

# NJIT Research Newsletter

Issue: ORN-2020-49

Happy Holidays!

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**NJIT Research Newsletter** includes recent awards, and announcements of research related seminars, webinars, national and federal research news related to research funding, and **Grant Opportunity Alerts** (with links to sections). The Newsletter is posted on the NJIT Research Website <https://research.njit.edu/funding-opportunities> .

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## Special Announcements

### **NJIT Pandemic Recovery Plan Research Continuity and Phased Recovery Plan**

<https://research.njit.edu/njit-pandemic-recovery-plan>

NJIT faculty, staff, and students at research facilities must follow the specific social distancing and safety protocols including the use of personnel protective equipment (PPE) as required by the institutional, state and federal guidelines in the respective phase of the research continuity plan. State and national information regarding current conditions can be found at:

- New Jersey's COVID-19 information hub: <https://covid19.nj.gov/index.html>

- CDC guidelines on “Symptoms of Coronavirus”: <https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html>
- CDC guidelines on “Use of Cloth Face Coverings to Help Slow the Spread of COVID-19”: <https://www.cdc.gov/coronavirus/2019-ncov/prevent-getting-sick/diy-cloth-face-coverings.html>

The details on NJIT Research Continuity and Phased Recovery Plan and associated protocols are posted on the website <https://research.njit.edu/njit-pandemic-recovery-plan>

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## [Grant Opportunity Alerts](#)

Keywords and Areas Included in the Grant Opportunity Alert Section Below

**[NSF](#): Long Term Research in Environmental Biology (LTREB); Integrative Research in Biology (IntBIO); Conferences and Workshops in the Mathematical Sciences; Molecular Foundations for Biotechnology (MFB); Spectrum and Wireless Innovation enabled by Future Technologies (SWIFT); Mid-scale Research Infrastructure-2 (Mid-scale RI-2); National Science Foundation Research Traineeship (NRT) Program; Smart and Connected Communities (S&CC); Understanding the Rules of Life: Microbiome Interactions and Mechanisms (URoL:MIM); Computer and Information Science and Engineering Minority-Serving Institutions Research Expansion Program (CISE-MSI Program); Reproducible Cells and Organoids via Directed-Differentiation Encoding (RECODE)**

**[NIH](#): Research Experience in Genomic Research for Data Scientists (R25); Application of Artificial Intelligence and Machine Learning for Advancing Environmental Health Sciences (R43 and R41); Initiative for Maximizing Student Development (IMSD) (T32); Graduate Research Training Initiative for Student Enhancement (G-RISE) (T32); Innovative Molecular and Cellular Analysis Technologies for Basic and Clinical Cancer Research (R21); Outstanding New Environmental Scientist Award (R01)**

**[Department of Defense/US Army/DARPA/ONR](#): National Defense Education Program (NDEP) for STEM; Research Interests of the United States Air Force Academy; Data and Analysis Center (DAC); Ultra-wide Bandgap RF Electronics Center Fiscal Year 2022; Synthetic Biology; Science & Technology for Advanced Manufacturing Projects (STAMP); Energetics Basic Research Center Fiscal Year 2022; Young Faculty Award (YFA); Defense Sciences Office Office-wide; C4ISR, Information Operations, Cyberspace Operations and Information Technology System Research**

**[Department of Transportation](#): Advanced Transportation and Congestion Management Technologies Deployment Initiative**

**[Department of Agriculture](#): Biotechnology Risk Assessment Research Grants Program; Scientific Cooperation Research Program (SCRIP); Agriculture and Food Research Initiative - Foundational and Applied Science**

**[Department of Labor](#): Workforce Pathways for Youth Grant Program**

**[Department of Commerce/EDA](#): Coastal and Ocean Modeling Testbed Project; FY2021 to FY2023 NOAA Broad Agency Announcement (BAA)**

**[EPA](#): Training and Technical Assistance to Improve Water Quality; Viral Pathogen and Surrogate Approaches for Assessing Treatment Performance in Water**

**[Department of Energy](#): Scientific Discovery Through Advanced Computing; Partnerships in Basic Energy Sciences; Hydrogen and Fuel Cell Technologies Office (HFTO) R&D FY 2021 Funding Opportunity Announcement; FY21 Bioenergy Technologies Office (BETO) Feedstock Technologies and Algae FOA; Systems Biology of Bioenergy-Relevant Microbes to Enable Production of Next-Generation Biofuels and Bioproducts; Environmental System Science**

[NASA: ROSES 2020: Heliophysics Flight Opportunities in Research and Technology; ROSES 2020: In-Space Validation of Earth Science Technologies](#)  
[National Endowment of Humanities: Sustaining Cultural Heritage Collections](#)  
[Private Foundations: Whitehall Foundation: Bioscience Research Projects; L'Oréal USA: L'Oréal USA For Women in Science](#)

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### [Recent Research Grant and Contract Awards](#)

Congratulations to faculty and staff on receiving research grant and contract awards!

**PI:** Daniel Janice (PI)

**Department:** Civil and Environmental Engineering

**Grant/Contract Project Title:** Seat Belt Usage Study 2021

**Funding Agency:** NJ DOT

**Duration:** 10/01/20-09/30/21

**PI:** Pier Champagne (PI)

**Department:** Center for Natural Resources

**Grant/Contract Project Title:** Characterization of Modeling of Water Mixing Energies and Particle Behavior during Wave Generation in CanmetEnergy-Devon Spill Tanks

**Funding Agency:** Department of Natural Resources (Canada)

**Duration:** 10/13/20-03/31/22

**PI:** Bharat Biswal (PI)

**Department:** Biomedical Engineering

**Grant/Contract Project Title:** Develop a Multi-Modal Cross-Scale fMRI Platform with Laminar-Specific Cellular Recordings Through Multi-Channel Tapered Photonic Crystal Fiber Array

**Funding Agency:** NIH

**Duration:** 08/15/19-07/31/21

**PI:** Louis Lanzerotti (PI) and Andrew Gerrard (Co-PI)

**Department:** Center for Solar Terrestrial Research

**Grant/Contract Project Title:** Van Allen Probes RBSPICE Phase E Operations – Extended Missions I, II, III, and Phase F (ARDES)

**Funding Agency:** NASA

**Duration:** 07/15/16-05/11/21

**PI:** Zhi Wei (PI)

**Department:** Computer Science

**Grant/Contract Project Title:** FY 2021 Transportation Data Analytical Tools

**Funding Agency:** NJ DOT

**Duration:** 11/01/20-06/30/21

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## [In the News...](#)

(National and Federal News Related to Research Funding and Grant Opportunities)

**5 Technology Trends to Watch in the Public Sector:** IT investments have proven to be an operational necessity for government agencies as they look to sustain essential public services and remote work. As agencies begin determining their 2021 technology priorities, here are five technology trends to watch in the public sector.

**Digital Transformation:** The success of digital transformation efforts in areas like teleworking, cybersecurity and digital services has left many government technology executives looking at what other areas of their operations could benefit from a technology overhaul.

**Enabling More Digital Citizen Experiences:** Over the course of the pandemic, public sector digital application and funding portals have swiftly moved from concept to delivery in a few weeks, and schools across the U.S. pivoted to digital learning. Moving even more digital services online in 2021 can help boost productivity, reduces government backlogs, and frees up talent and resources for other priorities.

**IT Modernization:** IT modernization efforts will focus on enabling high availability, high quality and accessible data. Bringing this data, computing capacity and AI tools together will expedite digital transform across the government and enable agencies to move from reactive to proactive service delivery.

**Automation:** Lost revenue from the pandemic means agencies will likely see a decrease in funding. But at the same time, demand for new and improved digital services has never been greater. This combination will make automating digital processes at government departments and agencies crucial in the year ahead, as they work to continue to meet their mission with limited resources.

**Accelerated Adoption of Digital Platforms:** By further embracing the transition to digital platforms in 2021 and beyond, the public sector can deliver effective, connected public services in a challenging time of heightened demand and shrinking budgets. With these platforms, agencies can better serve constituents by properly capturing and analyzing citizen data. This allows the public sector to unlock insights to identify trends, personalize citizen services and create efficiencies.

A full report is posted on [NextGov website](#).

**Pentagon Seeks Software to Analyze Data from Twitter:** The Defense Department is looking for open-source intelligence software with access to at least 50 million websites and the ability to ingest data from sources like social media to create graphics—including location maps—for analysis in real time, according to a new solicitation.

Open-source intelligence, or OSINT, refers to intelligence produced from publicly available information. This can include information like location data, which is often collected from smartphone apps and social media sites. The Defense and intelligence communities have used OSINT for decades, but the advent of the internet and social media has greatly increased the amount of public data available for collection and intelligence analysis.

The DOD solicitation, which was published Thursday on beta.SAM.gov by the Pentagon's Washington Headquarters Service, is focused largely on Twitter, the only social media platform the solicitation explicitly names. A full report is posted on [NextGov website](#).

**Top DoD Challenges on Technological Dominance: Hypersonics, Microelectronics, AI, 5G and Biotechnology:** The Defense Department Office of Inspector General announced [its annual report](#) summarizing the biggest management and performance challenges the department faces for the next fiscal year, identifying a total of 10 new and enduring issues, last week. Emerging technologies, managing and securing information systems, and data all featured prominently in the report.

The two new technology-oriented management challenges relate to the need for DOD “dominance” in emerging technologies—such as 5G and artificial intelligence—and transforming data into a strategic asset.

DOD needs to be able to push out innovative technologies at a faster pace than it currently does, according to the section on technological dominance.

“The potential of emerging technologies, and the challenges for the DOD, may be reflected in the new ways of warfighting,” the report reads. “Autonomous intelligent machines and applications can rapidly accelerate the speed of decision making and action, improve the DOD’s understanding of the battlespace, and enable new missions not yet conceived.”

The report highlighted issues related to deployment of several major DOD tech priorities to include hypersonics, microelectronics, AI, 5G and biotechnology. For microelectronics and 5G, OIG indicated it planned to conduct further evaluations into DOD activities related to their deployment.

Top DoD Management Challenges are:

1. Maintaining the Advantage While Balancing Great Power Competition and Countering Global Terrorism

2. Building and Sustaining the DoD’s Technological Dominance

3. Strengthening Resiliency to Non-Traditional Threats

4. Assuring Space Dominance, Nuclear Deterrence, and Ballistic Missile Defense

5. Enhancing Cyberspace Operations and Capabilities and Securing the DoD’s Information Systems, Network, and Data

6. Transforming Data Into a Strategic Asset

7. Ensuring Health and Safety of Military Personnel, Retirees, and Their Families

8. Strengthening and Securing the DoD Supply Chain and Defense Industrial Base

9. Improving Financial Management and Budgeting

10. Promoting Ethical Conduct and Decision Making

Full report on Fiscal Year 2021 Top DoD Management Challenges is posted on the [DoD Website](#).

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## [Webinar and Events](#)

**Event: DEB Virtual Office Hour: MCA**

**Sponsor: NSF**

**When: December 14, 2020, 1.00 PM – 2.00 PM**

**Website:** [https://www.nsf.gov/events/event\\_summ.jsp?cntn\\_id=301742&org=NSF](https://www.nsf.gov/events/event_summ.jsp?cntn_id=301742&org=NSF)

**Brief Description:** Join us Monday, December 14th from 1pm-2pm EST for DEB’s next Virtual Office Hour. Program Officers will provide an introduction to the new cross-directorate Mid-Career Advancement (MCA) program ([NSF 21-516](#)). The MCA offers an opportunity for scientists and engineers at the Associate Professor rank (or equivalent) to substantively enhance and advance their research program through synergistic and mutually beneficial partnerships, typically at an institution other than their home institution. Projects that envision new insights on existing problems or identify new but related problems previously inaccessible without new methodology or expertise from other fields are encouraged. Representatives from each of the participating directorates will be available for questions.

**To Join the Webinar:**

[REGISTER HERE](#)

**Event: DMS Virtual Office Hours****Sponsor: NSF****When: December 15, 2020, 2020 11.00 AM – 12.00 PM****Website:** [https://www.nsf.gov/events/event\\_summ.jsp?cntn\\_id=301731&org=NSF](https://www.nsf.gov/events/event_summ.jsp?cntn_id=301731&org=NSF)

**Brief Description:** The Division of Mathematical Sciences (DMS) is hosting virtual office hours to share information about NSF's current operations and provide guidance to the mathematical sciences community. This will also allow the community to ask questions, share concerns, or offer suggestions on how DMS can do more to address the impact of COVID-19 on the research community. All members of the mathematics research community interested in the work of DMS are welcome to attend.

Events are planned at roughly monthly intervals, and the topics will vary for each event. The event will be in the form of a webinar, starting with a brief presentation of a few selected current topics, with DMS program directors available to answer questions from the community.

**To Join the Webinar:** Participants should register (and may do so in advance) at the web page [https://nsf.zoomgov.com/webinar/register/WN\\_0gZjy028QVuuIhwnolmcA](https://nsf.zoomgov.com/webinar/register/WN_0gZjy028QVuuIhwnolmcA)

**Event: Hiding In Plain Sight: Recent DoD Changes in Cybersecurity that can cost you Contracts****Sponsor: NJIT Procurement Technical Assistance Center****When: December 16, 2020, 2020 11.00 AM – 12.00 PM****Website:** <https://njitptac.ecenterdirect.com/events/1869>

**Brief Description:** The United States Department of Defense is implementing the Cybersecurity Maturity Model Certification (CMMC) to normalize and standardize cybersecurity preparedness across the federal government's defense industrial base (DIB). Learn how non-compliance with the new regulations by you or your subcontractors can result in cancelled contracts, lost opportunities and revenue. This webinar will provide insight into the economic impacts of cybersecurity failures, how cybersecurity relates to Section 889 of the 2019 National Defense Authorization Act (NDAA), National Institute of Science and Technology (NIST) 800-171 compliance and the recent DFARS changes. You will gain a better understanding of your firm's needs and where to go for assistance to ensure compliance. This training session is being co-hosted by the Small Business Development Center at The College of New Jersey (SBDC at TCNJ)

**To Join the Webinar:** Register at the above URL.

**Event: Deep Dive Into Deep Tech Incubation Workshop****Sponsor: NSF****When: December 18, 2020 12.00 PM – 1.00 PM****Website:** [https://www.nsf.gov/events/event\\_summ.jsp?cntn\\_id=301160&org=NSF](https://www.nsf.gov/events/event_summ.jsp?cntn_id=301160&org=NSF)**Brief Description: Part IV: Friday, December 18, 12 pm Eastern (60 min)****Deep Tech Venture Capital and Corporate Partnerships**

Deep tech startups typically require significant capital and time to get their innovations into the market. More and more financial investors have entered this space as they view the outsize financial returns that are possibly worth the risk of supporting deep tech startups. In addition, more corporate and strategic partners are competing by investing in innovation, whether it is structured as direct investments in early-stage companies or other forms of support like joint ventures or non-recurring engineering. These venture capital and corporate partnerships provide highly valuable validation for deep tech startups, which enables them to raise follow-on capital and secure the partnerships that are critical to commercializing their technology. The fourth and final part of the Deep Dive Into Deep Tech Incubation webinar series will feature top investors and corporations who are actively partnering with deep tech startups as well as entrepreneurs who have benefited from this type of support.

**To Join the Webinar:** Register at <https://www.eventbrite.com/e/deep-dive-into-deep-tech-incubation-series-tickets-114163867200>

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## [Grant Opportunities](#)

### [National Science Foundation](#)

#### **Grant Program: Long Term Research in Environmental Biology (LTREB)**

**Agency: National Science Foundation NSF 21-544**

**RFP Website:** <https://www.nsf.gov/pubs/2021/nsf21544/nsf21544.htm>

**Brief Description:** The Long Term Research in Environmental Biology (LTREB) Program supports the generation of extended time series of data to address important questions in evolutionary biology, ecology, and ecosystem science. Research areas include, but are not limited to, the effects of natural selection or other evolutionary processes on populations, communities, or ecosystems; the effects of interspecific interactions that vary over time and space; population or community dynamics for organisms that have extended life spans and long turnover times; feedbacks between ecological and evolutionary processes; pools of materials such as nutrients in soils that turn over at intermediate to longer time scales; and external forcing functions such as climatic cycles that operate over long return intervals.

All proposals submitted through the LTREB solicitation are processed by 1 of the 3 clusters in the Division of Environmental Biology: Ecosystem Science, Population and Community Ecology, and Evolutionary Processes. Proposals must address topics supported by these clusters. Researchers who are uncertain about the suitability of their project for the LTREB Program are encouraged to contact the cognizant Program Officer.

Ecological research on marine populations, communities and ecosystems is not supported by LTREB and should be directed to the Biological Oceanography Program: ([https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=11696&org=OCE](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=11696&org=OCE)). However, research that examines the evolutionary dynamics of marine populations or communities will be accepted. Investigators who are uncertain about the suitability of their research for LTREB are strongly encouraged to contact the managing Program Officers listed in this solicitation.

**Awards:** Standard Grant; Anticipated Funding Amount: \$6,000,000

**Letters of Intent:** Not required

**Proposal Submission Deadline:** Proposals Accepted Anytime

**Contacts:** Betsy von Holle, telephone: (703) 292-4974, email: [mvonholl@nsf.gov](mailto:mvonholl@nsf.gov)

- Gary Lamberti, telephone: (703) 292-7551, email: [glambert@nsf.gov](mailto:glambert@nsf.gov)
  - Martha (Marty) A. Condon, telephone: (703) 292-7824, email: [mcondon@nsf.gov](mailto:mcondon@nsf.gov)
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#### **Grant Program: Integrative Research in Biology (IntBIO)**

**Agency: National Science Foundation NSF 21-543**

**RFP Website:** <https://www.nsf.gov/pubs/2021/nsf21543/nsf21543.htm>

**Brief Description:** This solicitation invites submission of collaborative proposals that tackle bold questions in biology and require an integrated approach to make substantive progress. Integrative biological research spans subdisciplines and incorporates cutting-edge methods, tools, and concepts from each to produce groundbreaking biological discovery. The research should be synergistic and produce novel, holistic understanding of how biological systems function and interact across different scales of

organization, e.g., from molecules to cells, tissues to organisms, species to ecosystems and the entire Earth. Such knowledge is critical to inform solutions to societal challenges, including natural resource management, resilience to environmental change, and global food security. Outcomes from integrative research will also inform and guide the development of new technologies that drive the nation's bioeconomy.

Integrative biological research depends on researchers who work in dynamic, diverse, and collaborative interdisciplinary teams. These teams should be fully engaged in the training and education of the next generation of scientists who will be future leaders in integrative research. A vibrant, inclusive, and integrative training environment will therefore produce a new generation of researchers who can navigate across subdisciplines and engage in integrative thinking.

**Awards:** Standard Grant or Continuing Grant; Anticipated Funding Amount: \$15,000,000

**Letters of Intent:** Not required

**Proposal Submission Deadline:** March 16, 2021

January 25, 2022

**Contacts:** Karen C. Cone, Program Director, BIO/MCB, telephone: (703) 292-4967, email: [kccone@nsf.gov](mailto:kccone@nsf.gov)

- Elizabeth R. Blood, Program Director, BIO/DEB, telephone: (703) 292-4349, email: [eblood@nsf.gov](mailto:eblood@nsf.gov)
  - Matthew Herron, Program Director, BIO/DEB, telephone: (703) 292-5361, email: [mherron@nsf.gov](mailto:mherron@nsf.gov)
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### **Grant Program: Conferences and Workshops in the Mathematical Sciences**

**Agency:** National Science Foundation NSF 21-541

**RFP Website:** <https://www.nsf.gov/pubs/2021/nsf21541/nsf21541.htm>

**Brief Description:** Conferences, workshops, and related events (including seasonal schools and international travel by groups) support research and training activities of the mathematical sciences community. Proposals for conferences, workshops, or conference-like activities may request funding of any amount and for durations of up to three years. Proposals under this solicitation must select "Conference" as the proposal type, and they must be submitted to the appropriate DMS programs in accordance with the lead-time requirements, submission windows, or deadlines specified on the program web page. See the [DMS Programs](#) page and click on the appropriate program for program-specific information.

**Awards:** Standard Grant or Continuing Grant; Anticipated Funding Amount: Up to \$4,000,000 per year, pending availability of funds.

**Letters of Intent:** Not required

**Proposal Submission Deadline:** March 05, 2021

**Contacts:** Tomek Bartoszynski, telephone: (703) 292-4885, email: [tbartosz@nsf.gov](mailto:tbartosz@nsf.gov)

- Marian Bocea, telephone: (703) 292-2595, email: [mbocea@nsf.gov](mailto:mbocea@nsf.gov)
  - Leland M. Jameson, telephone: (703) 292-4883, email: [lameson@nsf.gov](mailto:lameson@nsf.gov)
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### **Grant Program: Molecular Foundations for Biotechnology (MFB)**

**Agency:** National Science Foundation NSF 21-540

**RFP Website:** <https://www.nsf.gov/pubs/2021/nsf21540/nsf21540.htm>

**Brief Description:** This initiative calls for fundamentally new approaches in chemistry to drive new directions in biotechnology, an important Industry of the Future (IoF). Collaborative high risk/high reward projects are sought; the research must involve innovative chemistry.

A multi-year campaign is envisioned (contingent on availability of funding), targeting broad annual themes. This year's solicitation calls for synergistic scientific partnerships grounded in the principles of synthetic, physical organic and molecular recognition chemistry creating novel chemical biology tools to drive innovations in biotechnology. The focus is on the development and deployment of fundamentally new techniques to modify the structure, function and/or fate of proteins interacting with small molecules for important applications in biotechnology.

**Awards:** Standard Grant or Continuing Grant; Anticipated Funding Amount: \$6,000,000

**Letters of Intent:** Required by January 14, 2021

**Proposal Submission Deadline:** March 16, 2021

**Contacts:** Tingyu Li, telephone: (703) 292-4949, email: [tli@nsf.gov](mailto:tli@nsf.gov)

- Herman O. Sintim, telephone: (703) 292-7244, email: [hsintim@nsf.gov](mailto:hsintim@nsf.gov)
  - Kelsey D. Cook, telephone: (703) 292-7490, email: [kcook@nsf.gov](mailto:kcook@nsf.gov)
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### **Grant Program: Spectrum and Wireless Innovation enabled by Future Technologies (SWIFT)**

**Agency: National Science Foundation NSF 21-539**

**RFP Website:** <https://www.nsf.gov/pubs/2021/nsf21539/nsf21539.htm>

**Brief Description:** The National Science Foundation's Directorates for Engineering (ENG), Computer and Information Science and Engineering (CISE), Mathematical & Physical Sciences (MPS), and Geosciences (GEO) are coordinating efforts to identify new concepts and ideas on Spectrum and Wireless Innovation enabled by Future Technologies (SWIFT). A key aspect of the SWIFT program, now in its second year, is its focus on effective spectrum utilization and/or coexistence techniques, especially with passive uses, which have received less attention from researchers. Coexistence is when two or more applications use the same frequency band at the same time and/or at the same location, yet do not adversely affect one another. Coexistence is especially difficult when at least one of the spectrum users is passive, i.e., not transmitting any radio frequency (RF) energy. Examples of coexisting systems may include passive and active systems (e.g., radio astronomy and wireless broadband communication systems) or two active systems (e.g., weather radar and Wi-Fi). Breakthrough innovations are sought on both the wireless communication hardware and the algorithmic/protocol fronts through synergistic teamwork. The goal of these research projects may be the creation of new technology or significant enhancements to existing wireless infrastructure, with an aim to benefit society by improving spectrum utilization, beyond mere spectrum efficiency. The SWIFT program seeks to fund collaborative team research that transcends the traditional boundaries of individual disciplines.

**Awards:** Standard Grant; Anticipated Funding Amount: \$12,000,000

**Letters of Intent:** Not required

**Proposal Submission Deadline:** March 05, 2021

**Contacts:** Mohammod Ali, telephone: (703) 292-4632, email: [moali@nsf.gov](mailto:moali@nsf.gov)

- Alexander Sprintson, telephone: (703) 292-8950, email: [asprints@nsf.gov](mailto:asprints@nsf.gov)
  - Zhengdao Wang, telephone: (703) 292-7823, email: [zwang@nsf.gov](mailto:zwang@nsf.gov)
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### **Grant Program: Mid-scale Research Infrastructure-2 (Mid-scale RI-2)**

**Agency: National Science Foundation NSF 21-537**

**RFP Website:** <https://www.nsf.gov/pubs/2021/nsf21537/nsf21537.htm>

**Brief Description:** NSF-supported science and engineering research increasingly relies on cutting-edge infrastructure. With its Major Research Instrumentation (MRI) program and Major Multi-user Research Facility projects (Major Facilities), NSF supports infrastructure projects at the lower and higher ends of infrastructure scales across science and engineering research disciplines. The Mid-scale Research

Infrastructure Big Idea is intended to provide NSF with an agile, Foundation-wide process to fund experimental research capabilities in the mid-scale range between the MRI and Major Facilities thresholds.

NSF defines Research Infrastructure (RI) as any combination of facilities, equipment, instrumentation, or computational hardware or software, and the necessary human capital in support of the same. Major facilities and mid-scale projects are subsets of research infrastructure. The NSF Mid-scale Research Infrastructure-2 Program (Mid-scale RI-2) supports the implementation of unique and compelling RI projects. Mid-scale RI-2 projects may include any combination of equipment, instrumentation, cyberinfrastructure, broadly used large-scale data sets, and the commissioning and/or personnel needed to successfully complete the project. Mid-scale RI-2 projects should fill a research community-defined scientific need, or address an identified national research priority, that enables current and next-generation U.S. researchers and a diverse STEM workforce to remain competitive in a global research environment. The total cost for Mid-scale RI-2 projects ranges from \$20 million to below the threshold for a Major Facilities Project, currently \$100 million. Mid-scale RI-2 projects will directly enable advances in any of the research domains supported by NSF, including STEM education research. Projects may also include upgrades to existing research infrastructure.

The Mid-scale RI-2 Program emphasizes projects that have strong scientific merit, respond to an identified need of the research community, demonstrate technical and managerial readiness for implementation, include a well-developed plan for student training *in the design and implementation of mid-scale research infrastructure*, and involve a diverse workforce in mid-scale facility development, and/or associated data management. Training of students in design and implementation, not just in scientific exploitation of the infrastructure, is essential.

Please consult NSF 19-068 [Major Facilities Guide](#) (MFG) for definitions of terms used in this solicitation, such as the Project Execution Plan (PEP). Section 5 of the MFG provides guidance specific to Mid-Scale Research Infrastructure Projects, including guidance on the PEP.

Mid-scale RI-2 will consider only the implementation (typically construction or acquisition) stage of a project, including a limited degree of final development or necessary production design immediately preparatory to implementation. It is thus intended that Mid-scale RI-2 will support projects in high states of project and technical readiness for implementation, i.e., those that have already matured through previous developmental investments. Accordingly, Mid-scale RI-2 does not support pre-implementation (early-stage design or development) activities. Mid-scale RI-2 also does not support post-implementation research, operations or maintenance, the anticipated source(s) of which are expected to be discussed in the proposal.

**Awards:** Cooperative Agreement; Anticipated Funding Amount: \$150,000,000 to \$200,000,000  
Individual awards from \$20 million up to but not including \$100 million are anticipated for advanced design and implementation, pending availability of funds. Duration of the award may be up to five (5) years.

**Letters of Intent:** Submission of Letters of Intent is required. Please see the full text of this solicitation for further information. Due Date: February 03, 2021

**Proposal Submission Deadline:**

- **Preliminary Proposal Due Date(s) (required)** (due by 5 p.m. submitter's local time):  
March 05, 2021
- **Full Proposal Deadline(s)** (due by 5 p.m. submitter's local time):  
September 20, 2021

**Contacts:** Brian Midson, GEO, telephone: (703) 292-8145, email: [bmidson@nsf.gov](mailto:bmidson@nsf.gov)

- Allena K. Oppen, telephone: (703) 292-8958, email: [aopper@nsf.gov](mailto:aopper@nsf.gov)
- William L. Miller, CISE, telephone: (703) 292-7886, email: [wlmiller@nsf.gov](mailto:wlmiller@nsf.gov)

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**Grant Program: National Science Foundation Research Traineeship (NRT) Program****Agency: National Science Foundation NSF 21-536****RFP Website:** <https://www.nsf.gov/pubs/2021/nsf21536/nsf21536.htm>

**Brief Description:** The NSF Research Traineeship (NRT) program seeks proposals that explore ways for graduate students in research-based master's and doctoral degree programs to develop the skills, knowledge, and competencies needed to pursue a range of STEM careers. The program is dedicated to effective training of STEM graduate students in high priority interdisciplinary or convergent research areas, through a comprehensive traineeship model that is innovative, evidence-based, and aligned with changing workforce and research needs. Proposals are requested that address any interdisciplinary or convergent research theme of national priority, as noted above.

The NRT program addresses workforce development, emphasizing broad participation, and institutional capacity building needs in graduate education. The program encourages proposals that involve strategic collaborations with the private sector, non-governmental organizations (NGOs), government agencies, national laboratories, field stations, teaching and learning centers, informal science centers, and academic partners. NRT especially welcomes proposals that include partnership with NSF Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science (INCLUDES) and leverage INCLUDES project efforts to develop STEM talent from all sectors and groups in our society ([https://www.nsf.gov/news/special\\_reports/big\\_ideas/includes.jsp](https://www.nsf.gov/news/special_reports/big_ideas/includes.jsp)). Collaborations between NRT proposals and existing NSF INCLUDES projects should strengthen both NRT and INCLUDES projects.

**Awards:** Standard Grant; Anticipated Funding Amount: \$55,000,000

NRT Track 1 Awards (14-16 awards each year) are expected to be up to five (5) years in duration with a total budget up to \$3,000,000.

NRT Track 2 Awards (4-6 awards each year) are expected to be up to five (5) years in duration with a total budget up to \$2,000,000.

**Limit on Number of Proposals per Organization: 2**

An eligible organization may participate in only two (2) proposals per NRT competition as lead or collaborative non-lead. All Track 1 and/or Track 2 NRT proposals will be counted toward this total limit of two proposals per organization.

**Participation includes serving as a lead organization or non-lead organization on any proposal.**

Organizations participating only as evaluators on projects are excluded from this limitation. Proposals that exceed the organizational eligibility limit will be returned without review regardless of whether the organization on such a proposal serves as lead or non-lead collaborative organization. Only US IHEs are eligible to submit as a lead or non-lead organization. Potential PIs are advised to contact their institutional office of research regarding processes used to select proposals for submission.

**Internal Review and Selection on Limit on Institutional Proposals:** If planning to submit a proposal, please submit an internal Letter of Intent with the following sections to your respective deans by January 5, 2021 for February deadline. Deans should forward their recommendations to the Office Research (at [dhawan@njit.edu](mailto:dhawan@njit.edu)) by January 12 for institutional review. The institutional decision will be provided by January 18. Sections of the internal Letter of Intent (no more than 5 pages) should include:

1. Title, PI and Co-PIs with department affiliations; date of submission
2. Project Description (Summary)
3. Intellectual Merit
4. Broader Impact
5. Key Investigators
6. Budget Summary

## 7. institutional and Other Resources Needed

**Letters of Intent:** Not required

**Proposal Submission Deadline:** February 25, 2021; September 06, 2021

**Contacts:** Daniel Denecke, telephone: (703) 292-8072, email: [ddenecke@nsf.gov](mailto:ddenecke@nsf.gov)

- Vinod K. Lohani, telephone: (703) 292-2330, email: [vlohani@nsf.gov](mailto:vlohani@nsf.gov)
  - John Weishampel, telephone: (703) 292-2162, email: [jweisham@nsf.gov](mailto:jweisham@nsf.gov)
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### **Grant Program: Smart and Connected Communities (S&CC)**

**Agency:** National Science Foundation NSF 21-535

**RFP Website:** <https://www.nsf.gov/pubs/2021/nsf21535/nsf21535.htm>

**Brief Description:** The goal of the NSF Smart and Connected Communities (S&CC) program solicitation is to accelerate the creation of the scientific and engineering foundations that will enable smart and connected communities to bring about new levels of economic opportunity and growth, safety and security, health and wellness, accessibility and inclusivity, and overall quality of life.

For the purposes of this solicitation, communities are defined as having geographically-delineated boundaries—such as towns, cities, counties, neighborhoods, community districts, rural areas, and tribal regions—consisting of various populations, with the structure and ability to engage in meaningful ways with proposed research activities. A “smart and connected community” is, in turn, defined as a community that synergistically integrates intelligent technologies with the natural and built environments, including infrastructure, to improve the social, economic, and environmental well-being of those who live, work, learn, or travel within it.

The S&CC program encourages researchers to work with community stakeholders to identify and define challenges they are facing, enabling those challenges to motivate use-inspired research questions. For this solicitation, community stakeholders may include some or all of the following: residents, neighborhood or community groups, nonprofit or philanthropic organizations, businesses, as well as municipal organizations such as libraries, museums, educational institutions, public works departments, and health and social services agencies. **The S&CC program supports integrative research that addresses fundamental technological and social science dimensions of smart and connected communities and pilots solutions together with communities.** Importantly, the program is interested in projects that consider the sustainability of the research outcomes beyond the life of the project, including the scalability and transferability of the proposed solutions.

**Awards:** Standard Grant or Continuing Grant or Cooperative Agreement; Anticipated Funding Amount: \$23,500,000

This S&CC solicitation will support research projects in the following categories:

- **S&CC Integrative Research Grants (SCC-IRG) Tracks 1 and 2.** Awards in this category will support fundamental integrative research that addresses technological and social science dimensions of smart and connected communities and pilots solutions together with communities. Track 1 proposals may request budgets ranging between \$1,500,001 and \$2,500,000, with durations of up to four years. Track 2 proposals may request budgets up to \$1,500,000, with durations of up to three years. Note that NSF is working with the Japan Science and Technology Agency (JST) to support joint US-Japan IRG Track 2 proposals (SCC-IRG JST) that address topics related to recovery from COVID-19 and future resilience planning related to pandemics and disasters, including how the proposed research will enable community adjustment to life in the new normal of a post-COVID-19 society.
- **S&CC Planning Grants (SCC-PG).** Awards in this category are for capacity building to prepare project teams to propose future well-developed SCC-IRG proposals. Each of these awards will

provide support for a period of one year and may be requested at a level not to exceed \$150,000 for the total budget.

- **S&CC Virtual Organization (SCC-VO).** Proposals are being sought to establish a Virtual Organization that will: (i) facilitate and foster interaction and exchanges among S&CC PIs and their teams, including community partners; (ii) enable sharing of artifacts and knowledge generated by S&CC projects with the broader scientific and non-academic communities (e.g., local community stakeholders as described in this solicitation); and (iii) facilitate and foster collaboration and information exchange between S&CC researchers, community stakeholders, and others. No more than one S&CC-VO proposal will be funded. Funding of up to \$250,000 per year for up to three years may be requested.

**Letters of Intent:** Not required

**Proposal Submission Deadline:** February 24, 2021

**Contacts:** David Corman, Program Director, CISE/CNS, telephone: (703) 292-8754, email: [dcorman@nsf.gov](mailto:dcorman@nsf.gov)

- Linda Bushnell, Program Director, CISE/CNS, telephone: (703) 292-8950, email: [lbushnel@nsf.gov](mailto:lbushnel@nsf.gov)
- Sandip Roy, Program Director, CISE/CNS, telephone: (703) 292-8950, email: [saroy@nsf.gov](mailto:saroy@nsf.gov)

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## **Grant Program: Understanding the Rules of Life: Microbiome Interactions and Mechanisms (URoL:MIM)**

**Agency:** National Science Foundation NSF 21-534

**RFP Website:** <https://www.nsf.gov/pubs/2021/nsf21534/nsf21534.htm>

**Brief Description:** *Understanding the Rules of Life (URoL): Predicting Phenotype* is one of NSF's 10 Big Ideas ([https://www.nsf.gov/news/special\\_reports/big\\_ideas](https://www.nsf.gov/news/special_reports/big_ideas)) and is focused on predicting the set of observable characteristics (phenotypes) based on the genetic makeup of the individual and the nature of its environment. The Understanding the Rules of Life: Microbiome Interactions and Mechanisms (URoL:MIM) program is an integrative collaboration across several Directorates and Offices within the National Science Foundation. The objective of URoL:MIM is to understand interactions and mechanisms that govern the structure and function of microbiomes. By integrating the wide range of accumulated data and information on microbiome structure and function, new causal models of interactions and interdependencies across scales and systems can be generated. Elucidating these relationships will inform our understanding of the Rules of Life – the theoretical constructs and models that explain and predict the emergent characteristics of living systems, as seen in the robustness, resilience, and adaptability of the individual organisms, populations, and communities.

We define a microbiome as a collection of different microbes in a specific habitat. This may include non-host-associated microbiomes and host-associated microbiomes, such as those in humans and other organisms, where i) the microbiome impacts host physiology, behavior, development, and fitness; ii) the host influences the metabolic activity, dynamics and evolution of the microbiome, and iii) the environment (biological, chemical, physical, and social) influences and is influenced by both the host and the microbiome.

The URoL:MIM program invites integrated, interdisciplinary proposals that create new knowledge in multiple disciplines to develop causal frameworks with well-designed scientific and/or computational approaches to test hypotheses about the relationships within the microbiome, and among the microbiome, the host, and the environment. Projects may develop new computational, mathematical, or experimental tools, and models, to: i) explain function and interactions in natural, experimental, and model microbiomes; ii) elucidate the chemical and molecular mechanisms that underlie communication between the host and the microbiome and among the members of the microbiome; and/or iii) comparatively

analyze characteristics of microbiomes to discover emergent properties that provide insight into the behavior of living systems.

**Awards:** Standard Grant or Continuing Grant; Anticipated Funding Amount: \$12,000,000

**Letters of Intent:** Not required

**Proposal Submission Deadline:** February 23, 2021

**Contacts:** Catalina Achim, MPS, telephone: (703) 292-2048, email: [microbiome@nsf.gov](mailto:microbiome@nsf.gov)

- Robert Mayes, EHR, telephone: (703) 292-7267, email: [microbiome@nsf.gov](mailto:microbiome@nsf.gov)
  - Mamta Rawat, BIO, telephone: (703) 292-7265, email: [microbiome@nsf.gov](mailto:microbiome@nsf.gov)
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**Grant Program: Computer and Information Science and Engineering Minority-Serving Institutions Research Expansion Program (CISE-MSI Program)**

**Agency:** National Science Foundation NSF 21-533

**RFP Website:** <https://www.nsf.gov/pubs/2021/nsf21533/nsf21533.htm>

**Brief Description:** With this solicitation, the National Science Foundation's (NSF) Directorate for Computer and Information Science and Engineering (CISE) is launching a new, focused program to support research expansion for Minority-Serving Institutions (MSIs). The goal of the CISE-MSI program is to broaden participation by increasing the number of CISE-funded research projects from MSIs. MSIs are central to inclusive excellence: they foster innovation, cultivate current and future undergraduate and graduate computer and information science and engineering talent, and bolster long-term U.S. competitiveness.

**Awards:** Standard Grant or Continuing Grant; Anticipated Funding Amount: \$7,000,000

**Letters of Intent:** Not required

**Proposal Submission Deadline:** April 15, 2021

**Contacts:** Fay Cobb Payton, Program Director, CISE/CNS, telephone: (703) 292-7939, email: [fpayton@nsf.gov](mailto:fpayton@nsf.gov)

- Almadena Y. Chtchelkanova, Program Director, CISE/CCF, telephone: (703) 292-8910, email: [achtchel@nsf.gov](mailto:achtchel@nsf.gov)
  - Daniel R. Cosley, Program Director, CISE/IIS, telephone: (703) 292-8832, email: [dcosley@nsf.gov](mailto:dcosley@nsf.gov)
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**Grant Program: Reproducible Cells and Organoids via Directed-Differentiation Encoding (RECODE)**

**Agency:** National Science Foundation NSF 21-532

**RFP Website:** <https://www.nsf.gov/pubs/2021/nsf21532/nsf21532.htm>

**Brief Description:** The National Science Foundation (NSF) Divisions of Chemical, Bioengineering, Environmental and Transport Systems (CBET), Integrative and Organismal Systems (IOS), Molecular and Cellular Biosciences (MCB), and Civil, Mechanical, and Manufacturing Innovation (CMMI) seek proposals that elucidate mechanisms of, and develop strategies to, direct the differentiation of undifferentiated cells into mature, functional cells or organoids. Projects responsive to this solicitation must aim to establish a robustly validated and reproducible set of differentiation design rules, mechanistic models, real-time sensing, control, and quality assurance methods, and integrate them into a workable differentiation strategy. They must deepen our fundamental understanding of how cells develop and differentiate, providing insights into mechanisms, molecular machinery, dynamics, and cell-cell and cell-extracellular matrix (ECM) interactions, and use this understanding to manipulate cells purposefully. Investigators can choose any undifferentiated cell type from any animal species, including those that may

be considered non-model organisms, as a starting point and choose any appropriate functional product (cell, organoid, etc.) with real-world relevance.

The process of differentiation involves a multiplex combination of signaling molecules, receptors, promoters, markers, and chemical and mechanical regulators that dynamically interact to direct cell development and behavior. While individual inducers of native differentiation have been identified and employed to create specialized cell types, we generally lack fundamental understanding of the roles of biochemical and environmental regulators necessary for synthetic induction of differentiation along a predetermined path and the ability to actively monitor and manipulate that path dynamically. Such control of differentiation will be valuable to answer mechanistic questions about basic biological processes that govern physiological function of specific cells, tissues, and organs, as well as mechanisms for processes involved in symbiosis and disease, and immunological responses to infection. The control of differentiation will also enable the realization of enhanced biomanufacturing, leading to novel products, biomaterials, and significant improvements in individualized medicine, environmental control and monitoring, adaptive sensing, as well as the scalable and reproducible application of 3D organoids in drug testing.

**Awards:** Standard Grant or Continuing Grant; Anticipated Funding Amount: \$10,600,000

**Letters of Intent:** Not required; Please see below.

**Proposal Submission Deadline:**

- **Preliminary Proposal Due Date(s) (*required*)** (due by 5 p.m. submitter's local time):  
February 18, 2021
- **Full Proposal Deadline(s)** (due by 5 p.m. submitter's local time):  
May 18, 2021

**Contacts:** Steven W. Peretti, ENG/CBET, telephone: (703) 292-7029, email: [speretti@nsf.gov](mailto:speretti@nsf.gov)

- Aleksandr L. Simonian, ENG/CBET, telephone: (703) 292-2191, email: [asimonia@nsf.gov](mailto:asimonia@nsf.gov)
- Stephanie George, ENG/CBET, telephone: (703) 292-7825, email: [stgeorge@nsf.gov](mailto:stgeorge@nsf.gov)

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## [National Institutes of Health](#)

**Grant Program: Research Experience in Genomic Research for Data Scientists (R25)**

**Agency: National Institutes of Health PAR-21-075**

**RFP Website:** <https://grants.nih.gov/grants/guide/pa-files/PAR-21-075.html>

**Brief Description:** The over-arching goal of this NHGRI R25 program is to support educational activities that encourage individuals from diverse backgrounds, including those from groups underrepresented in the biomedical and behavioral sciences, to pursue further studies or careers in research. To accomplish the stated over-arching goal, this FOA will support creative educational activities with a primary focus on:

- **Research Experiences:** For students currently enrolled in master's degree programs in data science (including programs in statistics/biostatistics, mathematics, computer science or equivalent fields) to provide hands-on exposure to genomics data sets as a substrate for their analytical skills. Through this announcement, NHGRI hopes to attract such students to the genomics workforce. NHGRI also seeks to both encourage data scientists who plan to opt for a terminal master's degree to join genomics research, as well as reinforce the intent of current master's degree students who are considering entering a doctoral program with an eventual dissertation focused on genomic data science.

This FOA is explicitly intended to support the entry of master's degree students in data science into the genomics workforce. Undergraduate or doctoral students will not be supported under this FOA. The following groups explicitly cannot be supported under this announcement:

- Data scientists who have completed an undergraduate degree but are not enrolled in a data science master's degree.
- Data scientists currently with extensive genomics research experience.
- Master's degree students currently enrolled in genomics programs who are interested in gaining exposure to data science.

For this FOA, "genomics research" is defined as biological investigation at the scale of the complete genome without having a focus on a single gene, a group of genes, a particular genomic locus, or a specific disease or organ system. "Genomics programs" are defined as research or educational programs that have a complete or substantial focus on genomics research, including both experimental and computational approaches towards genomics. Programs that focus on biological research or education with genetics topics included without a specific focus on genome-scale topics will ordinarily be considered outside the scope of "genomics programs".

**Awards:** Application budgets are limited to \$250,000 direct cost per year.

**Letter of Intent:** 30 days prior to application due date

**Proposal Submission Deadline:** May 25, 2021; May 25, 2022; May 25, 2023.

All applications are due by 5:00 PM local time of applicant organization. All [types of non-AIDS applications](#) allowed for this funding opportunity announcement are due on the listed date(s).

Applicants are encouraged to apply early to allow adequate time to make any corrections to errors found in the application during the submission process by the due date.

**Contact:** Shurjo K. Sen, Ph.D. National Human Genome Research Institute (NHGRI)  
Phone: 301-827-7028 Email: [sensh@mail.nih.gov](mailto:sensh@mail.nih.gov)

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**Grant Program: Application of Artificial Intelligence and Machine Learning for Advancing Environmental Health Sciences (R43 and R41; Clinical Trial Not Allowed)**

**Agency: National Institutes of Health RFA-ES-21-002 and RFA-ES-21-003**

**[R43](#) Small Business Innovation Research (SBIR) Grant - Phase I only**

**[R41](#) Small Business Technology Transfer (STTR) Grant - Phase I only**

**RFP Website:** <https://grants.nih.gov/grants/guide/pa-files/PAR-21-025.html>

**Brief Description:** Through this Funding Opportunity Announcement (FOA), NIEHS is interested in supporting small business concerns (SBCs) to develop promising methodologies applying AI and ML approaches to advance environmental health research and decisions. The overall goal is to advance and adapt current AI and ML approaches by leveraging existing toxicity and environmental health data from published reports and public health records, including enhancing the accuracy of toxicity prediction or safety assessment, prioritizing chemicals for more comprehensive testing, identifying data or knowledge gaps in the field, and promoting novel approaches for exposure science such as estimating human exposures and health outcomes. The proposed approaches can focus on extracting and integrating information from environmental datasets or resources, developing algorithms and predictive models and applying those for predicting toxicity, and characterizing the biological responses or health consequences of chemical exposures.

**Awards:** NIEHS intends to commit \$2M in FY2021 to fund 6-8 awards.

**Letter of Intent:** February 28, 2021

**Proposal Submission Deadline:** March 29, 2021

All applications are due by 5:00 PM local time of applicant organization. All types of non-AIDS applications allowed for this funding opportunity announcement are due on the listed date(s).

Applicants are encouraged to apply early to allow adequate time to make any corrections to errors found in the application during the submission process by the due date.

**Contact:** Lingamanaidu Ravichandran, PhD; National Institute of Environmental Health Sciences (NIEHS) Telephone: (984) 287-3309 Email: [lingamanaidu.ravichandran@nih.gov](mailto:lingamanaidu.ravichandran@nih.gov)

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**Grant Program: Initiative for Maximizing Student Development (IMSD) (T32 - Clinical Trial Not Allowed)**

**Agency: National Institutes of Health PAR-21-025**

**RFP Website:** <https://grants.nih.gov/grants/guide/pa-files/PAR-21-025.html>

**Brief Description:** The Overarching Objective of this Graduate Research Training Initiative for Student Enhancement program is to develop a diverse pool of well-trained Ph.D. biomedical scientists, who have the following technical, operational, and professional skills:

- A broad understanding across biomedical disciplines and the skills to independently acquire the knowledge needed to advance their chosen fields;
- Expertise in a biomedical scientific discipline and the skills to think critically and independently, and to identify important biomedical research questions and approaches that push forward the boundaries of their areas of study;
- A strong foundation in scientific reasoning, rigorous research design, experimental methods, quantitative and computational approaches, and data analysis and interpretation;
- The skills to conduct research in the safest manner possible, and a commitment to approaching and conducting biomedical research responsibly, ethically, and with integrity;
- Experience initiating, conducting, interpreting, and presenting rigorous and reproducible biomedical research with increasing self-direction;
- The ability to work effectively in teams with colleagues from a variety of cultural and scientific backgrounds, and to promote inclusive and supportive scientific research environments;
- The skills to teach and communicate scientific research methodologies and findings to a wide variety of audiences (e.g., discipline-specific, across disciplines, and the public); and
- The knowledge, professional skills and experiences required to identify and transition into careers in the biomedical research workforce (i.e., the breadth of careers that sustain biomedical research in areas that are relevant to the NIH mission).

Diversity at all levels—from the kinds of science to the regions in which it is conducted to the backgrounds of the people conducting it—contributes to excellence in research training environments and strengthens the research enterprise. This FOA is intended to support outstanding research training programs that will enhance diversity at all levels. As part of a larger initiative to enhance diversity, the IMSD program will support trainees earning a Ph.D. at research-intensive institutions.

**Awards:** Application budgets are not limited but need to reflect the actual needs of the proposed project.

**Letter of Intent:** Not Applicable

**Proposal Submission Deadline:** February 26, 2021; January 28, 2022; January 30, 2023, by 5:00 PM local time of applicant organization. All [types of applications](#) allowed for this funding opportunity announcement are due on these dates.

Applicants are encouraged to apply early to allow adequate time to make any corrections to errors found in the application during the submission process by the due date.

**Contact:** Sydella Blatch, Ph.D., National Institute of General Medical Sciences, Email: [sydella.blatch@nih.gov](mailto:sydella.blatch@nih.gov); Patrick H. Brown, Ph.D., National Institute of General Medical Sciences, Email: [patrick.brown@nih.gov](mailto:patrick.brown@nih.gov)

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**Grant Program: Graduate Research Training Initiative for Student Enhancement (G-RISE) (T32 - Clinical Trial Not Allowed)**

**Agency: National Institutes of Health PAR-21-026**

**RFP Website:** <https://grants.nih.gov/grants/guide/pa-files/PAR-21-026.html>

**Brief Description:** The National Institutes of Health (NIH) recognizes the need to diversify the scientific workforce by enhancing the participation of individuals from groups identified as [underrepresented](#) in the biomedical, clinical, behavioral and social sciences (collectively termed "biomedical") research workforce. Research shows that diverse teams working together and capitalizing on innovative ideas and distinct perspectives outperform homogenous teams. Scientists and trainees from diverse backgrounds and life experiences bring different perspectives, creativity, and individual interests to address complex scientific problems. There are many benefits that flow from a diverse NIH-supported scientific workforce, including fostering scientific innovation, enhancing global competitiveness, contributing to robust learning environments, improving the quality of research, enhancing public trust, and increasing the likelihood that health disparities and the needs of underserved populations are addressed in biomedical research.

The Overarching Objective of this Graduate Research Training Initiative for Student Enhancement program is to develop a diverse pool of well-trained Ph.D. biomedical scientists, who have the following technical, operational, and professional skills:

- A broad understanding across biomedical disciplines and the skills to independently acquire the knowledge needed to advance their chosen fields;
- Expertise in a biomedical scientific discipline and the skills to think critically and independently, and to identify important biomedical research questions and approaches that push forward the boundaries of their areas of study;
- A strong foundation in scientific reasoning, rigorous research design, experimental methods, quantitative and computational approaches, and data analysis and interpretation;
- The skills to conduct research in the safest manner possible, and a commitment to approaching and conducting biomedical research responsibly, ethically, and with integrity;
- Experience initiating, conducting, interpreting, and presenting rigorous and reproducible biomedical research with increasing self-direction;
- The ability to work effectively in teams with colleagues from a variety of cultural and scientific backgrounds, and to promote inclusive and supportive scientific research environments;
- The skills to teach and communicate scientific research methodologies and findings to a wide variety of audiences (e.g., discipline-specific, across disciplines, and the public); and
- The knowledge, professional skills and experiences required to identify and transition into careers in the biomedical research workforce (i.e., the breadth of careers that sustain biomedical research in areas that are relevant to the NIH mission).

**Awards:** Application budgets are not limited but need to reflect the actual needs of the proposed project.

**Letter of Intent:** Not Applicable

**Proposal Submission Deadline:** February 26, 2021; January 28, 2022; January 30, 2023, by 5:00 PM local time of applicant organization. All [types of applications](#) allowed for this funding opportunity announcement are due on these dates.

Applicants are encouraged to apply early to allow adequate time to make any corrections to errors found in the application during the submission process by the due date.

**Contact:** Sydella Blatch, Ph.D., National Institute of General Medical Sciences, Email: [sydella.blatch@nih.gov](mailto:sydella.blatch@nih.gov); Patrick H. Brown, Ph.D., National Institute of General Medical Sciences, Email: [patrick.brown@nih.gov](mailto:patrick.brown@nih.gov)

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**Grant Program: Innovative Molecular and Cellular Analysis Technologies for Basic and Clinical Cancer Research (R21 Clinical Trial Not Allowed)**

**Agency: National Institutes of Health RFA-CA-21-003**

**RFP Website: <https://grants.nih.gov/grants/guide/rfa-files/RFA-CA-21-003.html>**

**Companion Funding Opportunity:**

**[RFA-CA-21-004](#) - Advanced Development and Validation of Emerging Molecular and Cellular Analysis Technologies for Basic and Clinical Cancer Research (R33 Clinical Trial Not Allowed)**

**[RFA-CA-21-005](#) - Innovative Biospecimen Science Technologies for Basic and Clinical Cancer Research (R21 Clinical Trial Not Allowed)**

**[RFA-CA-21-006](#) - Advanced Development and Validation of Emerging Biospecimen Science Technologies for Basic and Clinical Cancer Research (R33 Clinical Trial Not Allowed)**

**Brief Description:** This Funding Opportunity Announcement (FOA) solicits grant applications proposing exploratory research projects focused on the inception and early-stage development of highly innovative, molecular and/or cellular analysis technologies with transformative potential. *The emphasis of this FOA is on supporting the development of novel capabilities involving a high degree of technical innovation for targeting, probing, or assessing molecular and cellular features of cancer biology.* Well-suited applications must offer the potential to accelerate and/or enhance research in the areas of cancer biology, early detection, and screening, clinical diagnosis, treatment, control, epidemiology, and/or cancer health disparities. Technologies proposed for development may be intended to have widespread applicability but must focus on improving molecular and/or cellular characterizations of cancer.

Applications involving an existing technology not yet demonstrated for the proposed cancer-relevant application(s) are also within the scope of this FOA but must involve additional technical modifications and development to allow for the proposed cancer-relevant context of use or some significant question of feasibility exists for achieving the proposed aims. If the research focus for the application involves an existing technology, a clear description of the feasibility risk justifying the use of the R21 mechanism must be included in the application. Applicants are encouraged to reach out to the Scientific/Research Contact below with any questions.

The current issuance of the IMAT Program consists of four separate FOAs that cover the following two areas:

- **Molecular and Cellular Analysis Technology Development for Cancer Research** is intended to support the development of technologies that are novel and potentially transformative to the molecular and cellular analysis of cancer, which may, in turn, accelerate basic or clinical cancer research. Applications must offer novel measurement, probing, or targeting of cancer-relevant targets at the molecular or cellular level.
  - RFA-CA-21-003 (this FOA, R21): Supports an early-stage feasibility study (inception through preliminary development) to demonstrate the core functional capabilities of the proposed technology.
  - [RFA-CA-21-004](#) (R33): Assumes completion of the initial phase of development and supports the advanced development and robust validation of the technology.
- **Cancer-relevant Biospecimen Science Technologies** is centered on the development and validation of novel technologies to improve or assess the quality of cancer-relevant biospecimens for research or clinical care. Applications must offer novel approaches for procurement, preservation, and/or isolation of proteins, DNA, RNA, and other small molecules from biospecimens or otherwise assess their biological integrity. The emphasis is on reducing the impact of pre-analytical variations in the collection, processing, handling, and preservation of

cancer-relevant biospecimens or their derivatives to improve their quality and utility for cancer research or clinical care.

- [RFA-CA-21-005](#) (R21): Supports an early-stage feasibility study (inception through preliminary development) to demonstrate the core functional capabilities of the proposed technology.
- [RFA-CA-21-006](#) (R33): Assumes completion of the initial phase of development and supports the advanced development and robust validation of the technology.

**Awards:** Direct costs are limited to \$400,000 over a 3-year period, with no more than \$200,000 in direct costs allowed in any single year.

**Letter of Intent:** 30 days prior to the application due date

**Proposal Submission Deadline:** February 22, 2021; May 27, 2021; September 29, 2021

No late applications will be accepted for this Funding Opportunity Announcement.

All applications are due by 5:00 PM local time of applicant organization. All [types of non-AIDS applications](#) allowed for this funding opportunity announcement are due on the listed date(s).

Applicants are encouraged to apply early to allow adequate time to make any corrections to errors found in the application during the submission process by the due date.

**Contact:** Tony Dickherber, Ph.D., National Cancer Institute (NCI), Telephone: 301-547-9980  
Email: [dickherberaj@mail.nih.gov](mailto:dickherberaj@mail.nih.gov)

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## **Grant Program: Outstanding New Environmental Scientist (ONES) Award (R01 Clinical Trial Optional)**

**Agency:** National Institutes of Health RFA-ES-21-001

**RFP Website:** <https://grants.nih.gov/grants/guide/rfa-files/RFA-ES-21-001.html>

**Brief Description:** An essential element of the mission of the National Institute of Environmental Health Sciences (NIEHS) is the support and career promotion of the next generation of exceptionally talented and creative new scientists who will further the understanding of the impact of environmental exposures on human health. The NIEHS supports training and fellowship programs for pre and postdoctoral training, and mentored career development awards for faculty in the early stages of their career development. In 2006, NIEHS initiated a program of research grants for Early Stage Investigators, The Outstanding New Environmental Scientist (ONES) Award, that is designed to identify the best new biomedical investigators across the spectrum of science supported by the NIEHS (i.e., including basic mechanistic, clinical and population based researchers) and facilitate their establishing a vibrant, independent research program in the environmental health sciences.

The ONES program is designed to identify outstanding scientists at the formative stages of their career and assist them in launching an innovative research program with a defined impact in the environmental health sciences. These R01 research grants are targeted for researchers who are defined by the NIH as [Early Stage Investigators](#).

Applications submitted in response to this FOA must have a research focus on exposure-health related responses from environmental agents within the mission interest of the NIEHS. The Strategic Plan emphasizes that environmental exposures within the primary mission interest of NIEHS may both manifest effects through direct toxicities and as an element in combined exposures in the totality of all types of human exposure experiences throughout the lifespan, the exposome.

**Awards:** The budget for direct costs is composed of two elements - research direct costs and career enhancement costs. For most applications, the budget for research direct costs should be limited to \$250,000 per year. With strong justification, research projects which have inherently higher costs may request direct costs of up to \$400,000 per year. Career enhancement direct costs are limited to \$250,000

direct costs, which can be distributed over the 5-year award period. Note: the total direct cost budget (research plus career enhancement) may not exceed \$475,000 in any year of the award.

**Letter of Intent:** 30 days prior to the application due date.

**Proposal Submission Deadline:** February 26, 2021; February 24, 2022; February 24, 2023

All applications are due by 5:00 PM local time of applicant organization. All [types of non-AIDS applications](#) allowed for this funding opportunity announcement are due on the listed date(s).

Applicants are encouraged to apply early to allow adequate time to make any corrections to errors found in the application during the submission process by the due date.

**Contact:** Carol A. Shreffler, Ph.D., National Institute of Environmental Health Sciences (NIEHS), Telephone: 984-287-3322, Email: [shreffl1@niehs.nih.gov](mailto:shreffl1@niehs.nih.gov)

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## [Department of Defense/US Army/DARPA/ONR/AFOSR](#)

**Grant Program: Funding Opportunity Announcement (FOA) for the National Defense Education Program (NDEP) for Science, Technology, Engineering, and Mathematics (STEM), and Biotechnology Education, Outreach, and Workforce Initiative Programs and Enhanced Civics Education**

**Agency:** Department of Defense HQ0034-21-S-F001

**Website:** <https://www.grants.gov/web/grants/view-opportunity.html?oppId=330319>

**Brief Description:** The Department of Defense (DoD) National Defense Education Program (NDEP) seeks innovative applications on mechanisms to implement Science, Technology, Engineering, and Mathematics (STEM) education, outreach, and/or workforce initiative programs, here onto referred as STEM activities. NDEP also seeks innovative applications on mechanisms to specifically implement Biotechnology outreach and workforce development, which here onto will be referred as Biotech activities. Additional NDEP efforts also includes a pilot program in Enhanced Civics education.

The Department intends to award multiple grants in STEM activities, Biotech activities, and Enhanced Civics subject to the availability of funds. Applications for larger amounts may be considered on a case-by-case basis.

1. For STEM activities, there will be two (2) award levels:
  - (i) STEM activities with maximum award of \$3,000,000 over 3 years;
  - (ii) Scalable STEM activities with maximum award of \$6,000,000 over four (4) years.
2. For Biotech activities, awards will have a maximum award of \$3,000,000 over three (3) years.
3. For Enhanced Civics education, there will be one award, with a maximum of \$2,000,000 for a period of two (2) years.

NOTE: Respondents are not required to address all three focus areas, but should direct their responses to one of the areas, 1 (STEM), 2 (Biotech), or 3 (Enhanced Civics Education).

**Awards:** Award Ceiling: \$6,000,000; ward Floor: \$2,000,000

**Letter of Intent:** Please see below.

**Proposal Deadline:** This FOA has a two-step application process, starting with a **MANDATORY** white paper submission. Selected applicants will be **invited by the Government via email** to submit a full technical application on Grants.gov for evaluation and possibly award consideration. White papers that fail to address the areas listed in the Funding Opportunity Description will not be evaluated and will not receive an invitation to submit a full technical application.

**Contact Information:** Chrissandra Smith Grantor [work email](#)

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**Grant Program: Research Interests of the United States Air Force Academy**

**Agency: Department of Defense Air Force Academy USAFA-BAA-2021**

**Website:** <https://www.grants.gov/web/grants/view-opportunity.html?oppId=330175>

**Brief Description:** The USAFA invests in an active research program for three main reasons. First and foremost, research significantly enhances the cadet learning experience. Our research is done by, for and with cadets who work alongside fellow cadets and faculty mentors. Research provides cadets with rich independent learning opportunities as they tackle ill-defined problems and are challenged to apply their knowledge and abilities. Second, our research program provides opportunities essential for faculty development. Research broadens and deepens the experience base of the faculty. This infuses current, relevant, state-of-the-art and cutting-edge applications and examples into the curriculum. This also helps our faculty remain current in their respective fields. Third, at USAFA we strive to conduct research to enhance the ability of the Air Force to perform its mission. There are ongoing research projects spanning topics as diverse as super hypersonics, cyber security, spatial disorientation, athletic performance and homeland defense. This BAA offers a vehicle for research to be performed to satisfy these three objectives, while also meeting research needs of industry counterparts/serve a public purpose. USAFA's partnerships with non-Government firms enables development in the public arena, stimulating the studies in the greater technical community. All awards issued against this BAA must serve to benefit the objectives identified above.

**Awards:** It is anticipated awards will be made in the form of any appropriate contract type under the FAR or NonFAR instruments (i.e., Other Transaction (OT) for research efforts, or grants and cooperative agreements).

**Letter of Intent:** Please see below.

**Proposal Deadline:** USAFA is seeking unclassified research white papers and proposals that do not contain proprietary information. Requests for white papers/proposals are also transmitted via calls which may be published separately from the BAA at various times during the open period of the BAA.

This announcement remains open until superseded. White papers are reviewed and evaluated as they are received and may be submitted at any time. The white paper/proposal submission process is discussed in sections IV and V of this BAA. Proposals will be due according to specific instructions contained in a separate RFP notice resulting from favorable white paper evaluations or calls issued against this BAA.

**Contact Information:** Erica Wilson Contracting-Grants Officer Phone 719-333-8048  
[10 CONS/PKC Assistance Org Email Box](#)

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**Grant Program: Ultra-wide Bandgap RF Electronics Center Fiscal Year 2022**

**Agency: Department of Army Material Command W911NF-21-S-0003**

**Website:** <https://www.grants.gov/web/grants/view-opportunity.html?oppId=330032>

**Brief Description:** The technical portion of this BAA consists of three main topics: Ultra-wide Bandgap (UWBG) Semiconductor Physics and Devices, UWBG Materials, and Physics-Driven Machine Learning for UWBG Materials and RF Device Development. A main topic may be further divided into sub-topics. Teams are encouraged to self-organize at any scale to create a proposal to address one, several, or all of these areas as they see fit. The TPOCs listed in this BAA will be able to assist potential proposers in this during the white paper stage, and this aspect will in particular be a focus at the Proposers' Day described in I.A.6.a. The full Center will be selected from a set of these Teams (as separate Team awards) that will together cover the full scope of the BAA. Team awards can themselves include sub-awards to one or more institutions or organizations, because the necessary expertise in addressing the numerous facets of the topics may reside within different organizations. Teams will be appropriately scoped for the level of effort

taken on. All Team awards will collaborate and cooperate among themselves and with the Army Science and Technology (S&T) enterprise in accomplishing the research objectives.

**Awards:** Multiple awards are anticipated. Award Ceiling: \$4,500,000

**Letter of Intent:** Please see below.

**Proposal Deadline:** White Papers Due: 15 February 2021

Final Proposals by Invite Only Due: 1 June 2021

**Proposers' Day:** 15 December 2020 1100-1500 Eastern Time. Virtual venue. Registration required and limited. Information available at link below: <https://www.eventbrite.com/e/ultra-wide-bandgap-rf-electronics-center-proposers-day-2020-tickets-127230577081>

**Contact Information:** Program Manager: Joe X Qiu, [joe.x.qiu.civ@mail.mil](mailto:joe.x.qiu.civ@mail.mil) , (919) 549-4297

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### **Grant Program: Synthetic Biology**

**Agency:** Department of Army Center for Synthetic Biology W911NF-21-S-0002

**Website:** <https://www.grants.gov/web/grants/view-opportunity.html?oppId=329839>

**Brief Description:** The Army Center for Synthetic Biology aims to promote research in specific areas of synthetic biology and to promote a candid and constructive relationship between the Army Science and Technology (S&T) enterprise and the synthetic biology research community.

Strong collaborations between DA and academia are necessary to overcome challenges associated with achieving the desired goals. Tackling these will require a large comprehensive cooperative effort (while also allowing for exploratory efforts for high-risk concepts) with a teamed approach involving multiple researchers collaborating across separate disciplines. Listed below are knowledge gaps and basic research opportunities which are to be addressed by the Army Center for Synthetic Biology. These are discussed in further detail as the Technical Thrust Areas in Section II.A.2.

- a. Predictive Design of Engineered Biological Materials
- b. Predictive Design of Engineered Cellular Systems in Defined Environments

**Awards:** Multiple awards are anticipated. Award Ceiling: \$2,000,000

**Letter of Intent:** Please see below.

**Proposal Deadline:**

Whitepapers Due:

Funding Area One (Team): 01 February 2021

Funding Area Two (Seedling): 01 February 2021, 01 February 2022, 01 February 2023, 01 February 2024

Final Proposals by Invite Only Due:

Funding Area One (Team): 24 May 2021

Funding Area Two (Seedling): 24 May 2021, 24 May 2022, 24 May 2023, 24 May 2024

**Contact Information:** William A Creech Contracting/Grants Officer Phone 9195494387

[Point of Contact](#)

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### **Grant Program: Science & Technology for Advanced Manufacturing Projects (STAMP)**

**Agency:** Department of Defense Office of Naval Research N00014-21-S-B002

**Website:** <https://www.grants.gov/web/grants/view-opportunity.html?oppId=329699>

**Brief Description:** The Department of Defense Manufacturing Technology Program (ManTech) is the Defense Department's investment mechanism for staying at the forefront of defense-essential manufacturing capability. The Program develops technologies and processes for the affordable and timely production and sustainment of defense systems. The Program impacts all phases of acquisition. It aids in achieving reduced acquisition and total ownership costs by developing, maturing, and transitioning key manufacturing technologies. ONR will focus investments on those that have the most benefit to the

warfighter and include quick-hitting, rapid response projects to address immediate manufacturing needs. The ManTech Program targets the needs of our warfighters and weapon system programs by helping to find and implement affordable low-risk solutions. The ManTech Program:

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

**Awards:** Multiple awards are anticipated.

**Letter of Intent:** Not required.

**Proposal Deadline:** This announcement will remain open until 30 October 2021 or until replaced by a successor BAA, whichever comes first.

**Contact Information:** Lynn Christian Contracting Officer [For questions regarding this posting.](#)

Questions of a technical nature should be submitted to: Point of Contact Name: Dr. William Mullins Point of Contact Occupation Title: Program Officer Division Title: Naval Materials Division Division Code: 332 One Liberty Center 875 N. Randolph Street Arlington, VA 22203-1995 Email Address: [william.m.mullins@navy.mil](mailto:william.m.mullins@navy.mil)

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**Grant Program: Department of Army Energetics Basic Research Center Fiscal Year 2022**

**Agency: Department of Defense Dept of the Army -- Materiel Command W911NF-21-S-0001**

**Website:** <https://www.grants.gov/web/grants/view-opportunity.html?oppId=329459>

**Brief Description:** The future Army is projected to be unable to achieve dominance in range and lethality due to inadequate energetic formulations and form factor limitations associated with current weapon systems. Basic research generates new knowledge that may be exploited to develop and deliver new materials and technologies that contribute to enhanced lethal effects at the system level as well as increased range and a smaller payload. These, in turn, enable space for larger, missioncritical systems, and shorter time-to-target ensuring Army battlefield dominance in MultiDomain Operations. Army research must encompass new ways to expedite the discovery, design, and scale-up of new materials and concepts which when integrated into newly designed weapons components (e.g. additively manufactured high strength steels with pre-formed fragmentation patterns, and structural reactive materials) developed at ARL and across the Army and DoD communities, will deliver decisive weapons overmatch.

To achieve the desired future technological overmatch, advances must be made in new synthetic methodologies targeting novel energetic materials to increase performance for both explosive and propulsion applications. Physics-based synthesis (e.g., processes that use pressure, mechanical action, electromagnetic fields and/or high-energy plasmas) can potentially access materials outside those available via classical chemical synthesis, allowing exploitation of novel, nontraditional materials capable of explosive energy release (e.g., dense metastable extended solids such as doped poly-nitrogen, structural-bond-energy release materials, composite reactive materials).

**Awards:** It is anticipated that \$3M in annual funding will be available for award to a single proposal under Funding Area One (Center). It is also anticipated that up to \$1M in annual aggregate funding will be available for all awards under Funding Area Two (Seedling). It is anticipated that the Seedling awards will range from \$60k-\$250k per year, with typical awards in the range of \$120k-\$180k per year. Awards

in the upper end of the range will be made only for extremely meritorious proposals. Seedling Proposals submitted under Funding Area Two in excess of \$250k per year will not be considered. It is anticipated that \$4M per year is the aggregate funding available for all full proposal awards under the EBRC BAA (to include Center and Seedling awards).

**Letter of Intent:** White papers are required.

**Proposal Deadline:** White Papers Due: 3 January 2021; Final Proposals by Invite Only Due: 2 May 2021

**Contact Information:** Program Manager: Ralph A. Anthenien Jr., [ralph.a.anthenien2.civ@mail.mil](mailto:ralph.a.anthenien2.civ@mail.mil), 919-549-4317 b. Technical Points of Contact (TPOCs) i. Robert Mantz [robert.a.mantz.civ@mail.mil](mailto:robert.a.mantz.civ@mail.mil) 919-549-4309 ii. Stephen Lee [stephen.j.lee28.civ@mail.mil](mailto:stephen.j.lee28.civ@mail.mil) 919-549-4365 iii. Edward Byrd [edward.f.byrd2.civ@mail.mil](mailto:edward.f.byrd2.civ@mail.mil) 410-306-0729

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### **Grant Program: Young Faculty Award (YFA)**

**Agency: Department of Defense DARPA DARPA-RA-21-01**

**Website:** <https://beta.sam.gov/opp/aabf37db17b949b88494684292eb854e/view>

**Brief Description:** The Defense Advanced Research Projects Agency (DARPA) Young Faculty Award (YFA) program aims to identify and engage rising stars in junior faculty positions in academia and equivalent positions at non-profit research institutions and expose them to Department of Defense (DoD) and National Security challenges and needs. In particular, YFA will provide high-impact funding to elite researchers early in their careers to develop innovative new research directions in the context of enabling transformative DoD capabilities. The long-term goal of the program is to develop the next generation of scientists and engineers in the research community who will focus a significant portion of their future careers on DoD and National Security issues. DARPA is particularly interested in identifying outstanding researchers who have previously not been performers on DARPA programs, but the program is open to all qualified applicants with innovative research ideas.

**Awards:** Multiple awards are anticipated. Anticipated Funding Available for Award: Each award will include a 24-month base period (a maximum of \$500,000) and a 12-month option period (a maximum of \$500,000).

**Letter of Intent:** Executive Summary Due Date: October 26, 2020, 4:00 p.m. o FAQ Submission Deadline: December 21, 2020, 4:00 p.m. See Section VIII.A.

**Proposal Deadline:** Full Proposal Due Date: January 8, 2021, 4:00 p.m.

**Contact Information:** BAA Coordinator [DARPA-RA-21-01@darpa.mil](mailto:DARPA-RA-21-01@darpa.mil)

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### **Grant Program: Defense Sciences Office Office-wide**

**Agency: Department of Defense DARPA - Defense Sciences Office HR001120S0048**

**Website:** <https://beta.sam.gov/opp/36d6bc789b364142a0f7a267017b06d9/view>

**Brief Description:** The mission of the Defense Advanced Research Projects Agency (DARPA) Defense Sciences Office (DSO) is to identify and create the next generation of scientific discovery by pursuing high-risk, high-payoff research initiatives across a broad spectrum of science and engineering disciplines and transforming these initiatives into disruptive technologies for U.S. national security. In support of this mission, the DSO Office-wide BAA invites proposers to submit innovative basic or applied research concepts or studies and analysis proposals that address one or more of the following technical thrust areas: (1) Frontiers in Math, Computation and Design, (2) Limits of Sensing and Sensors, (3) Complex Social Systems, and (4) Anticipating Surprise. Each of these thrust areas is described below and includes a list of example research topics that highlight several (but not all) potential areas of interest. Proposals must investigate innovative approaches that enable revolutionary advances. DSO is explicitly not interested in

approaches or technologies that primarily result in evolutionary improvements to the existing state of practice.

**Awards:** Multiple awards are anticipated; however, the level of funding for individual awards made under this solicitation has not been predetermined and will depend on the scope and quality of the proposals received, as well as the availability of funds.

**Proposal Deadline:** Executive Summary Due Date and Time: June 11, 2021, 4:00 p.m. o Proposal Abstract Due Date and Time: Abstracts may be submitted on a rolling basis until June 11, 2021, 4:00 p.m. o FAQ Submission Deadline: June 2, 2021, 4:00 p.m. Proposals may be submitted on a rolling basis until June 11, 2021, 4:00 p.m

**Contact Information:** Phil Root, Deputy Director, DARPA/DSO o BAA Email: [HR001120S0048@darpa.mil](mailto:HR001120S0048@darpa.mil)

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**Grant Program: C4ISR, Information Operations, Cyberspace Operations and Information Technology System Research**

**Agency: Department of Defense Naval Information Warfare Center Pacific N66001-20-S-4702**

**Website:** <https://www.grants.gov/web/grants/search-grants.html>

**Brief Description:** Naval Information Warfare Center, Pacific (NIWC Pacific), is soliciting proposals in accordance with FAR 35.016, DoDGARS 22.315(a), and DoD Other Transactions (OT) Guide for Prototype Projects for research in areas relating to the advancement of C4ISR capabilities, enabling technologies for Information Operations and Cyberspace Operations, and Information Technology systems. Submissions in response to this announcement shall be for areas relating to the advancement of Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) capabilities, enabling technologies for Information Operations and Cyberspace Operations, and Information Technology systems. Proposed research should investigate unique and innovative approaches for defining and developing next generation integratable C4ISR capabilities and command suites. The area topics reflect the interest of the NIWC Pacific, but interest from other Team NAVWAR components could be generated and selections could be made for funding by other than NIWC Pacific. Only offers that are in the areas of basic research, applied research, advanced technology development, and advanced component development and prototypes will be considered (see Appendix A). Testing and optimizing of concepts or prototypes may be necessary. This may involve virtual simulation and/or laboratory as well as at sea measurements.

**Awards:** Multiple awards are anticipated

**Proposal Deadline:** Closing date; June 03. 2021 Any white papers received during that time shall only be considered for award of a contract, other transaction, grant, or cooperative agreement.

**Contact Information:** David Roden (Primary) Contract Specialist Telephone: (619) 553-2087 Email: [David.Roden@navy.mil](mailto:David.Roden@navy.mil) NIWC Pacific Code 22710 53560 Hull Street San Diego, CA 92152-5001

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**[Department of Transportation](#)**

**Grant Program: Pilot Program for Transit-Oriented Development (TOD) Planning 2020 Notice of Funding**

**Agency: Department of Transportation FTA-2020-014-TPE**

**Website:** <https://www.fhwa.dot.gov/fastact/factsheets/advtranscongmgmtfs.cfm>

**Brief Description:** The Pilot Program for TOD Planning is intended to fund comprehensive planning that supports economic development, ridership, multimodal connectivity and accessibility, increased transit access for pedestrian and bicycle traffic, and mixed-use development near transit stations. The program also encourages identification of infrastructure needs and engagement with the private sector. Consistent with statutory direction, FTA is seeking comprehensive planning projects covering an entire transit capital project corridor, rather than proposals that involve planning for individual station areas or only a small section of the corridor. To ensure any proposed planning work reflects the needs and aspirations of the local community and results in concrete, specific deliverables and outcomes, transit project sponsors must partner with entities with land use planning authority in the transit project corridor to conduct the planning work.

The Pilot Program for TOD Planning helps support FTA’s mission of improving public transportation for America’s communities by providing funding to local communities to integrate land use and transportation planning around a new fixed guideway or core capacity improvement project. Per statute, any comprehensive planning funded through the program must examine ways to improve economic development and ridership, foster multimodal connectivity and accessibility, improve transit access for pedestrian and bicycle traffic, engage the private sector, identify infrastructure needs, and enable mixed-use development near transit stations.

**Award:** The Federal Transit Administration (FTA) announces the availability of approximately \$6.2 million in Pilot Program. FTA may award amounts ranging from \$250,000 to \$2,000,000.

**Letter of Intent:** Not Required

**Proposal Deadline:** An applicant must submit a proposal electronically by **11:59 p.m. Eastern Daylight Time on October 26, 2020.**

**Contact Information:** Dwayne Weeks, Office of Planning and Environment, (202) 493-0316, email: [Dwayne.Weeks@dot.gov](mailto:Dwayne.Weeks@dot.gov)

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### **[Department of Agriculture:](#)**

#### **Grant Program: Biotechnology Risk Assessment Research Grants Program**

**Agency:** Department of Agriculture National Institute of Food and Agriculture USDA-NIFA-BRAP-008032

**Website:** <https://nifa.usda.gov/funding-opportunity/biotechnology-risk-assessment-research-grants-program-brag>

**Brief Description:** The purpose of the BRAG program is to support the generation of new information that will assist Federal regulatory agencies in making science-based decisions about the effects of introducing into the environment genetically engineered organisms (GE), including plants, microorganisms — such as fungi, bacteria, and viruses — arthropods, fish, birds, mammals and other animals excluding humans. Investigations of effects on both managed and natural environments are relevant. The BRAG program accomplishes its purpose by providing federal regulatory agencies with scientific information relevant to regulatory issues. See the Request for Applications (RFA) for details. [View the Centers of Excellence \(COE\) webpage](#) to access a factsheet on the COE designation process, including COE criteria, and a list of programs offering COE opportunities.

**Awards:** Grant from \$25,000 to \$500,000; Available funding: \$4,500,000

**Letter of Intent:** Encouraged but not required by January 21, 2021

**Proposal Deadline:** February 24, 2021

**Contact Information:** Contact at: [Lakshmi Matukumalli](#)

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**Grant Program: Scientific Cooperation Research Program (SCRP)**

**Agency: Department of Agriculture USDA-FAS-10961-0700-10-21-0001**

**Website:** <https://govtribe.com/opportunity/federal-grant-opportunity/scientific-cooperation-research-program-scrp-usdafas10961070010210001>

**Brief Description:** The Scientific Cooperation Research Program (SCRP) supports FAS' Borlaug Fellowship Program and other strategic goals and utilizes the scientific communities' accumulated knowledge and technologies to help aid in developing practical solutions to address issues including agricultural trade and market access, animal and plant health, biotechnology, food safety and security, and sustainable natural resource management. All applications must include foreign collaborations, and projects should not exceed two years. Funding may be allocated to foreign collaborators through sub-awards. Background The Scientific Cooperation Research Program (SCRP) is a Foreign Agricultural Service Office, (FAS) administered program that has been in existence for several decades. Historically, SCRCP has funded hundreds of collaborative research programs between U.S. and foreign scientists.

**Awards:** This program supports up to 10 collaborative research programs annually, up to \$50,000.

**Proposal Deadline:** March 01, 2021

**Contact Information:** Isaac Ehlers-Weiss (202)690-5080 [USDA email address](#)

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**Grant Program: Agriculture and Food Research Initiative - Foundational and Applied Science**

**Agency: Department of Agriculture USDA-NIFA-AFRI-007692**

**Website:** <https://nifa.usda.gov/funding-opportunity/agriculture-and-food-research-initiative-foundational-applied-science-program>

**Brief Description:** The AFRI Foundational and Applied Science Program supports grants in six AFRI priority areas to advance knowledge in both fundamental and applied sciences important to agriculture. The six priority areas are: Plant Health and Production and Plant Products; Animal Health and Production and Animal Products; Food Safety, Nutrition, and Health; Bioenergy, Natural Resources, and Environment; Agriculture Systems and Technology; and Agriculture Economics and Rural Communities. Research-only, extension-only, and integrated research, education and/or extension projects are solicited in this Request for Applications (RFA). See Foundational and Applied Science RFA for specific details.

**Letter of Intent: Required.**

**Awards:** Up to \$15,000,000; Anticipated available funding: \$290,000,000

**Proposal Deadline:** Thursday, July 29, 2021

**Contact Information:** [AFRI Coordination Team](#)

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**[Department of Labor](#)**

**Grant Program: Workforce Pathways for Youth Grant Program**

**Agency: Department of Labor FOA-ETA-21-01**

**Website:** <https://www.grants.gov/web/grants/view-opportunity.html?oppId=330348>

**Brief Description:** This Announcement solicits applications for the Workforce Pathways for Youth grant program. The purpose of this program is to increase alignment between workforce and OST programs and expand job training and workforce pathways for youth and disconnected youth including soft skill development, career exploration, job readiness and certification, summer jobs, year-round job

opportunities, and apprenticeships. The grant program, as outlined in the Department of Labor Appropriations Act, 2020 (Public Law 116-94) Statement of Managers, provides \$10,000,000 to utilize the demonstration grant authority under the dislocated worker national reserve for grants to support national out-of-school time (OST) organizations that serve youth. These grants will place an emphasis on age-appropriate workforce readiness programming to expand job training and workforce pathways for youth, including soft skill development, career exploration, job readiness and certification, summer jobs, year-round job opportunities, and apprenticeships. Funding will also support partnerships between workforce boards and youth serving organizations.

**Awards:** Awards up to \$5,000,000; Awards floor: \$3,300,000. Anticipated available funding: \$10,000,000.

**Proposal Deadline:** February 4, 2021

**Contact Information:** Denise Roach Grants Management Specialist [Roach.Denise@dol.gov](mailto:Roach.Denise@dol.gov)

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### [Department of Commerce/EDA](#)

**Grant Program: FY2021 Coastal and Ocean Modeling Testbed Project**

**Agency:** U.S. Department of Commerce NOAA-NOS-IOOS-2021-2006729

**Website:** <https://www.grants.gov/web/grants/view-opportunity.html?oppId=330267>

**Brief Description:** The U.S. Integrated Ocean Observing System (IOOS®) is a national and regional partnership working to provide ocean, coastal and Great Lakes observations, data, tools, and forecasts to improve safety, enhance the economy, and protect our environment. The U.S. IOOS Program is seeking to fund projects which advance new or existing solutions that address long standing and emerging coastal modeling and forecast product development challenges. This announcement specifically funds activities needed to progress through the transitional stages from research toward full operations (such as system integration, testing, validation, and verification). Projects will be expected to participate in and advance the operation of the U.S. IOOS COMT under a community modeling environment. Funding will be targeted to models, tools or products, with demonstrated operators and end users, that are sufficiently mature for evaluation and transition to long term operations.

**Awards:** Total estimated funding for all awards is up to \$2 million per year from the U.S. IOOS Program. Multiple awards are anticipated, subject to availability of funds, in amounts up to \$300,000 per year for up to three years.

**Letter of Intent:** Contact the program director.

**Proposal Deadline:** February 26, 2021

**Contact Information:** Debra Esty (240) 533-9446 [Work](#)

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**Grant Program: FY2021 to FY2023 NOAA Broad Agency Announcement (BAA)**

**Agency:** U.S. Department of Commerce NOAA-NFA-NFAPO-2021-2006626

**Website:** <https://www.grants.gov/web/grants/view-opportunity.html?oppId=329261>

**Brief Description:** This Broad Agency Announcement is a mechanism to encourage research, education and outreach, innovative projects, or sponsorships that are not addressed through NOAA's competitive discretionary programs. This announcement is not soliciting goods or services for the direct benefit of NOAA. Funding for activities described in this notice is contingent upon the availability of Fiscal Year 2021, Fiscal Year 2022, and Fiscal Year 2023 appropriations. Applicants are hereby given notice that funds have not yet been appropriated for any activities described in this notice. Publication of this

announcement does not oblige NOAA to review an application beyond an initial administrative review, or to award any specific project, or to obligate any available funds. As an agency with responsibilities for maintaining and improving the viability of marine and coastal ecosystems, for delivering valuable weather, climate, and water information and services, for understanding the science and consequences of climate change, and for supporting the global commerce and transportation upon which we all depend, NOAA must remain current and responsive in an ever-changing world.

**Awards:** Contingent to the availability of funds.

**Letter of Intent:** Contact the program director.

**Proposal Deadline:** Applications can be submitted on a rolling basis starting from the publication date of this Broad Agency Announcement up to 11:59:59 p.m., Eastern Daylight Time on September 30, 2023.

**Contact Information:** Mr. Lamar Dwayne Revis, 301-628-1308, [lamar.revis@noaa.gov](mailto:lamar.revis@noaa.gov)

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## [EPA](#)

### **Grant Program: Training and Technical Assistance to Improve Water Quality and Enable Small Public Water Systems to Provide Safe Drinking Water**

**Agency:** Environmental Protection Agency EPA-OW-OGWDW-20-02

**Website:** <https://www.grants.gov/web/grants/view-opportunity.html?oppId=330212>

**Brief Description:** EPA is soliciting applications to provide training and technical assistance to private drinking water well owners to improve water quality. Training and technical assistance activities provided to these systems, communities, and private drinking water well owners should be made available nationally in rural and urban communities and to all personnel of these systems, including personnel of tribally-owned and -operated systems. Eligible activities include training and technical assistance only. Infrastructure projects such as repairing water or sewer lines, adding new equipment, or upgrading, retrofitting or rehabilitating existing equipment, are not eligible for funding under this announcement. The three National Priority Areas and activities to be funded under this announcement support EPA's FY 2018-22 Strategic Plan, available at [www.epa.gov/planandbudget/strategicplan](http://www.epa.gov/planandbudget/strategicplan).

**Award:** The total estimated amount of federal funding potentially available under this announcement is \$17,700,000, depending on Agency funding levels, the quality of applications received, agency priorities, and other applicable considerations.

**Submission Deadline:** February 12, 2021

**Contact:** [Alyssa Edwards](#)

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### **Grant Program: Viral Pathogen and Surrogate Approaches for Assessing Treatment Performance in Water Reuse**

**Agency:** Environmental Protection Agency EPA-G2021-STAR-A1

**Website:** <https://www.epa.gov/research-grants/viral-pathogen-and-surrogate-approaches-assessing-treatment-performance-water-reuse>

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

marker HF183, etc.) via co-occurrence studies and quantitative microbial risk assessments. EPA recognizes that it is important to engage all available minds to address the environmental challenges the Nation faces. At the same time, EPA seeks to expand the environmental conversation by including members of communities which may have not previously participated in such dialogues to participate in EPA programs. For this reason, EPA strongly encourages all eligible applicants identified in Section III, including minority serving institutions (MSIs), to apply under this opportunity.

**Award:** It is anticipated that a total of approximately \$6.2 million will be awarded under this announcement.

**Submission Deadline:** Solicitation Closing Date: January 6, 2021 11:59:59 pm Eastern Time

**Contact:** Sarah Ludwig-Monty, Phone: 202-566-1072 [ludwig-monty.sarah@epa.gov](mailto:ludwig-monty.sarah@epa.gov)

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## [Department of Energy](#)

### **Grant Program: Scientific Discovery Through Advanced Computing: Partnerships in Basic Energy Sciences**

**Agency:** Department of Energy Office of Science DE-FOA-0002441

**Website:** <https://www.grants.gov/web/grants/view-opportunity.html?oppId=330209>

**Brief Description:** The DOE SC programs in Basic Energy Sciences (BES) and Advanced Scientific Computing Research (ASCR) announce their interest in receiving applications from interdisciplinary teams to establish Partnerships under the SC-wide Scientific Discovery through Advanced Computing (SciDAC) program in specific targeted topic areas that relate to the BES and ASCR missions.

This Announcement invites new research proposals for the SciDAC-5 Partnerships in BES that enable or accelerate scientific discovery employing DOE High-End/High-Performance Computing (HPC) facilities, e.g., see <https://science.osti.gov/ascr/Facilities>. For the purposes of this Announcement, the term “DOE HPC” has been expanded to include the high performance production computational systems at the National Energy Research Scientific Computing Center (NERSC), as well as those existing, or planned to be available by 2022, at the Argonne Leadership Computing Facility (ALCF), Oak Ridge Leadership Computing Facility (OLCF), or similar DOE computing facilities. ASCR expects that DOE HPC will include exascale machines now planned for these Facilities (Perlmutter, Aurora, Frontier) within the period covered by this Announcement, please consult the following websites for further information:

<https://www.nersc.gov/systems/perlmutter>, <https://alcf.anl.gov/aurora>,

<https://www.olcf.ornl.gov/frontier> <https://science.osti.gov/ascr/Facilities/User-Facilities/Upgrades>

**Awards:** Award range: \$1,000,000 - \$2,000,000. DOE anticipates that, subject to the availability of future year appropriations, a total of up to \$32 million in current and future fiscal year funds will be used to support awards under this FOA for grants, cooperative agreements, and National Laboratory authorizations.

**Letter of Intent:** Please see below.

**Submission Deadline:** Submission Deadline for Pre-Applications: January 19, 2021 at 5 PM Eastern Time A Pre-Application is required Pre-Application Response Date: February 16, 2021 Submission Deadline for Applications: April 6, 2021 at 11:59 PM Eastern Time

**Contact:** Dr. Matthias Graf (Basic Energy Sciences) [Matthias.Graf@science.doe.gov](mailto:Matthias.Graf@science.doe.gov); Dr. Randall Lavolette (Advanced Scientific Computing Research) [Randall.Lavolette@science.doe.gov](mailto:Randall.Lavolette@science.doe.gov)

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**Grant Program: Hydrogen and Fuel Cell Technologies Office (HFTO) R&D FY 2021 Funding Opportunity Announcement**

**Agency: Department of Energy Office of Science DE-FOA-0002446**

**Website:** <https://epicweb.ee.doe.gov/EPICWeb/#/public/submission/opportunityDetail/2313>

**Brief Description:** Hydrogen and fuel cells represent a growing industry with potential to enable energy resiliency, energy security, emission reductions and economic growth.

This FOA supports research and development (R&D) to enable “H2@Scale” - a DOE initiative to achieve large scale production, storage, transport, and utilization of hydrogen across multiple sectors. [1] Supporting EERE’s core priorities of energy affordability, integration and storage, H2@Scale research, development and demonstration (RD&D) aims to advance the adoption of hydrogen and fuel cell technologies in integrated energy systems across key applications that provide a value proposition as well as reduce emissions. However, a number of challenges remain including cost, performance, durability, manufacturing and scale-up issues, and developing integrated systems that demonstrate the unique technical, economic and environmental benefits of hydrogen and fuel cells.

To address these challenges, HFTO supports a comprehensive RD&D portfolio addressing materials, component- and systems-level R&D on hydrogen and fuel cell technologies (e.g., MW-scale electrolyzers, fuel cells for heavy-duty transportation applications, hydrogen delivery and fueling infrastructure, among others) ; and technology acceleration efforts addressing first-of-a-kind demonstrations of integrated energy systems, as well as manufacturing innovations and safety codes and standards. HFTO RD&D relies heavily on collaborations among various industry and university stakeholders and the national laboratories, including through HFTO-managed consortia.

**Awards:** Anticipated available funding: \$8,000,000

**Letter of Intent:** Please see below.

**Submission Deadline:** Submission Deadline for Concept Papers: 01/15/2021 5:00pm ET Submission Deadline for Full Applications: 03/08/2021 5:00pm ET Expected Submission Deadline for Replies to Reviewer Comments: 04/09/2021 5:00pm ET

**Contact:** Matthias Graf, Ph.D., Program Manager, [matthias.graf@science.doe.gov](mailto:matthias.graf@science.doe.gov)

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**Grant Program: FY21 Bioenergy Technologies Office (BETO) Feedstock Technologies and Algae FOA**

**Agency: Department of Energy Office of Science DE-FOA-0002423**

**Website:** <https://epicweb.ee.doe.gov/EPICWeb/#/public/submission/opportunityDetail/2330>

**Brief Description:** DOE’s Bioenergy Technologies Office (BETO) develops technologies that convert domestic biomass and waste resources into fuels, products, and power to enable affordable energy, economic growth, and innovation in renewable energy and chemicals production. This Funding Opportunity Announcement (FOA) DE-FOA-0002423 will support BETO’s highest priority research and development (R&D) areas in two BETO programs: Feedstock Technologies and Advanced Algal Systems. Both Topic Areas support BETO’s objectives to reduce the minimum selling price of drop-in biofuels, lower the cost of biopower, and enable high-value products from biomass or waste resources.

Under this funding opportunity, BETO is interested in the following Topic Areas:

**Topic Area 1: Characterization of Municipal Solid Waste to Enable Production of Conversion-Ready Feedstocks**

Subtopic 1a: Measurement of Variability of Key MSW Characteristics within and across Unique MSW Streams

Subtopic 1b: Development of Novel Methods for Rapid/Real-time Measurements

**Topic Area 2: Algae Productivity Exceeding Expectations (APEX)**

Subtopic 2a: Improvements in Productivity with Traditional Carbon Dioxide (CO<sub>2</sub>) Supply  
Subtopic 2b: Improvements in Productivity with Direct Air Capture (DAC) of CO<sub>2</sub> from Ambient Air  
**Awards:** EERE expects to make a total of approximately \$35,000,000 of federal funding available for new awards under this FOA, subject to the availability of appropriated funds. EERE anticipates making approximately 11 to 15 awards under this FOA. EERE may issue one, multiple, or no awards. Individual awards may vary between \$2,000,000 and \$3,500,000.

**Letter of Intent:** Please see below.

**Submission Deadline:** Submission Deadline for Concept Papers: 02/01/2021 5:00pm ET Submission Deadline for Full Applications: 04/05/2021 5:00pm ET

**Contact:** Dr. Dawn M. Adin [Dawn.adin@science.doe.gov](mailto:Dawn.adin@science.doe.gov) Dr. Boris Wawrik [boris.wawrik@science.doe.gov](mailto:boris.wawrik@science.doe.gov)

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**Grant Program: Systems Biology of Bioenergy-Relevant Microbes to Enable Production of Next-Generation Biofuels and Bioproducts**

**Agency: Department of Energy Office of Science DE-FOA-0002448**

**Website:** <https://www.grants.gov/web/grants/view-opportunity.html?oppId=330176>

**Brief Description:** The DOE SC program in Biological and Environmental Research (BER) hereby announces its interest in receiving applications for research within the Biological Systems Science Division's (BSSD) Genomic Science Program (GSP) (<http://genomicscience.energy.gov>) mission-space. This FOA solicits applications for: a) research to advance the development of promising new model organisms, microbial functional capabilities, and biosynthetic pathways relevant to biofuels and bioproducts production; and b) research into the metabolic pathways that can achieve synthetic polymer deconstruction and conversion to recycled monomers.

The ability to manipulate microbial biosynthetic pathways and metabolism using synthetic biology provides unprecedented opportunities to address a wide range of topics related to DOE's mission in sustainable bioenergy development. This includes research that enhances the production of advanced biofuels, bioproducts as well as the conversion and upcycling of synthetic polymers. To enable a future where biological systems can be designed and modified for desired specific outcomes and deliver positive impacts for the environment and the bioeconomy, the GSP is soliciting applications in the following subtopic areas for this FOA:

SUBTOPIC A - SUSTAINABLE BIOENERGY

SUBTOPIC B - POLYMER UPCYCLING

**Awards:** It is anticipated that award sizes may range from \$250,000 per year to \$500,000 per year.

Anticipated available funding: \$9,000,000

**Letter of Intent:** Please see below.

**Submission Deadline:** Submission Deadline for Pre-Applications: January 19, 2021 at 5 PM Eastern Time A Pre-Application is required Pre-Application Response Date: January 29, 2021 at 5 PM Eastern Time Submission Deadline for Applications: April 6, 2021 at 11:59 PM Eastern Time

**Contact:** Dr. Dawn M. Adin [Dawn.adin@science.doe.gov](mailto:Dawn.adin@science.doe.gov) Dr. Boris Wawrik [boris.wawrik@science.doe.gov](mailto:boris.wawrik@science.doe.gov)

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**Grant Program: Environmental System Science**

**Agency: Department of Energy Office of Science DE-FOA-0002392**

**Website:** [https://science.osti.gov/-/media/grants/pdf/foas/2021/SC\\_FOA\\_0002392.pdf](https://science.osti.gov/-/media/grants/pdf/foas/2021/SC_FOA_0002392.pdf)

**Brief Description:** The DOE SC program in Biological and Environmental Research (BER) hereby announces its interest in receiving applications for research in Environmental System Science (ESS). The

goal of the ESS program in BER is to advance an integrated, robust, and scale-aware predictive understanding of terrestrial systems and their interdependent biological, chemical, ecological, hydrological and physical processes. The program seeks to develop an integrated framework using a systems approach to unravel the complex processes and controls on the structure, function, feedbacks, and dynamics of terrestrial ecosystems, spanning from the bedrock through the rhizosphere and vegetation to the atmospheric surface layer. The scope includes watersheds and coastal zones, terrestrial-aquatic interfaces, and understudied ecosystems that represent a 2 significant knowledge gap in local and regional process models and predictive Earth system models.

This FOA will consider applications that focus on measurements, experiments, field data, and modeling to provide improved understanding and representation of ecosystems and watersheds in ways that advance the sophistication and capabilities of models that span from individual processes to Earth system scales. This FOA will encompass three Science Research Areas: 1) Terrestrial-Aquatic Interfaces (TAI), specifically seeking research exploring ecological and environmental dynamics that in turn influence hydro-biogeochemical processes in zones with wide-ranging cyclic soil saturation states; 2) Perturbations and Disturbances, specifically studying watershed and ecosystem responses, feedbacks, and recovery from extremes events and chronic compounding perturbations and environmental shifts; and 3) Novel Methods for Capturing “Hot Spots” and “Hot Moments” of Biogeochemical Activity, to develop and demonstrate methodologies suitable for precisely measuring the occurrence and quantifying the magnitude of “hot spots” and/or “hot moments” in ways that are extensible to different types of watersheds, ecosystems or regions.

**Awards:** Total funding up to \$8,000,000 is expected to be available to support this FOA subject to appropriation of funds by the Congress. Approximately 5 to 12 awards are expected.

**Letter of Intent:** Please see below.

**Submission Deadline:** Submission Deadline for Pre-Applications: December 17, 2020 at 5:00 pm Eastern Time A Pre-Application is required Pre-Application Response Date: January 7, 2021 at 11:59 pm Eastern Time Submission Deadline for Applications: March 4, 2021 at 11:59 pm Eastern Time

**Contact:** Dr. Jennifer Arrigo [Jennifer.Arrigo@science.doe.gov](mailto:Jennifer.Arrigo@science.doe.gov)

Dr. Brian Bencoter [Brian.Bencoter@science.doe.gov](mailto:Brian.Bencoter@science.doe.gov)

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## [NASA](#)

**Grant Program: ROSES 2020: Heliophysics Flight Opportunities in Research and Technology**

**Agency: NASA NNH20ZDA001N-HFORT**

**Website:** <https://nspires.nasaprs.com/external/solicitations/summary.do?sollId=%7BDBCE844C-1D0B-D36A-12A6-86FC953F1B6C%7D&path=&method=init>

**Brief Description:** The Heliophysics Flight Opportunities in Research and Technology (H-FORT) program seeks to fund space and sub-orbital science and science-enabling investigations that use platforms that include SmallSats (including CubeSats), Balloon Missions, and Hosted Rideshare Payloads, such as International Space Station (ISS)-attached payloads. The program encourages the development of technologies that will enable investigation of heliophysics science questions. All proposed investigations must be responsive to NASA Heliophysics Science Goals. H-FORT is a component of the Heliophysics Research Program and proposers interested in this program element are encouraged to see B.1 The Heliophysics Research Program Overview for Heliophysics-specific requirements and Science Goals and objectives. Common requirements for all ROSES elements are found in the ROSES Summary of Solicitation and the 2020 Proposer’s Guidebook

([https://prod.nais.nasa.gov/pub/pub\\_library/srba/proposers\\_guidebooks.html](https://prod.nais.nasa.gov/pub/pub_library/srba/proposers_guidebooks.html)). The order of precedence is the following: B.11 (this document) followed by B.1, followed by the ROSES Summary of Solicitation, and the Proposer's Guidebook. Proposers should be familiar with all of these resources.

**Awards:** Available funding: \$3,000,000

**Notice of Intent:** Not required.

**Proposal Deadline:** March 26, 2021

**Contact:** Dan Moses, Telephone: (202) 358-0558 Email: [dan.moses@nasa.gov](mailto:dan.moses@nasa.gov)

Amy Winebarger, Telephone: (256) 961-7509 Email: [amy.r.winebarger@nasa.gov](mailto:amy.r.winebarger@nasa.gov)

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## **Grant Program: ROSES 2020: In-Space Validation of Earth Science Technologies**

**Agency:** NASA NNH20ZDA001-INVEST

**Website:** <https://nspires.nasaprs.com/external/solicitations/summary.do?solId=%7BA5B2B8C3-E494-E766-CECA-B07A359AACC4%7D&path=&method=init>

**Brief Description:** Through the In-Space Validation of Earth Science Technologies (InVEST) program, NASA's Earth Science Division validates new technologies, measurement concepts and techniques, prior to their inclusion in Earth science missions. The objective of InVEST is to test viability of these concepts in the space environment, especially those attributes that cannot be fully tested on the ground or in airborne systems, to reduce the risk to future Earth science missions. The validation of new technologies and measurement concepts/techniques in space can significantly reduce the risk to future Earth science missions. The In-Space Validation of Earth Science Technologies (InVEST) program element is intended to overcome these limitations.

**Awards:** Available funding: \$6,000,000

**Notice of Intent:** January 29, 2021

**Proposal Deadline:** March 9, 2021

**Contact:** Sachidananda R. Babu, Flight Validation Lead, InVEST Program Manager, Earth Science Technology Office Telephone: (301) 286-7304 Email: [sachidananda.r.babu@nasa.gov](mailto:sachidananda.r.babu@nasa.gov)

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## **National Endowment of Humanities**

### **Grant Program: Sustaining Cultural Heritage Collections**

**Agency:** National Endowment for the Humanities 20210114-PF

**Website:** <https://www.neh.gov/grants/preservation/sustaining-cultural-heritage-collections>

**Brief Description:** The Sustaining Cultural Heritage Collections program helps cultural institutions meet the complex challenge of preserving large and diverse holdings of humanities materials for future generations by supporting sustainable conservation measures that mitigate deterioration, prolong the useful life of collections, and support institutional resilience: the ability to anticipate and respond to disasters resulting from natural or human activity.

Cultural institutions, including libraries, archives, museums, and historical organizations, face an enormous challenge: to preserve humanities collections that facilitate research, strengthen teaching, and provide opportunities for lifelong learning. To ensure the preservation of books and manuscripts, photographs, sound recordings and moving images, archaeological and ethnographic artifacts, art, and historical objects, cultural institutions must implement measures that slow deterioration and prevent catastrophic loss from emergencies resulting from natural or human activity. They can accomplish this work most effectively through preventive conservation. Preventive conservation encompasses managing

relative humidity, temperature, light, and pollutants in collection spaces; providing protective storage enclosures and systems for collections; and safeguarding collections from theft, fire, floods, and other disasters.

As museums, libraries, archives, and other collecting institutions strive to be effective stewards of humanities collections, they must find ways to implement preventive conservation measures that are sustainable. This program helps cultural repositories plan and implement preservation strategies that pragmatically balance effectiveness, cost, and environmental impact. Sustainable approaches to preservation can contribute to an institution's financial health, reduce its use of fossil fuels, and benefit its green initiatives, while ensuring that collections are well cared for and available for use in humanities programming, education, and research. Sustainable preventive conservation measures may also aim to prepare and plan for, absorb, respond to, recover from, and more successfully protect collections in the event of emergencies resulting from natural or human activity.

A pre-application webinar for prospective applicants will be held December 3, 2020 at 1:00 p.m. Eastern Time. Registration is not required, and a recording will be available for those unable to attend. [Please use this link to join the webinar.](#)

**Award:** Maximum award amount: \$50,000; Implementation: \$350,000

**Proposal Deadline:** Optional Draft due December 10, 2020; Application due January 14, 2021

**Contact:** Contact the Division of Preservation and Access Team 202-606-8570; [preservation@neh.gov](mailto:preservation@neh.gov)

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## [Private Foundations](#)

### **Whitehall Foundation**

**Grant Program: Bioscience Research Projects**

**Agency: Whitehall Foundation**

**Website:** <http://whitehall.org/grants/>

**Brief Description:** The [Whitehall Foundation](#) assists scholarly research in the life sciences through its research grants and grants-in-aid programs. It is the foundation's policy to support those dynamic areas of basic biological research that are not heavily supported by federal agencies or other foundations with specialized missions. The foundation emphasizes the support of young scientists at the beginning of their careers and productive senior scientists who wish to move into new fields of interest. To that end, the foundation invites LOIs for two grant programs: Research and Grants-in-Aid

**Awards:** Research Grants: Grants for up to \$225,000 for three years will be awarded.

Grants-in-Aid — One-year grants of up to \$30,000 will be awarded.

**Letter of Intent: January 15, 2021**

**Proposal Deadline:** The Foundation will accept letters of intent by email for all letter of intent deadlines in 2021. **Please send all letters of intent to [LOI@whitehall.org](mailto:LOI@whitehall.org)**

**Contact:** If you have any questions, please contact Richard Rosenberg at [rnr@njit.edu](mailto:rnr@njit.edu)

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### **L'Oréal USA**

**Grant Program: The L'Oréal USA For Women in Science fellowship program**

**Agency: L'Oréal USA**

**Website:** <https://www.loreal.com/en/usa/pages/group/fwis/>

**Brief Description:** The For Women in Science program was created out of a simple belief: the world needs science, and science needs women because women in science have the power to change the world. The program is the U.S. component of the [L'Oréal-UNESCO For Women in Science International Fellowships program](#). Celebrating its seventeenth year in the U.S., the For Women in Science program has awarded 85 postdoctoral women scientists over \$4 million in grants. L'Oréal USA partners with the American Association for the Advancement of Science (AAAS) to manage the program's application and peer-review process. Each year, the program attracts talented applicants from diverse STEM fields, representing some of the nation's leading academic institutions and laboratories.

**Awards:** The L'Oréal USA For Women in Science fellowship program awards five women postdoctoral scientists annually with grants of \$60,000 each for their contributions in Science, Technology, Engineering and Math (STEM) fields and commitment to serving as role models for younger generations.

**Letter of Intent:** Not required.

**Proposal Deadline:** Applications due January 29, 2021.

**Contact:** If you have any questions, please contact Richard Rosenberg at [rnr@njit.edu](mailto:rnr@njit.edu)

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### **[Streamlyne Question of the Week](#)**

**Question:** I need to change my budget - Do I need to change it in Streamlyne?

**Answer:** You can change your budget at any point before submitting the proposal into workflow approval. For more information, please contact your college ambassador, or see New User Manual posted on the Research website

<http://www.njit.edu/research/sites/research/files/StreamlyneNewUserManualCommonElements.pdf> ).

More FAQs on Streamlyne: Please visit <http://www.njit.edu/research/streamlyne/>

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### **[Proposal Submission and Streamlyne Information](#) [Internal Timeline for Successful and Timely Proposal Submission](#)**

Due to the COVID-19 outbreak, PIs are strongly advised to prepare proposals well in advance of agency deadlines. Every effort will be made to meet agency deadlines following the NJIT Research Continuity Plan (<https://research.njit.edu/njit-research-continuity-plan>).

The NJIT Proposal Submission Guidelines and Policy posted on the website <https://research.njit.edu/proposal-submission-guidelines> provides the expected institutional timeline for proposal submission. Streamlyne User Manuals are posted on <https://research.njit.edu/streamlyne>. For contact information on proposal submission, pre-award services and post-award grant management, please visit research website <https://research.njit.edu/researchers> and <https://research.njit.edu/contact>.

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