIP funding is not appropriate for the construction or modification of buildings, building support systems, fixed equipment (i.e. clean rooms or fume hoods), general-purpose computing facilities, or purely instructional equipment, as well as salaries of faculty, postdoctoral associates, or students. DURIP remains an extremely competitive funding

program with the decline in similar instrumentation programs across federal agencies. For FY 2022, DOD awarded \$46 million dollars in awards to 144 university researchers at 81 institutions in 35 states.

As in previous years, the Army Research Office (ARO), Office of Naval Research (ONR), and the Air Force Office of Scientific Research (AFOSR) jointly support the solicitation, which is issued in cooperation with the Office of the Director of Basic Research in the Office of the Secretary of Defense. DOD recommends that proposers review each Service branch's research interests contained in recent long-range BAAs to align proposals with stated DOD research needs. Proposals must address research of interest to one or more Services and may be submitted to more than one Service for consideration. While an application may be submitted to multiple Services, funding can only be received from one. DOD encourages interested researchers to contact the appropriate program managers relevant to their field to discuss the relevance of proposed ideas.

In addition to research efforts, DURIP emphasizes related educational enhancement and requires proposals to address how DURIP funding would strengthen educational opportunities for students in DOD-relevant fields.

Lewis-Burke also recommends that proposers identify how research efforts supported by the instrumentation align with current DOD Research and Engineering (R&E) priorities, including but not limited to:

- Hypersonics
- artificial intelligence/machine learning
- quantum science and computing
- microelectronics
- 5G and beyond

Additional insight on DOD's research and engineering priorities, especially emerging and critical technology areas, can be found in the recently published *USD(R&E) Technology Vision for an Era of Competition*.

**Question Submission Deadline:** Questions to respective program managers concerning the BAA are encouraged and must be submitted by **April 22, 2022**. Appropriate points of contact can be found in each of the Service's respective BAAs.

**Full Proposal Deadline:** Full proposals should be submitted no later than **May 13, 2022 at 11:59 PM ET**.

**Total Funding and Award Size:** DOD anticipates awarding approximately \$48 million under the FY 2023 DURIP competition, with individual awards ranging from \$50,000 to \$1.5 million. Awards are typically for one year. Note: This program will be supplemented by additional funding from the Defense Established Program to Stimulate Competitive Research (DEPSCoR). DEPSCoR-eligible applicants should indicate their DEPSCoR status in their DURIP application.

**Eligibility:** The competition is open to accredited U.S. institutions of higher education with degree-granting programs in science, mathematics, or engineering.

**Sources and Additional Information:**

- The full FY 2023 DURIP solicitation issued by each military Service is available at [www.grants.gov](http://www.grants.gov) under funding opportunity number “FOA-AFRL-AFOSR-2022-0001” (Air Force), “W911NF-22-S- 0008” (Army), and “N00014-22-S-F004” (Navy).
- The Long Range Broad Agency Announcement for Navy and Marine Corps Science and Technology can be found on [ONR’s website](#) or at [www.grants.gov](http://www.grants.gov) by searching for “N00014-21-S-B001.”
- The research interests of the Army Research Office can be found in their Broad Agency Announcement [here](#).
- The research interests of the Air Force Office of Scientific Research can be found in their Broad Agency Announcement [here](#).
- The USD(R&E) Strategic Vision and Critical Technology areas can be found [here](#).

## 7. NSF Releases Pathways to Enable Open-Source Ecosystems Solicitation

*Lewis-Burke Associates LLC – February 15, 2022*

The National Science Foundation (NSF) has released a new solicitation titled “Pathways to Enable Open-Source Ecosystems (PEOSE)” which aims to “harness the power of open-source development for the creation of new technology solutions to problems of national and societal importance.” PEOSE will fund new organizations to manage open-source ecosystems (OSEs), with each owning the development and maintenance of the infrastructure required to effectively operate an OSE based around a specific open-source product or class of products. The overarching goal is to increase the availability and coordination of open-source products, such as software, hardware, or data platforms, and developer contributions to accelerate innovation in areas of societal/national importance.

PEOSE will support managing organizations to create and grow sustainable high-impact OSEs around already-developed open-source research products. PEOSE will not support the development of open-source products nor existing well-resourced open-source communities and ecosystems. PEOSE is a cross-NSF activity involving all research directorates and, therefore, projects may cover any area of research supported by NSF.

This solicitation is part of NSF’s broader focus on innovation. The program page notes that while existing NSF programs, including the NSF Innovation Corps (I-Corps™), Partnerships for Innovation (PFI), and Small Business Innovation Research and Small Business Technology Transfer (SBIR and STTR) support the translation of basic research into new technology ventures, PEOSE will support the translation of research results into OSEs.

PEOSE will support Phase I and Phase II awards:

- **Phase I: OSE Scoping Proposals** – Enable scoping activities and team formation that could lead to a Phase II proposal. Phase I proposals should describe the current context, long-term vision, and potential impact of the proposed OSE. Phase I projects will be supported up to \$300,000 for one-year.
- **Phase II: OSE Development Proposals** – Support the transition of an open-source research product into a sustainable and robust OSE. Phase II proposals will be community-driven and include a detailed project plan. Proposals must also include a community engagement plan to

ensure the successful development and maintenance of the technology and identifies users to adopt the technology. Phase II projects will be supported at \$1.5 million for up to two-years.

NOTE: Phase I awards are not required for the submission of a Phase II proposal.

**Due Date:** Phase I proposals are due May 12, 2022. Phase II proposals are due October 21, 2022.

**Eligibility:** This solicitation is open to Institutions of Higher Education (IHEs); Non-profit, non-academic organizations; For-profit organizations; and State and Local Governments. There are no restrictions on the number of proposals submitted by individual institutions or PIs. The solicitation states that the “PEOSE program seeks broad and diverse representation of PIs and organizations.”

**Total Funding and Award Size:** NSF plans to award up to 20 Phase I awards of up to \$300,000 for one-year, and 10 Phase II awards of up to \$1.5 million for up to two-years.

*Sources and additional information:*

- The program page for the PEOSE program is available at <https://beta.nsf.gov/funding/opportunities/pathways-enable-open-source-ecosystems-peose>.
- The full solicitation is available at <https://www.nsf.gov/pubs/2022/nsf22572/nsf22572.htm>.

## 8. NSF Issues New Strengthening American Infrastructure Solicitation

*Lewis-Burke Associates LLC – February 18, 2022*

The National Science Foundation (NSF) released an updated solicitation for the Strengthening American Infrastructure (SAI) program, which funds human-centered transformative research around domestic infrastructure. This solicitation follows a 2020 Dear Colleague Letter (DCL) announcing the first SAI funding opportunity. This program continues to be a priority for the Social, Behavioral and Economic Sciences (SBE) Directorate, which leads the competition with support from seven additional NSF directorates. Proposals should bring together experts from one or more of the SBE science disciplines with experts across other scientific disciplines to generate “fundamental knowledge about human reasoning and decision-making, governance, and social and cultural processes enables the building and maintenance of effective infrastructure that improves lives and society and builds on advances in technology and engineering.”

For this solicitation, NSF states that the infrastructure focus of the proposed research may be of any kind, “including physical, cyber, biological, technological, social, economic, or educational.” Proposals should focus on infrastructure that produces broad societal impact, such as those that support “transportation, energy, water, information, computing, national security, buildings, conservation, and commerce.” In addition, areas that present the greatest societal challenges are of special interest, including “equitable access to and benefit from infrastructure, sustainability, climate impact and disaster mitigation, economic resilience, emerging technologies, and future safety, productivity, and security for all citizens.”

NSF emphasizes that proposals must identify a “specific, focal, and well-defined infrastructure.” In addition, proposals must build on a deep understanding of at least one SBE science relevant to the design, development, or sustainability of focal infrastructure. These sciences may include those of “human cognition, perception, information processing, decision-making processes, social and cultural behavior, legal frameworks, governmental structures,” and other areas of SBE science supported across the directorate’s programs. In particular, NSF encourages proposals to include consideration of modeling approaches of both the underlying human processes and identified infrastructure. Submitted proposals must be grounded in “user-centered concepts and offer the potential to substantially improve, strengthen and transform the design, development, use, deployment, cost-effectiveness, sustainability, and maintenance of American infrastructure.” NSF plans to support SAI Planning Grants (SAI-P), SAI Research Grants (SAI-R), and SAI Conference Grants (SAI-C).

Additionally, NSF encourages proposals that include efforts to broaden participation of underrepresented groups in STEM and underrepresented regions in the development and conduct of the research. Proposals from MSIs are highly encouraged, as are opportunities for participation by undergraduate and graduate students and postdoctoral fellows, K-12 students, industry stakeholders, and others.” Public-private partnerships can also be proposed.

**Due Dates:** Full proposal submissions are due **May 5, 2022**.

**Award Information:** NSF anticipates 35 total awards with up to 10 planning grant awards, up to 15 research grants awards, and up to 10 conference awards. The total anticipated funding amount is \$10 million. SAI-P may be requested for a total budget not to exceed \$150,000 and for a period of up to one year. SAI-R grants may be requested for a total budget not to exceed \$750,000 and for a period of up to three years. SAI-C grants may be requested for a total budget not to exceed \$50,000 and for a period of up to one year.

**Eligibility:** Institutions of higher education and non-profit, non-academic organizations are eligible to apply to this solicitation. An individual may appear as PI, co-PI, senior personnel, or consultant on only one proposal submitted in response to the solicitation.

*Sources and Additional Information:*

- The full solicitation is available at: <https://www.nsf.gov/pubs/2022/nsf22564/nsf22564.htm>
- The SAI program page is available at: <https://beta.nsf.gov/funding/opportunities/strengthening-american-infrastructure-sai-1>
- A list of SBE program areas can be found at: <https://www.nsf.gov/funding/programs.jsp?org=SBE>

## **9. NSF Releases Solicitation for Molecular Foundations for Biotechnology (MFB) – Partnerships to Transform Emerging Industries**

*Lewis-Burke Associates LLC – January 21, 2022*

The National Science Foundation (NSF) released a solicitation seeking novel approaches in molecular science to advance biotechnology research. This year's solicitation for the Molecular Foundations for Biotechnology (MFB) program aims to couple synergistic research at the interface of machine learning (ML)/artificial intelligence (AI) with the biological, physical, and mathematical sciences. The program has expanded significantly this year as compared to last year, with the Directorates for Computer and Information Science and Engineering (CISE), Biological Sciences (BIO), and Engineering (ENG) joining the Directorate for Mathematical and Physical Sciences (MPS) on the new solicitation. This expansion reflects NSF's broader interests in advancing molecular sciences to drive innovation in biotechnology and grow the U.S. bioeconomy.

As part of the Partnerships to Transform Emerging Industries program, MFB strives to address national priorities through collaborative high risk/high reward projects using ML methods with applications in the physical and life sciences. MFB specifically calls for research that:

- Bridges computer science expertise in ML/AI with chemistry, biology, physics, engineering, and/or mathematics;
- Focuses on integrated projects that create and utilize new “mechanism-guided machine learning frameworks” to predict and characterize the capabilities of biological macromolecules; and
- Tests the “validity, specificity, and generalizability” of proposed ML frameworks.

Projects should focus on unique and inventive research, and proposals that can be supported through core NSF programs will not be considered responsive to the solicitation. Proposals to this solicitation should focus on science-driven challenges that:

- Predict and characterize the functions of intrinsically disordered proteins;
- Explore the relationship between biopolymer function and the environment;
- Deepen the understanding of biomolecules in higher order complexes, especially

“understanding, building upon, and/or disrupting protein-protein interactions”;

- “Design, synthesize, and characterize natural and synthetic polymer hybrids”; and
- Predict the structure and function of RNA.

MFB provides opportunities for professional workforce development. University-based proposals can be altered to include internships or similar opportunities for students and postdoctoral researchers to conduct research in non-academic settings.

**Eligibility Information:** All institutions of higher education may submit proposals. While there is no limit on the number of proposals an organization may submit, a single researcher may be designated as senior personnel on no more than one letter of intent and one full proposal. There are no restrictions on who may serve as a principal investigator. There is no maximum or minimum number of collaborators for research teams.

**Due Dates:** Letters of Intent, which are required, are due on **February 14, 2022, by 5:00 PM** in the submitter's local time. Full proposals are due on **April 14, 2022, by 5:00 PM** in the submitter's local time.

**Award Information:** NSF anticipates making 6 awards with a total of \$9 million in funding. *Sources and Additional Information:*

- The full MFB solicitation can be found at <https://www.nsf.gov/pubs/2022/nsf22554/nsf22554.pdf>.
- Details on MFB are available on the NSF website at <https://beta.nsf.gov/funding/opportunities/molecular-foundations-biotechnology-mfb>.

## 10. ONR Releases FOA for FY 2022 Naval STEM Education and Workforce Program

*Lewis-Burke Associates LLC – January 27, 2022*

The Office of Naval Research (ONR) within the Department of Defense (DOD) released a funding opportunity announcement (FOA) for the Fiscal Year (FY) 2022 Department of Navy (DON) Science, Technology, Engineering & Mathematics (STEM), Education and Workforce Program. The program aims to focus DON’s educational and outreach efforts on cultivating a diverse STEM workforce capable of addressing the technological challenges of the Navy. ONR is seeking a broad range of proposals that identify projects working to engage more students in naval relevant STEM education and enhance STEM educational research currently being used to advance the naval STEM workforce. Projects, either previously established or created for this program, are encouraged to consider the following evaluation criteria when developing their applications:

- “Develop and implement exploratory pilot projects that seek to create new educational experiences within educational and training communities;
- Develop larger cohesive STEM education and training activities that strengthen the capacity of regional communities and stakeholders to improve STEM education and training;
- Establish meetings with stakeholders that must seek to connect relevant people and organizations to explicitly develop broader projects for affecting entire communities.”

STEM education priority areas based on naval relevance are outlined in the “[Naval Research and Development Framework and Addendum](#)” and include the following:

- Augmented Warfighter
- Integrated & Distributed Forces
- Operational Endurance
- Sensing & Sense-Making
- Scalable Lethality

**Eligibility and Limitations:** This opportunity is open to all responsible sources from academia, non-profit organizations, and industry (for-profit) organizations (excluding foreign entities), but funding will be primarily targeted towards secondary education communities, post-secondary education communities, informal science communities, and/or current Naval STEM workforce communities. An important criterion of the program is ensuring the incorporation of diversity-equity-inclusion (DEI) through engagement and partnerships with underrepresented communities and individuals in STEM. A list of those that are considered part of underrepresented groups in STEM can be found in the full announcement. Applicants are also encouraged to develop partnerships with Naval STEM Stakeholder Organizations (NSSO) under this FOA.

**Total Funding and Award Size:** ONR is expected to award up to 10 grants with each receiving a funding award of \$200,000 per year for a period of performance of three years.

**Due Dates:** White papers are required under this FOA and must be submitted via [FedConnect](#) no later than **April 15, 2022, at 11:59 PM ET**. Questions regarding the white paper are to be submitted by **April 8, 2022**. Based on white paper assessments, applicants will be invited to submit a full proposal. Questions regarding full proposals are due by **August 26, 2022** and full proposals must be submitted no later than **September 2, 2022, at 11:59 PM ET**.

*Sources and Additional Background:*

- The full FOA can be found on [www.grants.gov](http://www.grants.gov) under funding opportunity number “N00014-22S-F003” or at <https://www.grants.gov/web/grants/view-opportunity.html?oppId=337522>.

## 11. NIH Biomedical Research Infrastructure

*Lewis-Burke Associates LLC – January 12, 2022*

The Biomedical Research Facilities program uses the C06 funding mechanism to provide support for

The National Institutes of Health (NIH) has released several solicitations through the Office of Research Infrastructure Programs aimed at funding the construction, renovation, and modernization of biomedical research spaces. Using the C06 mechanism, NIH will fund biomedical research facilities construction grants, and using the S10 mechanism, NIH will fund shared instrumentation grants. Details about these related opportunities can be found below.

### Research Facilities Construction Grants (C06 Program)

The Biomedical Research Facilities program uses the C06 funding mechanism to provide support for long-term improvements to institutional research infrastructure and facilities. The funds for the design and implementation of projects but may not use the award for regular maintenance or to simply replace aging equipment. Full details on eligible projects can be found in the solicitation.

**Deadline:** Letters of intent are optional and should be submitted by **February 15, 2022**, and full proposals are due **March 15, 2022**.

**Award Information:** Proposal budgets are capped at \$8,000,000, and NIH notes that proposals with a budget less than \$3,000,000 will not be considered. The solicitation also states that NIH plans to make at least 25% of funds allocated towards this program available to Institutions of Emerging Excellence (details on this designation can be found in the solicitation). While the total number of awards to be made and overall program budget are always contingent on NIH appropriations, the overall funding level for this program is particularly unclear this year, as

appropriations for fiscal year (FY) 2022 have not been finalized at the time of the solicitation's publication. Lewis-Burke will provide more information about the status of FY 2022 appropriations for NIH as well as any details on funding levels for this program as the congressional appropriations process progresses.

**Eligibility Information:** Any public or private institution of higher education or non-profit research institution is eligible to apply. Only one application per institution can be submitted.

*Sources and Additional Information:*

- The full solicitation can be found at <https://grants.nih.gov/grants/guide/pa-files/PA-22-088.html>.
- More information about NIH's extramural construction programs, including a forthcoming list of Frequently Asked Questions about the C06 program, can be found at <https://orip.nih.gov/construction-and-instruments/extramural-construction-programs>.

## Biomedical Research Support Shared Instrumentation Grants (S10 Program)

The S10 Instrumentation Programs support the purchase of state-of-the-art shared research instruments that are typically too expensive for an individual investigator to obtain using a research project grant. Examples of instruments that can be purchased using S10 funding include X-ray diffraction systems, nuclear magnetic resonance and mass spectrometers, DNA and protein sequencers, biosensors, confocal and electron microscopes, flow cytometers, and biomedical imagers. Three separate programs use the S10 mechanism to support instrumentation needs:

- The **Basic Instrumentation Grant (BIG) Program** funds instruments in the \$25,000 - \$250,000 range and is open only to institutions that have not received an S10 award over \$250,001 in any of the three preceding fiscal years.
- The **Shared Instrumentation Grant (SIG) Program** supports instrument purchases in the \$50,000 - \$600,000 range.
- The **High-End Instrumentation (HEI) Grant Program** funds instruments in the \$600,001 - \$2,000,000 range.

For all three grant programs, NIH seeks to support applications that encourage optimal resource sharing among investigators using the supported instrument. Proposals must have at least three identified major users which will benefit from the instrument. Concurrent BIG, SIG, and HEI applications should not be for the same equipment, unless it is part of a campus-wide instrumentation plan, which should be clarified in the application. Multiple applications from a single organization are allowed, provided that they are scientifically distinct.

**Deadline:** The next upcoming deadline for all three programs is **June 1, 2022**. Applicants may also plan to submit for additional deadlines in June 2023 and June 2024.

**Award Information:** As FY 2022 appropriations remain unfinished at the time of these solicitations' publication, NIH has not announced the total number of awards or overall program budget for these programs. Lewis-Burke will provide more information about the status of FY 2022 appropriations for

NIH as well as any details on funding levels for this program as the congressional appropriations process progresses.

**Eligibility:** Any public or private institution of higher education or non-profit research institution is eligible to apply for any of the three grant opportunities. The BIG Program is a limited competition for institutions that have not received S10 instrumentation funding over \$250,001 in the previous three fiscal years.

*Sources and Additional Information:*

- The BIG Program solicitation is available at <https://grants.nih.gov/grants/guide/pa-files/PAR-22-081.html>.
- The SIG Program solicitation is available at <https://grants.nih.gov/grants/guide/pa-files/PAR-22-080.html>.
- The HEI Grant Program solicitation is available at <https://grants.nih.gov/grants/guide/pa-files/PAR-22-079.html>.
- A list of Frequently Asked Questions about the S10 instrumentation programs can be found at <https://orip.nih.gov/construction-and-instruments/s10-instrumentation-programs/frequently-asked-questions-shared-and-high>.

## **12. DOE Releases \$150 Million Solicitation for Chemical and Materials Research to Advance Clean Energy Technologies and Low-Carbon Manufacturing**

*Lewis-Burke Associates LLC – February 23, 2022*

The Department of Energy (DOE) Office of Science released a \$150 million [funding opportunity](#) for fundamental chemical and materials research to advance clean energy technologies and low-carbon manufacturing. This broad funding solicitation mirrors many of the same topics in the recent Energy Frontier Research Centers funding call but is designed to support three-year projects for single principal investigators and small teams rather than four-year, large-scale, multidisciplinary, multi-institutional centers. **Pre-applications are required and are due March 16.**

Foundational research in clean energy technologies includes approaches to capture, produce, convert, store, and use energy that reduce or eliminate emissions such as greenhouse gases as well as approaches to decrease emissions that have been released into the environment from energy production and use, such as direct air capture and carbon storage/sequestration. A new foundational research area is low-carbon manufacturing, which refers to manufacturing processes that minimize carbon emissions and energy consumption. All proposed research must address priority research directions from recent workshops and roundtables and/or address the goals of the three Energy Earthshots focused on hydrogen, long-duration storage, and carbon negative technologies.

Specifically, DOE is seeking proposals in seven topic areas but wants proposals to focus on a single, primary topic area:

- **Carbon-neutral hydrogen:** Proposals must address the priority research opportunities in the [Foundational Science for Carbon-Neutral Hydrogen Technologies](#) roundtable report focused on

hydrogen production, storage, and use. Applications focused on hydrogen production using clean energy sources must also support the goals of the [Hydrogen Earthshot](#) to reduce the cost of clean hydrogen by 80 percent to \$1 per kilogram within 10 years.

- **Solar energy:** DOE will favor proposals focused on solar-to-chemical energy conversion, including hydrogen production and nitrogen reduction, that address the priority research opportunities in the [Liquid Solar Fuels](#) roundtable report. However, if innovative and addressing scientific knowledge gaps, DOE will also support projects for solar conversion to electrical energy consistent with priority research directions in the [Basic Research Needs for Solar Energy Utilization](#) report.
- **Carbon dioxide removal:** The focus is on two specific approaches—
  - Direct capture of CO<sub>2</sub> from dilute sources, such as ambient air and oceans and surface waters that concentrate CO<sub>2</sub> from air. Proposals focused on direct air capture must be distinct from prior [lab](#) and [research university](#) awards.
  - Durable storage of CO<sub>2</sub>, including mineralization, consistent with priority research directions in the [Basic Research Needs for Geosciences: Facilitating 21st Century Energy Systems](#) report.
- **Energy storage:** The focus is on electrochemical approaches and efficient electrical-chemical energy interconversions. Proposals must advance the [Long Duration Storage Shot](#) goal of reducing the cost of grid-scale energy storage by 90 percent for systems that last more than 10 hours within 10 years. Proposals focused on electrical approaches such as batteries and fuel cells must address the priority research directions in the [Basic Research Needs for Next Generation Electrical Energy Storage](#) report.
- **Nuclear energy:** The focus is on chemical and materials processes of key components, such as fuels, coolants, and materials, for future nuclear reactor concepts and must address the priority research directions in the [Basic Research Needs for Future Nuclear Energy](#) report.
- **NEW TOPIC: Transformative manufacturing:** The focus is on novel synthesis, processing, modeling, operando characterization, and validation approaches for manufacturing and must address the priority research directions in the [Basic Research Needs for Transformative Manufacturing](#) report. Proposals may also address priority research directions from three other relevant reports: [Chemical Upcycling of Polymers](#), [Basic Research Needs for Catalysis Science](#), and [Basic Research Needs for Synthesis Science](#).
- **Critical minerals and materials:** The focus is on chemical and materials sciences to understand and control processes and properties associated with use of rare earth elements, platinum group elements, and other critical materials. Proposals must make clear connections between the proposed research and clean energy technologies or low-carbon manufacturing and must specify how the research will advance the objectives of one or more of the other six topic areas listed above. Proposals must be distinct from prior [lab](#) and [research university](#) awards.

DOE also encourages proposals that address one or more the following cross-cutting themes:

- **Materials synthesis:** The focus is on the science of synthesis to make new high-performance materials and is aligned with priority research directions in the [Basic Research Needs for Synthesis Science](#) report.
- **Biohybrids and bio-inspiration:** The focus is on understanding the chemistry of interfaces between biochemical and inorganic components of biohybrids for use in clean energy technologies and low-carbon manufacturing.

- **Data science tools and method development:** The focus is on data science, including artificial intelligence and machine learning, as tools to accelerate discovery and progress in chemical and materials sciences research. Specific areas of interest include the “combination of standard experimental and theoretical methods with data science approaches for discovery, analysis, and modeling of chemical mechanisms and material systems with exceptional properties and dynamic behavior.”

DOE also strongly encourages teams that are led by or include Minority Serving Institutions and underrepresented groups in STEM. DOE strongly encourage applications led by [Minority Serving Institutions \(MSI\)](#), which include [Historically Black Colleges and Universities](#), that are underrepresented in the Office of Science Basic Energy Sciences (BES) [portfolio](#). DOE also encourages small group teams to include the participation of MSIs underrepresented in the BES portfolio as well as researchers from groups historically underrepresented in STEM.

**Due Dates:** Pre-applications are required and are due March 16. Full applications are due May 17. DOE plans to make award decisions in July 2022 and award announcements in September 2022.

**Eligibility and Proposal Limitations:** Proposals may be submitted by U.S. academic institutions, non- profits, industry, and national laboratories. There are no cost share requirements. Each applicant institution is limited to no more than three applications. DOE will consider the last received submissions.

as the institution’s intended submissions. Pre-applications must have an institutional endorsement. Individuals are limited to be a lead Principal Investigator (PI) on one pre-application or application. The PI on a pre-application or application may be listed as a senior or key personnel on other submissions without limitation.

**Total Funding and Award Size:** DOE plans to make available \$150 million over three years, or \$50 million a year starting in fiscal year 2022. Award sizes will vary: \$200,000 to \$350,000 a year over three years for single-PI projects and \$500,000 to \$1.5 million a year over three years for multi-PI, small group projects.

## **13. AHRQ Announces Interest in Health Services Research on Health System and Healthcare Professional Responsiveness to COVID-19**

*Lewis-Burke Associates LLC – February 24, 2022*

The Agency for Healthcare Research and Quality (AHRQ) released a special emphasis notice (SEN) inviting health services research grant proposals to develop models of care that improve access, quality, and outcomes of care related to COVID-19 and post-acute sequelae from COVID-19 (PASC), also known

as long COVID. AHRQ highlights that providing patient-centered, whole-person oriented care for COVID-19 and PASC remains a challenge as organizations aim to develop strategies for effectively preventing, diagnosing, treating, and managing COVID-19. In particular, AHRQ notes that these efforts to develop effective strategies are especially important to people with multiple chronic conditions (MCC) whose higher risks for severe disease, mortality, and PASC compound the existing burden of underlying conditions. AHRQ also highlights the greater impact that COVID-19 has had among socially disadvantaged populations, which has underscored the need for models that address COVID-19 in the context of the whole person.

In this SEN, AHRQ is interested in “

applications that develop, implement, and evaluate interventions and

models of care, including those targeting the specific needs and challenges of disadvantaged

populations and people living with MCC, that improve access, quality, and outcomes of care. Proposed

studies may focus on the patient, clinician, practice, or system level interventions.” Multilevel

interventions are encouraged, as are projects that produce and disseminate insights that can be used to

improve patient care and inform healthcare delivery in routine operations and during public health

emergencies. AHRQ additionally encourages applications that:

- “Develop and test care models and interventions to improve access, quality, and outcomes related to the prevention, diagnosis, treatment, and management of COVID-19 and PASC;
- implement patient-centered, whole-person approaches that address the needs of people with multiple chronic conditions and socially disadvantaged populations in the context of the stressors stemming from the pandemic;
- improve equity and reduce disparities related to care for COVID-19 and PASC across diverse populations and communities; and
- advance models that target the intersection, coordination, and transitions between settings, including inpatient, emergency department, primary care, other ambulatory care settings, home care, post-acute care, and public health.”

Furthermore, proposals may address any healthcare delivery related topic with relevance to COVID-19 and PASC, including but not limited to how interventions or models of care:

- “Improve the Quality of Care and Patient Outcomes;
- improve Patient Safety;
- improve Health System Responsiveness;
- affect Socially Disadvantaged Populations and People with Multiple Chronic Conditions; and
- incorporate Telehealth and Other Digital Healthcare Innovations, and the Subsequent Outcomes and Unintended Consequences.”

**Due Date:** The SEN is active until **February 14, 2025**.

**Proposal Submission Information:** AHRQ encourages applicants to submit proposals to this SEN using the standing R18, R03, and R01 ([PA-18-793](#), [PA-18-794](#), [PA-18-795](#)) funding mechanisms.

*Sources and Additional Information:*

- The full SEN is available at <https://grants.nih.gov/grants/guide/notice-files/NOT-HS-22-010.html>.

## **14. NIH Releases Request for Applications for FIRST Program Cohorts and Coordination and Evaluation Center**

*Lewis-Burke Associates LLC – December 9, 2020*

The National Institutes of Health (NIH) has released its highly anticipated Faculty Institutional Recruitment for Sustainable Transformation (FIRST) Program Cohort and FIRST Coordination and Evaluation Center (CEC) funding opportunities. The [FIRST program](#) is designed to support institutions in developing and implementing faculty cohort models that will advance the hiring of diverse groups of research faculty. This funding opportunity is a direct product of NIH's efforts to support diversity and inclusion in the biomedical research workforce. The [press release](#) accompanying the funding opportunity announcements highlights NIH's commitment to the FIRST program. The agency plans to invest an estimated \$241 million over nine years in the FIRST program. NIH plans to award four Cohort awards and the CEC award in 2021, with eight additional Cohort awards being made in subsequent years.

Successful FIRST Cohort awardees should demonstrate the institutional support needed to achieve significant systematic culture change toward inclusive excellence; conduct recruitment activities for new faculty emphasizing institutional commitments in diversity, equity, and inclusion; and develop strategies to support individual research, career, and mentorship development plans for all newly recruited faculty. FIRST Cohort awardees must include professional and research development, mentoring, and

sponsorship strategies that reduce isolation and foster community and networking in their respective cohort model designs. It is also expected that all faculty appointed through this program will receive 75% protected research time for the length of the award, with the goal of supporting faculty members in successfully transitioning to competitive research awards in the future. In addition, each FIRST Cohort awardee will be responsible for evaluating its own FIRST program by collecting quantitative and qualitative data to share with the FIRST CEC. The FIRST CEC will work with the FIRST Cohort awardees to lead the development of a comprehensive evaluation for the FIRST program and to develop the FIRST Program Data Sharing Plan. The information learned from the FIRST program will be summarized and disseminated nationwide by the FIRST CEC.

The FIRST Cohort funding mechanism will fund Highly Resourced Institutions (HRI) and Limited Resourced Institutions (LRI) either individually or in a partnership to hire promising faculty from identified underrepresented groups, including “racial and ethnic minorities, those from disadvantaged backgrounds, individuals with disabilities, and women.” In this opportunity, LRIs are defined as institutions that have received less than \$50 million average in annual NIH funding over the last three years and have a historical commitment to educating underrepresented students and providing clinical health care services to medically underserved communities. HRIs are institutions that have received more than \$50 million average in annual NIH funding over the past three years. The funding opportunity states that HRIs must recruit a faculty cohort that is comprised of no fewer than ten scientists and LRIs, no fewer than six. If applicants choose to apply in partnership, an HRI/HRI or HRI/LRI partnership will require no fewer than ten scientists and an LRI/LRI partnership will require no fewer than six scientists. Faculty cohorts should include a diverse composition of scientific disciplines, with at least three scientists from the same discipline forming a cluster within the larger cohort. With this cluster structure, NIH aims to provide another layer of professional and scientific support for faculty within each cohort.

#### **Funding Opportunity Information:**

The application due date for both funding opportunities is **March 1, 2021** with a letter of intent due 30 days prior to the application due date. The earliest start date is **September 2021**.

NIH intends to commit up to \$70.5 million for up to four awards in the year 2021. The application budgets are limited to \$300,000 in direct costs in year one; \$3,275,000 in direct costs for years 2-4; and \$120,000 in direct costs in year 5. The maximum project period may not exceed five years. For the

FIRST CEC, NIH intends to commit up to \$11.4 million over 5 years to fund one award.

#### **Applicant Information:**

Any public or private institution of higher education or non-profit research institution is eligible to apply for the FIRST Cohort program either as an individual institution, or in partnership with other institutions (as described above).

Any public or private institution of higher education, non-profit research institution, for-profit business, or state or local government entity may apply for the CEC opportunity.

#### **Pre-Application Webinar:**

NIH will host a pre-application Technical Assistance webinar on **January 25, 2021, from 2 – 4 pm ET**. This webinar will clarify expectations for both the FIRST Cohort and the FIRST CEC funding opportunities that may not be available via the [FAQs](#). To join the webinar attendees should use the webcast link <https://nci.rev.vbrick.com/#/webcasts/nihfirst>.

#### *Sources and Additional Information:*

- The funding opportunity for the Cohort program can be found at <https://grants.nih.gov/grants/guide/rfa-files/RFA-RM-20-022.html>.
- The funding opportunity for the Coordination and Evaluation Center can be found at <https://grants.nih.gov/grants/guide/rfa-files/RFA-RM-20-023.html>.
- FIRST Program FAQs can be found at <https://commonfund.nih.gov/first/faqs>.
- The concept clearance for this program, approved by the NIH Council of Councils on January 24,

2020 is available at

[https://dpcpsi.nih.gov/sites/default/files/CoC\\_Jan\\_2020\\_1115\\_FIRST\\_program\\_concept\\_clearance.pdf](https://dpcpsi.nih.gov/sites/default/files/CoC_Jan_2020_1115_FIRST_program_concept_clearance.pdf).

## **15. DOE Funding Opportunities**

### **Upcoming Funding Opportunities**

#### **\$17 million for Chemical and Materials Sciences to Advance Clean Energy Technologies and Transform Manufacturing:**

DOE plans to release funding solicitation in February

- This funding opportunity will support single Principal Investigators and small teams (as opposed to large, multidisciplinary teams for EFRCs) to drive basic research priorities for material and chemistry research.
- DOE plans to fund the following topic areas (similar to EFRCs but no research in microelectronics and energy/water nexus and instead of quantum research a focus on critical materials):

- Science for Clean Energy: carbon-neutral hydrogen, solar energy and fuel, nuclear energy, catalysis, energy storage, subsurface science, direct air capture of CO<sub>2</sub>
- Science for Advanced Manufacturing: transformative manufacturing, chemical upcycling of polymers, synthesis science
- Other National Priority Research Areas: critical materials
- DOE plans to fund up to 20 awards ranging from \$500,000 to \$1 million per year over three years.
- New this year: Applications led by or in partnership with Minority Serving Institutions and applications including individuals from historically underrepresented groups in STEM will be strongly encouraged and will also be part of the formal review process and program factors that determine scores for winning proposals.
- There will likely be limited submission requirements of no more than two submissions for each lead institution.

**\$3 million for [University Training and Research for Fossil Energy Applications](#): DOE plans to release funding solicitation in February**

- The goals of this program are to educate and train the next generation of engineers and scientists and support novel, early-stage research at U.S. colleges and universities that advances DOE's fossil energy and carbon management mission.
- Research and development efforts are focused on technology development to mitigate and/or remediate legacy environmental impacts of coal-based generation systems; assessments of environmental benefits and impacts of utilizing legacy mining materials such as waste coal for the cultivation of other low-carbon products (e.g. biomass); and ensuring the safety and environmental integrity of systems that provide benefit for coal and power plant communities.
- This year the four topic areas will include:
  - Techno-economic analysis and lifecycle analysis screening of net-zero or net-negative, CCS-enabled, coal/waste coal and biomass power production,
  - Resource development site assessments to inform the analyses above,
  - Phytotechnology development for identification and/or remediation of sites exhibiting soil contamination via groundwater transport of metals from coal combustion product impoundments, and
  - Automated component inspection, analysis, and repair enabled by robotics.
- DOE plans to make up to 14 awards for \$400,000 each to support projects over two to three years.

**\$33 million for [Geologic Carbon Storage](#): DOE plans to release funding solicitation in February**

- DOE plans to award additional cooperative agreements under the [Carbon Storage Assurance Facility Enterprise \(CarbonSAFE\) Initiative](#).
- The focus will be on developing and demonstrating geologic storage sites with capacities to store at least 50 million metric tons of carbon dioxide and help accelerate the deployment of carbon capture and storage and carbon dioxide removal technologies.

**\$17 million for [Chemical and Materials Sciences to Advance Clean Energy Technologies and Transform Manufacturing](#): DOE plans to release funding solicitation in February**

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  - Science for Clean Energy: carbon-neutral hydrogen, solar energy and fuel, nuclear energy, catalysis, energy storage, subsurface science, direct air capture of CO<sub>2</sub>
  - Science for Advanced Manufacturing: transformative manufacturing, chemical upcycling of polymers, synthesis science
  - Other National Priority Research Areas: critical materials
- DOE plans to fund up to 20 awards ranging from \$500,000 to \$1 million per year over three years.
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- The focus will be on developing and demonstrating geologic storage sites with capacities to store at least 50 million metric tons of carbon dioxide and help accelerate the deployment of carbon capture and storage and carbon dioxide removal technologies.

**High Energy Physics (HEP) and Nuclear Physics (NP) focused funding opportunities for February 2022-March 2022:**

**\$20 million for Artificial Intelligence and Machine Learning (AI/ML) Research and Development for HEP**

- Priority topics are likely to include advancing AI/ML capabilities for more efficient processing of large data sets, modeling and mitigation of systematic uncertainties, high-throughput data selection, real-time data classification, and improved operations of particle accelerators and detectors.

**\$12 million for the Nuclear Data Interagency Working Group Research Program**

- DOE plans to support research projects using nuclear data and improving databases for users supported by Nuclear Physics, the Isotope Program and the National Nuclear Security Administration Office of Defense Nuclear Nonproliferation Research and Development.
- Research opportunities usually cover nuclear physics basic science, nuclear energy applications, non-proliferation and nuclear security applications, and other associated applications in radiation protection, planetary, and space-based science.
- DOE plans to make up to 20 awards averaging \$350,000 a year over three years.

**\$7 million for Quantum Information Science Research and Innovation for Nuclear Science**

- This would support research that would have a transformative impact on the nuclear physics mission area and/or advance quantum information science development enabled by nuclear physics-supported science, technologies, and laboratory infrastructure.
- Topics are likely to include quantum computation, quantum simulations and simulators, quantum sensing, nuclear physics detectors, nuclear many-body problem, ‘squeezed’ quantum states, entanglement at collider energies, and lattice gauge theories as well as novel areas of basic research.

**\$7 million for Research and Development of Next Generation Nuclear Physics Accelerator Facilities**

- DOE will support research and development efforts for accelerator systems of relevance to current or next generation NP accelerator facilities.
- Topics usually include accelerator research and development that significantly advances state-of-the-art accelerator capabilities for next generation machines for the study of nuclear physics, for improving the performance of existing facilities studying nuclear physics, or SRF technology.
- DOE plans to make up to 10 awards typically ranging from \$500,000 to \$1 million for two years.
- DOE awards are expected to be up to five years with a second five-year renewal and awards range from \$1 million to \$2 million

### **\$5 million for DOE Traineeships in High Energy Physics for Computation**

- In the last two years, HEP has funded graduate traineeship programs in accelerator physics and technology and instrumentation. The focus this year is to build expertise in computational tools, data management and analytics, and simulation techniques to advance HEP programs.
- DOE awards to a university or consortia of universities would support tuition, stipend, and travel costs for students enrolled in specific academic programs aimed at training graduate students in computational techniques needed for HEP programs, and provide some support for curriculum development and program administration.

### **ARPA-E Programs: February-August 2022**

ARPA-E is preparing to release various clean energy technology program solicitations in various topic areas, including:

- Mineralization of atmospheric carbon for sequestration and enhanced metals recovery (expected January 2022),
- Industrial decarbonization technologies for iron and steel production,
- High-energy, fast charging batteries for electric vehicle applications, and
- High-efficiency cooling for data centers.

### **\$8 billion for Hydrogen Hubs: May 2022**

DOE plans to release an \$8 billion funding solicitation to compete up to eight regional clean hydrogen hubs by May 15, 2022.

- DOE then plans to make awards no later than May 15, 2023. DOE has five years (from FY 2022 through FY 2026) to spend the \$8 billion, which means approximately \$1 billion over five years for each hub.
- A hydrogen hub is defined as a network of clean hydrogen producers, potential clean hydrogen consumers, and connective infrastructure located in close proximity. The hub must meet all three goals:

1. Demonstrate the production, processing, delivery, storage, and end-use of clean hydrogen (all components must be included);
  2. Demonstrably aid in the achievement of the clean hydrogen production standard, which is defined as hydrogen produced with a carbon intensity equal to or less than two kilograms of carbon dioxide-equivalent produced at the site of production per kilogram of hydrogen produced; and
  3. Can be developed into a national clean hydrogen network to facilitate a clean hydrogen economy.
- The infrastructure bill that funded these hubs sets out specific criteria DOE must use to select hubs, including:
    - **Feedstock diversity:** At least one regional clean hydrogen hub that demonstrates production of clean hydrogen from
      - fossil fuels,
      - renewable energy, and
      - nuclear energy.
    - **End-use diversity:** At least one regional clean hydrogen hub that demonstrates the end-use of clean hydrogen in
      - the electric power generation sector,
      - the industrial sector,
      - the residential and commercial heating sector, and
      - the transportation sector.
    - **Geographic diversity:** The hubs should be located in different regions of the country and shall use the energy resources abundant in that region.
    - **Hubs in natural-gas producing regions:** At least two hubs should be located in regions of the country with the greatest natural gas resources.
    - **Employment:** Priority should be given to hubs that are likely to create opportunities for skilled training and long-term employment to the greatest number of residents in the region.

## 14. Federal Opportunities for Minority-Serving Institutions

*February 14, 2022*

This document provides an overview of federal opportunities specifically available to Minority-Serving Institutions (MSIs), which are United States higher education institutions based on historical origin or percentage of minority students enrolled. Programs described below are likely of interest to various Hispanic-Serving Institutions (HSIs), Historically Black Colleges and Universities (HBCUs), and Tribal Colleges and Universities (TCUs), among other MSIs.

This document only includes programs either currently or previously funded by Congress and omits those that have been authorized but have not received appropriations. Some pieces of legislation currently being negotiated in Congress, such as the *Build Back Better Act*, include new MSI-focused programs but have yet to be authorized or appropriated. Lewis-Burke will continue updating clients on new opportunities in this space as they are created and applications are solicited.

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## Department of Education (ED)

**The HSI Division of the Department of Education (ED) offers three grant programs.** An HSI designation is granted by ED when an institution has 25 percent of its undergraduate full-time students identifying as Hispanic.

- **Developing Hispanic-Serving Institutions Program** – This program is authorized under Title V, Part A of the *Higher Education Act* (HEA) to expand educational opportunities for Hispanic students, increase their enrollment in institutions of higher education and attainment of post-secondary degrees, as well as improve educational and institutional quality. The fiscal year (FY) 2020 application deadline was **February 24, 2020**. It is anticipated that ED recompetes this program in FY 2022.

Source: <https://www2.ed.gov/programs/idueshsi/index.html>.

- **Promoting Postbaccalaureate Opportunities for Hispanic Americans (PPOHA) Program** – This program is authorized under Title V, Part B of HEA and seeks to increase the attainment of postsecondary degrees by Hispanic and low-income students. PPOHA provides grants to improve the quality of and expand post-baccalaureate programs for Hispanic students. The program has not been competed since fiscal year (FY) 2019, when it had an application deadline of **July 26, 2019**.

Source: <https://www2.ed.gov/programs/ppoha/index.html>.

- **Hispanic-Serving Institutions-Science, Technology, Engineering, or Mathematics (HSISTEM) and Articulation Programs** – Authorized by Title III, Part F of HEA, this program is intended to increase the number of Hispanic and low-income students in STEM fields. Additionally, HSI STEM encourages articulation agreements between two-year and four-year institutions in which credits apply to associate

degrees and transfer to bachelor's degrees. This program was most recently competed in FY 2021, with an application deadline of **June 14, 2021**. Prior to FY 2021, it most recently competed in FY 2016. *Source:* <https://www2.ed.gov/programs/hsistem/index.html>.

- **The Asian American and Native American Pacific Islander-Serving Institutions (AANAPISI) Program**— Authorized by Title III, Part A of HEA, the AANAPISI program offers grants to eligible institutions to improve their capacity to serve Asian American and Native American Pacific Islander students, as well as low-income individuals. The fiscal year (FY) 2021 deadline was **June 28, 2021**.

*Source:* <https://www2.ed.gov/programs/aaapi/index.html>.

- **The Strengthening Historically Black Colleges and Universities Division** offers several grant programs meant to support undergraduate and graduate education at Historically Black Colleges and Universities (HBCUs) and Predominately Black Institutions (PBIs). An overview of some programs offered by this division is below.

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- **Predominantly Black Institutions (PBI) Competitive Grant Program** – Authorized by Title III, Part F of HEA, this program supports programs at PBIs to strengthen programs focused on the following areas: STEM, health, internationalization/globalization, teacher preparation, and improving educational outcomes for African American males. The FY 2021 deadline for this program was **June 28, 2021**. PBIs can also receive formula grants from ED to be used to improve their capacity to serve middle and low-income students.

**Strengthening Historically Black Colleges and Universities (HBCUs) Program** – Authorized by

Title III, Part B of HEA, this program provides institutional support to HBCUs to expand their academic, fiscal, and administrative capabilities. The most recent application deadline was **July 30, 2020**.

*Source:* <https://www2.ed.gov/programs/dues/title3b/index.html>.

*Source:* <https://www2.ed.gov/programs/pbi/index.html>.

- A full list of funding offered through the Strengthening Historically Black Colleges and Universities Division is available at <https://www2.ed.gov/about/offices/list/ope/dues/index.html>.

ED's Institutional Service office also provides grant funding for predominantly minority enrollment institutions through the Minority Science and Engineering Improvement Program (MSEIP).

- **Minority Science and Engineering Improvement Program (MSEIP)** – This program supports institutions with over 50 percent minority student enrollment with grants to increase underrepresented minorities (particularly minority women) in science and engineering programs. The FY 2021 application deadline was **July 6, 2021**.

Source: <https://www2.ed.gov/programs/idadesmsi/index.html>.

The **Institute of Education Sciences (IES)** at ED has previously instituted special programs to support MSIs and diverse student and faculty development. MSIs should consider applying to any of the relevant education and special education research funding opportunities available at <https://ies.ed.gov/funding/>.

○ **Research Training Programs in the Education Sciences Program** – This initiative encourages applications from minority-serving institutions and other institutions partnered with MSIs to support innovative approaches for training and mentoring of students and researchers from diverse backgrounds for success in education research careers. For FY 2022, IES competed three topics under the Research Training Programs in the Education Sciences: Early Career Mentoring for Faculty at MSIs; Postdoctoral Research Training; and Methods Training for Education Research. Applications were due on **September 9, 2021**.

Source: [https://ies.ed.gov/funding/ncer\\_rfas/training.asp](https://ies.ed.gov/funding/ncer_rfas/training.asp).

## **National Science Foundation (NSF)**

Along with advancing the frontiers of research into the future, securing global leadership, and establishing the new Translation, Innovation and Partnerships (TIP) Directorate, ensuring accessibility and inclusivity is one of the core pillars of NSF Director, Dr. Sethuraman Panchanathan's (Panch), vision for NSF. NSF and its governing body, the National Science Board (NSB), continue to convene discussions and workshops to examine NSF programs, policies, and procedures to increase the agency's activities around broadening participation and the diversity of the NSF research and education community. As well as programs to support MSIs, NSF continues to establish new programs to promote broadening participation to increase participation of individuals traditionally underrepresented in STEM. Many NSF solicitations, particularly center-level competitions encourage participation from MSIs.

○ **Computer and Information Science and Engineering Minority-Serving Institutions Research Expansion Program (CISE-MSI Program)** – This program aims to increase engagement from MSIs in CISE-funded research projects. Through the CISE-MSI program, NSF will support 10-17 awards across the categories below:

- Thread 1: **Research Capacity Building Planning Projects (RCBP)** – Includes: Enhancement and Development (RCBP-ED) – Track 1A; and Research-Focused Projects (RCBP-RF) – Track 1B. NSF will support up to four awards, up to \$400,000 for two years.
- Thread 2: **Demonstration Projects (DP)** – NSF will support up to 10 awards, up to \$600,000 for three years.
- Thread 3: **Research Partnerships Enhancement Projects (RPEP)** – NSF will support two to three awards up to \$1.2 million for up to four years

Proposals are due: **February 11, 2022 (and annually thereafter)**; **NOTE:** For this program, MSIs include HBCUs, HSIs, and TCUs as defined by the U.S. Department of Education and the National Academies of Sciences, Engineering and Medicine. *Additional Information: The CISE-MSI program page is available at <https://beta.nsf.gov/funding/opportunities/computer-and-information-science-and-engineering-minority-serving>. The CISE-MSI program solicitation is available at <https://www.nsf.gov/pubs/2022/nsf22518/nsf22518.htm>.*

- **(NEW) Build and Broaden 3.0 (B2 3.0)** – This program aims to increase proposal submissions, advance research collaborations and networks involving MSI scholars, and support research activities in the Social, Behavioral, and Economic sciences at MSIs. Proposals are due **March 1, 2022**. *Additional information is at <https://beta.nsf.gov/funding/opportunities/build-and-broaden-30-enhancing-social-behavioral-and-economic-science>.*
  
- **Improving Undergraduate STEM Education: Hispanic-Serving Institutions (HSI Program)** – This program focuses on increasing participation, retention, and graduation rates of underrepresented minorities in STEM fields. There are three tracks available to applicants: Track 1: Planning or Pilot Projects (PPP) and Track 2: Implementation and Evaluation Projects (IEP); and Track 3: Institutional Transformation Projects (ITP). NSF has \$22.5 million funding available for the HSI program in FY 2022 (double the FY 2021 funding amount) that will be distributed as follows: 20-40 PPP awards at \$200,000 to \$300,000 for two years; up to 15 IEP awards at \$500,000 to \$800,000 for three- to five-year projects; and 3-7 ITPs up to \$3 million over five-years. The deadline for PPP, IEP, and ITP is **March 28, 2022**, and **August 31, 2022** for PPP and ITP proposals *Source: <https://beta.nsf.gov/funding/opportunities/improving-undergraduate-stem-education-hispanic-serving-institutions-hsi>.*
  
- **Historically Black Colleges and Universities Undergraduate Program (HBCU-UP)** – This program aims to strengthen undergraduate STEM education and research at HBCUs to broaden participation in the STEM workforce. Support is available through several tracks including Targeted Infusion Projects (TIP); Broadening Participation Research (BPR) in STEM Education projects; Research Initiation Awards (RIA); Implementation Projects (IMP); Achieving Competitive Excellence (ACE) Implementation Projects; Broadening Participation Research Centers (BPRC); and Other Funding Opportunities include EARly-Concept Grants for Exploratory Research (EAGER), Rapid Response Research (RAPID), conference, and planning grants. Preliminary proposals are due March 22, Letters of Intent are due July 26 and September 12, with full proposals due **October 4, 2022**, for RIAs, **November 10, 2022**, for TIP, BPR, IMP, ACE, and **November 22, 2022**, for BPRC (and annually thereafter). *More information is at <https://beta.nsf.gov/funding/opportunities/historically-black-colleges-and-universities-undergraduate-program-hbcu>.*
  
- **Centers of Research Excellence in Science and Technology (CREST) and HBCU Research Infrastructure for Science and Engineering (RISE)** – CREST provides support to enhance the research capabilities of MSIs through the establishment of centers that integrate education and research. The HBCU-RISE program supports the expansion of institutional research capacity and the production of doctoral students at HBCUs, especially those from groups underrepresented in STEM. CREST and HBCU-RISE support a range of project types. Letters of intent are due annually in December with full proposals due in February for HBCU-RISE and December for CREST. Next year, it is expected that full proposals for CREST will be due **December 2, 2022** and full proposals for HBCU-RISE will be due no later than **February 9, 2023**.

*Source: <https://beta.nsf.gov/funding/opportunities/centers-research-excellence-science-and-technology>.*

- **Tribal Colleges and Universities Program (TCUP)** – TCUP supports Tribal Colleges and Universities,

Alaska Native-serving institutions, and Native Hawaiian-serving institutions to promote high-quality STEM education, research, and outreach. TCUP supports a range of project types with annual deadlines in April, June, September, and December. *Source: <https://beta.nsf.gov/funding/opportunities/tribal-colleges-and-universities-program-tcup>.*

- **Partnerships for Research and Education in Materials (PREM)** – PREM supports partnerships between minority-serving institutions and centers or facilities supported by the Division of Materials Research (DMR). This program is held every three years with the last deadline being **February 5, 2021**. Source: <https://beta.nsf.gov/funding/opportunities/partnerships-research-and-education-materials-prem>.
- **Partnerships for Research and Education in Chemistry (PREC)** – Supports partnerships between MSIs and “CHE-supported Centers for Chemical Innovation, NSF's ChemMatCARS, the Molecular Sciences Software Institute (MolSSI), or the Molecule Maker Lab Institute (MMLI).” Proposals were due **January 21, 2022**. More information is available at <https://beta.nsf.gov/funding/opportunities/partnerships-research-and-education-chemistry-prec>.
- **Partnerships for Research and Education in Physics (PREP)** – Supports partnerships between MSIs and Division-supported Physics Frontiers Centers to increase the participation of members of underrepresented groups in physics. Proposals were due **January 21, 2022**. More information is available at <https://beta.nsf.gov/funding/opportunities/partnerships-research-and-education-physics-prep>.

## **National Endowment for the Humanities (NEH)**

- **Humanities Initiatives at Hispanic-Serving Institutions/Historically Black Colleges and Universities/Tribal Colleges and Universities** – These annual grants fund humanities education and teaching through the improvement or creation of new programs or resources at HSIs/HBCUs/TCUs. Humanities Initiatives (HI) program opportunities are also available for HBCUs/MSIs and non-MSIs under the HI at Colleges and Universities and the HI at Community Colleges programs. Projects should focus on a core theme or topic area in the humanities. Supported activities include curriculum development, student enrichment, faculty development, and partnerships. Of the last five years, the Humanities Initiatives at HSIs program has funded 13 percent of applicants annually. The Humanities Initiatives at HBCUs program has funded 15 percent of applicants and the Humanities Initiatives at Tribal Colleges has funded 23 percent of applicants annually. Applications for this year’s competitions are due on **May 9, 2022**. For those interested, NEH offers prerecorded webinars and a live Q&A session as well as the option to submit a draft concept for review.

### *Sources:*

- *Humanities Initiatives at Hispanic Colleges and Universities -*  
<https://www.neh.gov/grants/education/humanities-initiatives-hispanic-serving-institutions>
- *Humanities Initiatives at Historically Black Colleges and Universities -*  
<https://www.neh.gov/grants/education/humanities-initiatives-historically-black-colleges-and-universities>
- *Humanities Initiatives at Tribal Colleges and Universities -*  
<https://www.neh.gov/grants/education/humanities-initiatives-tribal-colleges-and-universities>

- **Awards for Faculty at Hispanic-Serving Institutions/Historically Black Colleges and Universities/Tribal Colleges and Universities** – These awards support individual faculty and staff

members employed or retired from HSIs/HBCUs/TCUs who are pursuing research of interest to the humanities. The model is intentionally flexible; applicants can determine the type of research and the audience. Previous projects have included written articles, translations, monographs, and digital materials, among others. Of the last five years, the Awards for Faculty programs averaged 143 applications per year, of which approximately 12 percent were funded. The next application deadline is **April 13, 2022**.

Sources:

- *Awards for Faculty at Hispanic Colleges and Universities -*  
<https://www.neh.gov/grants/research/awards-faculty-hispanic-serving-institutions>
- *Awards for Faculty at Historically Black Colleges and Universities -*  
<https://www.neh.gov/grants/research/awards-faculty-historically-black-colleges-and-universities>
- *Awards for Faculty at Tribal Colleges and Universities -*  
<https://www.neh.gov/grants/research/awards-faculty-tribal-colleges-and-universities>

### **United States Department of Agriculture (USDA)**

MSIs are eligible to apply for competitive grant programs at USDA. In addition, there are specific programs designated for 1890s Historically Black Land-Grant Colleges and Universities, 1994 Tribal Land-Grant Colleges and Universities, insular areas, Alaska Native-Serving Institutions, and Native Hawaiian-Serving Institutions.

- USDA also designates the status of **Hispanic-Serving Agricultural Colleges and Universities (HSACU)** to institutions offering accredited agriculture-related programs where at least 25 percent of the institution's full-time student enrollment is Hispanic. HSACU status offers access to an endowment, equity grants, institutional capacity-building grants, applied research grants, and extension grants. An 1862 land-grant institution cannot qualify as an HSACU.

Source: <https://nifa.usda.gov/hispanic-serving-agricultural-colleges-and-universities-hsacu>.

- USDA's **Hispanic-Serving Institutions National Program** is a program that aims to foster partnerships between USDA and HSIs to "provide increased professional development, workforce development, and exposure opportunities for faculty, staff, and students." Specifically, the program offers a variety of internship opportunities, engages in outreach to HSIs, and provides scholarships and fellowships.  
Source: <https://www.usda.gov/partnerships/hispanic-serving-institutions>.

- **USDA E. Kika De La Garza Fellowship Program** – Garza fellowships allow faculty and staff from HSIs to come to USDA headquarters in Washington, D.C. for one week in the summer. Fellows learn more about how federal agencies, including USDA, operate, and about opportunities that are available for HSIs and their students. This program is currently accepting applications, to be submitted by **March 2, 2022**.

Source: <https://www.usda.gov/sites/default/files/documents/2022-hsi-fellowship-application.pdf>

- **Hispanic-Serving Institutions Education Grants Program**—This is a competitive grants program to enhance the ability of HSIs to provide food and agricultural sciences education. The most recent RFA closed on **January 28, 2022**.

Source: <https://nifa.usda.gov/funding-opportunity/hispanic-serving-institutions-education-grants-program-hsi>

- **Hispanic Association of Colleges and Universities (HACU) National Internship Program** – Established in 1994, USDA provides internship experiences for students from HSIs and other colleges and universities. This program runs three sessions annually and places students across USDA agencies to address USDA's workforce planning needs; promoting participation in and study of agriculture, food, natural resources, and related disciplines; and exposing students to careers in the federal government.

Source: <https://www.usda.gov/partnerships/hispanic-serving-institutions> **Department of Defense (DOD)**

- **Department of Defense Research and Education Program for Historically Black Colleges and Minority-Serving Institutions (HBCU/MSI)** – The purpose of the Education Program is to increase research and engineering capacity related to national defense and the number of minority graduates from STEM fields. Successful applications will connect to DOD priorities and current research activities including, but not limited to artificial intelligence, cyber, biotechnology, quantum, materials science, or Fully Networked Command, Control and Communications (FNC3). Applications are accepted on a rolling basis with a current closing deadline of **April 30, 2024**.

Source: <https://www.grants.gov/web/grants/view-opportunity.html?oppld=316548>

- **DOD Research and Education Program for Historically Black Colleges and Minority-Serving Institutions (HBCU/MSI) Equipment/Instrumentation** – This opportunity is an aspect of the program listed above, but this differs by focusing on supporting the acquisition of equipment/instrumentation to augment existing capabilities or develop new capabilities in priority areas of the DOD to enhance research capabilities at MSIs and HBCUs. Applications for the FY 2022 cycle closed on **August 16, 2021**, but the program is expected to be re-competed next year.

Source: <https://www.grants.gov/web/grants/view-opportunity.html?oppld=333481>

- **Office of Naval Research (ONR) HBCU/MI Faculty Start-up Program in Materials**—The Start-up Program in Materials aims to support minority institutions in efforts to provide start-up funding for new, untenured faculty, who are teaching and researching in a materials science/engineering of importance to the DOD. Funding cannot replace a startup package, but it can be used to enhance a startup package, including the use of funding for equipment, supplies, and lab support. The proposal submission window recently closed on **January 30, 2022**, for FY 22 submission, but is an annual program that will run again next year.

Source: <https://www.onr.navy.mil/en/Science-Technology/Departments/Code-33/All-Programs/332-naval-materials/hbcu-faculty-start-up-materials>

- **Naval Research Laboratory (NRL) HBCU/MI Undergraduate Internship Program** – This NRL HBCU/MI Internship program supports undergraduates at minority-serving institutions through a paid summer internship at the NRL in Washington, DC. Preference is given to students pursuing science, technology,

engineering, and mathematics (STEM) careers. Currently, the status for the Summer 2022 program in-person/virtual is TBD.

Source: <https://www.nrl.navy.mil/Careers/Students/HBCU-MI-Research-Internship-Program/>

- **Technical Assistance Workshops** – The DOD periodically hosts technical assistance workshops for Minority Serving Institutions to share information about Department funding opportunities and tips for award-winning proposals.

## **Department of Homeland Security (DHS)**

- **Centers of Excellence** – The Centers of Excellence program, DHS’ flagship program for universities, brings together several institutions to develop research solutions for multi-faceted DHS priorities. Competitions are infrequent but encourage applicants to form partnerships with MSIs on research and education programs. When a new competition is announced, MSIs are encouraged to seek to lead centers or form partnerships with interested consortia.

Source: <https://www.dhs.gov/science-and-technology/centers-excellence>

- **MSI Program** – Through the MSI Program, DHS works to develop a diverse talent pool to bolster the Homeland Security Enterprise workforce. This program supports qualified university students and faculty through the following initiatives:
  - *DHS Summer Research Team Program for MSIs* – DHS’s Science and Technology Directorate’s Office of University Programs sponsors this program to bring faculty and students from MSIs to conduct research at DHS Centers of Excellence (Centers). Research must relate to homeland security science, mathematics, and engineering priorities. The research focus areas for this year include border and maritime security, chemical and biological defense, critical infrastructure and resilience, cybersecurity, explosives, and first responders.
  - *DHS Scientific Leadership Award Program* – This program supports the development of homeland security science and engineering teaching initiatives, curriculum development, and scholarships at MSIs. According to DHS, “these awards support the development of enduring educational and research capabilities within the MSI communities, which include Historically Black Colleges and Universities, Hispanic Serving Institutions and Tribal Colleges and Universities. Each Scientific Leadership Award recipient is required to partner with a COE.” *Additional information on both programs within the MSI Program can be found at <https://www.dhs.gov/science-and-technology/minority-serving-institutions-program>.*

## **National Institutes of Health (NIH)**

The NIH only has a few programs explicitly focused on MSIs, however, there are additional programs that focus on supporting the development of a diverse biomedical research workforce.

- **National Institute of Minority Health and Health Disparities (NIMHD) Research Centers in Minority-Serving Institutions (RCMI)** – NIMHD’s Research Centers in Minority Serving Institutions (RCMI) program seeks to expand the research infrastructure and capabilities at doctorate-awarding institutions serving a

significant percentage of minority groups underrepresented in biomedical science. The program includes grants (eligibility varies) in health sciences and/or health professions.

Source: <https://nimhd.nih.gov/programs/extramural/research-centers/rcmi/index.html>

- **RCMI Specialized Centers** – The goal of this program is to provide support through a cooperative agreement to institutions that offer doctoral degrees in the health professions or health-related sciences and have a historical and current commitment to educating underrepresented students. The purpose of RCMI Centers is to enhance institutional research capacity and to support research that advances minority health and eliminates health disparities. The current solicitation is closed but we anticipate this program will be re-competed.

Source: <https://grants.nih.gov/grants/guide/rfa-files/RFA-MD-22-002.html>

- **Transformative Research to Address Health Disparities and Advance Health Equity**—This NIH Common Fund developed this program to support innovative research projects that would have a major impact in developing interventions to reduce or eliminate health disparities and health inequities. This program spurred out of the NIH UNITE program which is NIH’s initiative to end structural racism in biomedical research. In 2021, the NIH issued two funding opportunities for this new program, including one for investigators at MSIs. We anticipate new solicitations of this award in FY2022.

Source: <https://commonfund.nih.gov/healthdisparitiestransformation>

- **Individual Predoctoral National Research Service Award (NRSA) F31 Diversity Fellowships (NIHwide)**— This individual predoctoral fellowship provides funding to promote diversity in health-related research by supporting the research training of predoctoral students from diverse backgrounds (see Notice of [NIH’s Interest in Diversity](#)). This funding opportunity follows standard due dates for fellowship grants at NIH. The next due date is **April 8, 2022**.

Source: <https://grants.nih.gov/grants/guide/pa-files/PA-21-052.html>

- **Maximizing Opportunities for Scientific and Academic Independent Careers (MOSAIC) Postdoctoral Career Transition Award to Promote Diversity (K99/R00)** – The MOSAIC program is a part of NIH’s efforts to improve diversity within the biomedical research workforce by supporting the transition of postdoctoral researchers from diverse backgrounds (see Notice of [NIH’s Interest in Diversity](#)) to independent research positions at research-intensive institutions. Applicants must have no more than 4 years of postdoctoral research experience at the time of application. This funding opportunity follows standard due dates for research career development grants at NIH. The next due date is **June 12, 2022**.

Source: <https://grants.nih.gov/grants/guide/pa-files/PAR-21-271.html>

- **Research Supplements to Promote Diversity in Health-Related Research (NIH-wide Administrative Supplement)** — This program provides funding to improve the diversity of the research workforce by recruiting and supporting students, postdoctoral fellows, and other eligible investigators from groups that have been shown to be underrepresented in health-related research. This supplement opportunity is available only to investigators already holding an NIH grant. Applications are typically accepted on a rolling basis and dependent upon Institute/Center.

Source: <https://grants.nih.gov/grants/guide/pa-files/PA-21-071.html>

- **National Institute of General Medical Sciences (NIGMS) – Baccalaureate Programs**

- **Post-Baccalaureate Research Education Program (PREP)**— This program supports institutions that promote minorities with baccalaureate degrees to pursue a research doctorate in the biomedical sciences. The award provides institutional support to provide extensive research training through 1-to-2-year apprenticeships. Ultimately, the PREP Awards should help to diversify research-intensive institutions’ doctorate programs. This is a longstanding program at the NIH and we anticipate a new solicitation to be released soon for awards in 2023.

Source: <https://www.nigms.nih.gov/training/PREP>

- **National Institute of General Medical Sciences (NIGMS) Maximizing Access to Research**

**Careers (MARC) (T34)** — The objective of this program is to develop a diverse pool of undergraduates who then complete doctoral degrees in the biomedical sciences. The program is limited to proposals from research-intensive institutions (i.e. those institutions with an average of \$7.5 million or more in total costs over the last three fiscal years). Applications are due on **May 26, 2022**.

Source: <https://grants.nih.gov/grants/guide/pa-files/PAR-21-147.html>

- **National Institute of Biomedical Imaging and Bioengineering (NIBIB) Enhancing Science, Technology, Engineering, and Math Educational Diversity (ESTEEMED) Research Education Experiences (R25)** — The ESTEEMED program aims to “support educational activities that enhance the diversity of the biomedical, behavioral and clinical research workforce.” This program supports educational activities that focus on research experiences and mentoring activities for underrepresented undergraduate freshmen and sophomores in STEM fields related to bioengineering. The next application due date is **June 24, 2022**. This program is open to Institutions of Higher Education; MSIs are encouraged.

Source: <https://grants.nih.gov/grants/guide/pa-files/PAR-20-223.html>

- Additional diversity-related funding opportunities can be found on the NIH Diversity in Extramural Programs website at <https://extramural-diversity.nih.gov/guidedata/data>.

## **Department of Health and Human Services (HHS)**

HHS has a multitude of programs aimed at improving minority health outcomes, increasing diversity of the healthcare workforce, and otherwise supporting underrepresented and underserved minorities in healthcare settings. However, there are a limited number of regularly competed funding opportunities or resources that are specifically targeted towards MSIs.

- **Minority Research Grant Program** – The Centers for Medicare and Medicaid Services (CMS) supports researchers at MSIs “exploring how CMS can better meet the health care needs of racial and ethnic minorities, people with disabilities, sexual and gender minorities, and rural populations.” The program aims to develop research capacity at MSIs, better understand root causes of health disparities, and disseminate best practices. The program was run in FY 2021 and three grants were awarded.

Source: <https://www.cms.gov/About-CMS/Agency-Information/OMH/equity-initiatives/advancing-health-equity/minority-research-grant-program>

- **HRSA Office of Health Equity** – The Health Resources and Services Administration (HRSA) Office of Health Equity facilitates MSI engagement with the agency. This includes communication about relevant funding opportunities, participation in grant review panels, technical assistance, and other activities. Additional information: <https://www.hrsa.gov/about/organization/bureaus/ohe/msis.html>
  - HRSA also occasionally releases solicitations specifically targeted towards MSIs, such as the “[Building the HIV Workforce and Strengthening Engagement in Communities of Color](#)” Program. However, these programs are usually not competed annually.
  - Other programs at HRSA not specific to MSIs but focused on minority faculty, care providers, or patients include the [Area Health Education Centers](#), the [Faculty Loan Repayment Program](#), the [Scholarships for Disadvantaged Students](#) program, and the [Centers of Excellence](#) program.
- **Office of Minority Health** – The HHS Office of Minority Health (OMH) funds a variety of awards focused on improving health outcomes among racial and ethnic minority populations. Eligibility for these awards is sometimes restricted to MSIs, and often encourages applicants to be or partner with MSIs. Additional information: <https://minorityhealth.hhs.gov/>.

## Department of Energy (DOE)

DOE is committed to increasing engagement and funding opportunities with Minority Serving Institutions (MSI) and underrepresented groups. The DOE Office of Science has taken the lead in coordinating these efforts and in December 2020, it established a formal working group to lead this effort. Specific actions the group has taken include identifying and developing opportunities to engage MSI faculty in Office of Science-sponsored research funding and increasing the number of applications (and associated proposal success rates) having MSIs as the lead institution submitted to Office of Science-sponsored funding opportunity announcements; developing partnerships to attract and sponsor underrepresented groups in Office of Science-sponsored research; and increasing outreach, engagement, and recruitment of underrepresented students and faculty to Office of Science-sponsored research opportunities at the DOE national laboratories, including those from MSIs.

- **MSI Listening Sessions** — The Office of Science has launched a series of listening sessions at MSIs to seek community input on barriers to participation in Office of Science-sponsored research and opportunities for overcoming those barriers. The listening sessions focused on some key questions, including:
  - What aspects or requirements of Office of Science solicitations present barriers to MSI faculty in applying?
  - What types of resources or scope elements of a solicitation hold potential to enable MSIs and faculty at MSIs to overcome these barriers?
  - How can the Office of Science and DOE National Laboratories better collaborate with academic research institutions, particularly MSIs, to increase the recruitment, retention, and advancement of underrepresented groups in STEM fields supported by the Office of Science at the undergraduate and graduate level?

- **NNSA Minority Serving Institution Partnership Program** – DOE’s National Nuclear Security Administration provides grants to students of minority-serving institutions in STEM disciplines relevant to nuclear security, nonproliferation, and other emerging science and technology fields of importance to DOE national security missions. NNSA funds minority-serving institutions through consortium-based teams which have access to expertise and capabilities at the NNSA labs and sites. In FY 2021, Congress appropriated \$35 million for this program. The next competition is expected in December 2022. *Source: <https://www.energy.gov/nnsa/nnsa-minority-serving-institution-partnership-program>.*

- **Minority Educational Institution Student Partnership Program** – This summer internship program is focused on providing students interested in STEM fields opportunities to work with a mentor from one of the 17 DOE national laboratories, site offices, or DOE Headquarters on scientific research or a focus on policy, business, and government relations. The internship provides financial support, including lodging, round trip airfare, and student stipends. Students gain professional and technical career experience while working side-by-side with an assigned mentor who is a subject matter expert at DOE or the national laboratories. DOE usually releases a request for proposals in January and they are typically due in April.

*Source: <https://www.energy.gov/diversity/minority-educational-institution-student-partnership-program-meispp-internships>*

- **Technical Assistance Workshops** – Upon request, DOE will schedule technical assistance workshops at MSIs to share information about DOE funding opportunities, tips for award winning proposals, and introduce faculty to DOE program managers. In FY 2020, Congress provided \$600,000 to DOE to support these outreach activities. *For additional information, call the Office of Economic Impact and Diversity at 202-586-8383.*

## **Department of Transportation (DOT)**

- **Federal Aviation Administration: Minority-Serving Institution Intern Program** – This program provides students from MSIs internship opportunities throughout the year in fields including air traffic control, computer science, aviation management, business administration, engineering, and information technology (IT). Students are compensated for travel and given a weekly stipend, as well as academic credit. Only students who are juniors or above are eligible to apply and a 3.0 GPA is required. Internships are offered in Spring, Summer, and Fall, so application deadlines are determined based on the semester being applied for.

*Source: <https://www.faa.gov/jobs/students/internships/minority/>*

- **Federal Highway Administration: Summer Transportation Internship Program for Diverse Groups** – This internship offers currently enrolled college and university students a ten-week paid internship at the Department of Transportation headquarters and in field offices across the country. This internship program is open to all students who are juniors or above, and those with a 3.0 GPA will be given priority. The program is focused on providing opportunities to traditionally underrepresented groups in the transportation sector, such as women and persons with disabilities. Applications for the next internship cycle are expected to be released in early **January 2023**.

## **National Aeronautics and Space Administration (NASA)**

- **Minority University Research and Education Programs Small Projects** – This is a competitive grant program that funds STEM projects at minority-serving institutions by creating “innovative approaches to using NASA-themed content to support higher education teaching and learning.” The target population is students enrolled in a STEM major at a college or university. Awards are provided on a one-year basis but can be renewed for two additional years depending on the program’s success in meeting objectives. Source: <https://www.nasa.gov/stem/murep/home/index.html>

## Department of Commerce (DOC)

Like many other federal agencies, DOC’s interest in supporting diversity, equity, and inclusion, specifically through collaborations with MSIs, has increased tremendously under the Biden Administration. The Economic Development Administration (EDA) recently released its updated [investment priorities](#) and among the new additions was equity, specifying the need for projects to impact underserved populations and communities within geographies that have been systemically denied opportunities for economic prosperity. Projects that support MSIs meet this criterion. Additionally, the Minority Business Development Agency (MBDA) was permanently authorized for the first time since its inception through the *Infrastructure Investment and Jobs Act* (IIJA), and included in that authorization were several efforts to advance partnerships with MSIs. Specifically, the authorization creates rural business centers that are intended to be run by Historically Black Colleges and Universities (HBCUs) and other MSIs and the Parren J. Mitchell Entrepreneurship Education Grant program to generate an entrepreneurial curriculum at HBCUs and MSIs across the nation.

- **Minority-Serving Institutions Program** – The Agency’s Office of Civil Rights operates the program, which works to ensure equal access to all DOC opportunities, contracts and grants, and supports partnerships with MSIs.

Source: <https://www.commerce.gov/cr/programs-and-services/minority-serving-institutions-msi-program>

- **MBDA Business Centers** – MSIs and HBCUs can partner with minority-owned firms seeking to penetrate new markets and scale their business.

Source: <https://www.mbda.gov/mbda-programs>

## National Oceanic and Atmospheric Administration (NOAA)

- **José E. Serrano Educational Partnership Program with Minority-Serving Institutions (EPP/MSI) Cooperative Science Centers** – The EPP/MSI Cooperative Science Centers (CSC) are focused on increasing the number of students from underrepresented backgrounds who pursue degrees in fields related to NOAA’s mission. There are currently four CSCs that are led by MSIs but include a consortium of partners including MSI and non-MSI institutions. In addition to the centers, the program also offers a scholarship program for interested undergraduate students. *More information about the CSCs is available at <https://www.noaa.gov/office-education/epp-msi/csc> and the undergraduate scholarships can be found at <https://www.noaa.gov/office-education/epp-msi/undergraduate-scholarship>.*

## Department of Interior (DOI)

- **Minority-Serving Institutions Program** – The agency’s Office of Civil Rights operates the program, which looks to support mutually beneficial partnerships between DOI and students and faculty at MSIs.

DOI engages in this program through “in-kind services, volunteerism, diverse hiring, grants and contacts.” DOI is particularly interested in recruiting potential employees and partners from MSIs. DOI also has a series of MOUs with the Hispanic Association of Colleges and Universities (HACU) and other minority- serving societies and organizations. Additionally, within DOI, the Office of Surface Mining Reclamation and Enforcement (OSMRE) has a Minority Higher Education Program (MHEP) to support partnerships with MSIs that have degree programs related to the OSMRE mission. The Fish and Wildlife Service also partners with MSIs. Sources: <https://www.doi.gov/pmb/eo/doi-minority-serving-institutions-program>