

# NJIT Research Newsletter

Issue: ORN-2020-47

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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: 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); Designing Synthetic Cells Beyond the Bounds of Evolution (Designer Cells); Smart Health and Biomedical Research in the Era of Artificial Intelligence and Advanced Data Science (SCH); Planning Grants for Engineering Research Centers (ERC); Campus Cyberinfrastructure (CC\*); Environmental Convergence Opportunities in Chemical, Bioengineering, Environmental, and Transport Systems (ECO-CBET); Arctic Research Opportunities Strengthening American Infrastructure (SAI); NSF/CASIS Collaboration on Transport Phenomena Research on the International Space Station (ISS) to Benefit Life on Earth; Navigating the New Arctic (NNA); Vision and Change in Undergraduate Biology Education (V&C)

**NIH: 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 (ONES) Award (R01); Analytical Validation of a Candidate Biomarker for Neurological or Neuromuscular Disorders (U44); Stephen I. Katz Early Stage Investigator Research Project Grant (R01 Clinical Trial Not Allowed)

**Department of Defense/US Army/DARPA/ONR: Combat Capabilities Development Command (CCDC); 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: Community Connect Grant Program;** Agriculture and Food Research Initiative - Foundational and Applied Science

**Department of Labor: Supply Chains Tracing Project**

**Department of Commerce/EDA: FY2021 to FY2023 NOAA Broad Agency Announcement (BAA)**

**EPA: Technical Assistance to Brownfields Communities;** Viral Pathogen and Surrogate Approaches for Assessing Treatment Performance in Water

**Department of Energy: Environmental System Science;** Computational Chemical Sciences; Early Career Research Program; Connected Communities

**NASA: Heliophysics Environmental and Radiation Measurement Experiment Suite (HERMES) Interdisciplinary Science Teams; ROSES 2020: Future Investigators in NASA Earth and Space Science and Technology**

[National Endowment of Humanities: Collaborative Research; Digital Humanities Advancement Grants](#)

[Private Foundations: Robert Wood Johnson Foundation: Health Data for Action: \(Data Access Award\); Pioneering Ideas: Exploring the Future to Build a Culture of Health](#)

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

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

**PI:** Hyomin Kim (PI) and Ilya Kuzichev (Co-PI)

**Department:** Center for Solar Terrestrial Research

**Grant/Contract Project Title:** Investigation of Interhemispheric Asymmetries in High- Latitude Magnetosphere-Ionosphere Coupling Processes

**Funding Agency:** NASA

**Duration:** 10/22/20-10/21/24

**PI:** Wen Zhang (PI)

**Department:** Civil and Environmental Engineering

**Grant/Contract Project Title:** Microwave-Catalytic Membrane for Per- and Polyfluoroalkyl Substances Degradation

**Funding Agency:** U.S. Environmental Protection Agency

**Duration:** 12/01/20-11/30/21

**PI:** Wen Zhang (PI)

**Department:** Civil and Environmental Engineering

**Grant/Contract Project Title:** Induction-Surface-Heating Membrane Distillation

**Funding Agency:** U.S. Environmental Protection Agency

**Duration:** 12/01/20-11/30/21

**PI:** Qing Liu (PI)

**Department:** Electrical and Computer Engineering

**Grant/Contract Project Title:** Understanding and Enhancing Scientific Data Reduction for Extreme-scale Computing

**Funding Agency:** U.S. DOE (Brookhaven National Lab)

**Duration:** 11/30/18-09/30/22

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

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

**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](#).

**National Institutes of Health Initiative for Maximizing Student Development:** The goal of the Initiative for Maximizing Student Development (IMSD) program is to develop a diverse pool of scientists earning a Ph.D., who have the skills to successfully transition into careers in the biomedical research workforce. This funding opportunity provides support to eligible, domestic institutions to develop and implement effective, evidence-informed approaches to biomedical graduate training and mentoring that will keep pace with the rapid evolution of the biomedical research enterprise. Proposed research training programs are expected to incorporate didactic, research, mentoring, and career development elements to prepare trainees for careers that will have a significant impact on the health-related research needs of the Nation. A brief about this [RFP](#) is included in the Grant Opportunities section below.

**IT Modernization:** The Information Technology Industry Council, which represents [dozens](#) of high-profile tech companies and government contracting firms, expects an expansion of current IT modernization investment and efforts under President-elect Joe Biden and Vice President-elect Kamala Harris. Those investments will be driven in part by the government’s continued response to the COVID-19 pandemic as well as bolstering economic recovery after millions of jobs were lost in the crisis.

“The Biden-Harris administration is expected to seek expansion or at least modification of a wide range of federal functions that will be buttressed by IT,” according to an ITI analysis discussed with reporters Thursday. “Many recent and ongoing pandemic-completed practices—including remote federal

technology responsiveness, service at a distance, and greater need and demands for access to resources without physical presence, among others—are creating new best practices and expectations that are likely to endure well beyond the end of this health emergency. Taken together, it becomes clear that federal technology modernization will be essential to most of the stated agenda of the Biden-Harris administration.” In fiscal 2020, the government expected to spend upward of **\$90 billion** on IT, and investment has generally increased year over year regardless of administration. Gordon Bitko, ITI’s senior vice president of policy for public sector, told reporters he expected a Biden administration to make significant investments in securing the government supply chain and modernizing American manufacturing and innovation—in part to respond to the COVID-19 pandemic and economic recovery. More information is posted on the [NextGov website](#).

**Interagency Committee Issues Recommendations for Using Cloud to Accelerate Artificial Intelligence:** The Select Committee on Artificial Intelligence—an interagency group of AI experts across the federal government—issued several recommendations Nov. 17 regarding how agencies can better tap cloud computing resources for research and development efforts.

[The report](#) makes clear cloud computing provides “robust, agile, reliable and scalable computing capabilities” that augment existing AI technologies. However, while cloud computing is near ubiquitous in the private sector, there are still “several technical and administrative challenges” limiting cloud adoption in other arenas, including federal agencies’ research and development areas. Gaining access to cloud computing varies across the federal landscape, and best practices differ depending on environments, according to the report. In addition, “limited access to education and training opportunities” for researchers themselves limit how well they make use of cloud environments.

The committee—at the direction of President Trump in a 2019 executive order—identified four key recommendations regarding how government can address these challenges:

- Launch and support pilot projects to identify and explore the advantages and challenges associated with the use of commercial clouds in conducting federally funded AI research.
- Improve education and training opportunities to help researchers better leverage cloud resources for AI R&D.
- Catalog best practices in identity management and single-sign-on strategies to enable more effective use of the variety of commercial cloud resources for AI R&D.
- Establish and publish best practices for the seamless use of different cloud platforms for AI R&D.

The full report is posted on the website <https://www.whitehouse.gov/wp-content/uploads/2020/11/Recommendations-Cloud-AI-RD-Nov2020.pdf>

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## **Webinar and Events**

**Event: Virtual NSF Grants Conference**

**Sponsor: NSF**

**When: November 30, 2020 1:00 PM to December 4, 2020 4:00 PM**

**Website:** [https://www.nsf.gov/events/event\\_summ.jsp?cntn\\_id=301319&org=NSF](https://www.nsf.gov/events/event_summ.jsp?cntn_id=301319&org=NSF)

**Brief Description:** This event is designed to give faculty, researchers and administrators key insights into a wide range of current issues at NSF. NSF staff will provide up-to-date information about the proposal and award process, specific funding opportunities and answering attendee questions.

Just like the in-person grants conferences, the NSF Virtual Grants Conference is a must, especially for new faculty, researchers and administrators.

Highlights include:

- New programs and initiatives
- Future directions and strategies for national science policy
- Proposal preparation
- NSF's merit review process
- Conflict of interest policies
- Award Management Topics
- NSF-wide funding opportunities

For those who cannot attend the live conference, all sessions will be recorded and available on-demand shortly after the event.

Please check the [conference website](#) for the most-up-to-date information, and view recordings of sessions from last year's conference.

**To Join the Webinar:** Please check the conference website <https://nspolicyoutreach.com/>.

### **Event: Invention To Impact WireSide Chat**

**Sponsor:** NSF

**When:** December 2, 2020, 2020 2.00 PM – 3.00 PM

**Website:** [https://www.nsf.gov/events/event\\_summ.jsp?cntn\\_id=301672&org=NSF](https://www.nsf.gov/events/event_summ.jsp?cntn_id=301672&org=NSF)

**Brief Description:** The National Science Foundation's (NSF) Division of Industrial Innovation and Partnerships (IIP) is pleased to invite you to webinar, "Invention To Impact WireSide Chat," on Wednesday, December 2, 2020, from 2:00 to 3:00 p.m. ET. This virtual event will include 15-minute presentations from world-renowned scholars followed by a 30-minute panel discussion with questions from the audience.

**To Join the Webinar:** [REGISTER HERE](#)

### **Event: GEO Virtual Office Hours**

**Sponsor:** NSF

**When:** December 2, 2020, 2020 2.30 PM – 4.00 PM

**Website:** [https://www.nsf.gov/events/event\\_summ.jsp?cntn\\_id=301649&org=NSF](https://www.nsf.gov/events/event_summ.jsp?cntn_id=301649&org=NSF)

**Brief Description:** Normally presented as a workshop at AGU, *Navigating the NSF System* is a good opportunity for first time proposers and early career scientists to gain insight to the ins and outs of the NSF grant proposal process. The webinar consists of a presentation and a live Q&A session with GEO Program Officers. Participants must register in advance using the link below under "Related Websites." Please join us for this informative webinar!

**To Join the Webinar:** Webinar Registration

Form: [https://nsf.zoomgov.com/webinar/register/WN\\_cSO1ybkkQtGUwIufBo--Tg](https://nsf.zoomgov.com/webinar/register/WN_cSO1ybkkQtGUwIufBo--Tg)

### **Event: The Ins and Outs of the Foreign Travel Brief**

**Sponsor:** NSF

**When:** December 3, 2020, 2020 12.00 PM – 13.00 PM

**Website:** [https://cdse-events.acms.com/content/connect/c1/7/en/events/event/shared/15152082/event\\_registration.html?connect-session=breezbreez8yxxaav42bgfk8md&sco-id=15142679&\\_charset=utf-8](https://cdse-events.acms.com/content/connect/c1/7/en/events/event/shared/15152082/event_registration.html?connect-session=breezbreez8yxxaav42bgfk8md&sco-id=15142679&_charset=utf-8)

**Brief Description:** Are you thinking, "Wow, this is SO timely because we are doing so much foreign travel during this pandemic?" Relax and join CDSE as we go into more detail on the foreign travel brief (FTB), how many of the tenets of the FTB apply to virtual conferences and meetings, other things we are doing in a virtual environment, and pro tips for when we DO start travelling again. Additionally, we will



discuss the tools that will help enable you to administer and manage an FTB program both within a COVID-19 environment and without.

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

**Event: CyberTraining (NSF-19-524) Webinar**

**Sponsor:** NSF

**When:** December 8, 2020, 2020 2.00 PM – 3.30 PM

**Website:** [https://www.nsf.gov/events/event\\_summ.jsp?cntn\\_id=301654&org=NSF](https://www.nsf.gov/events/event_summ.jsp?cntn_id=301654&org=NSF)

**Brief Description:** This program seeks to prepare, nurture, and grow the national scientific research workforce for creating, utilizing, and supporting advanced cyberinfrastructure (CI) to enable and potentially transform fundamental science and engineering research and contribute to the Nation's overall economic competitiveness and security. The goals of this solicitation are to (i) ensure broad adoption of CI tools, methods, and resources by the research community in order to catalyze major research advances and to enhance researchers' abilities to lead the development of new CI; and (ii) integrate core literacy and discipline-appropriate advanced skills in advanced CI as well as computational and data-driven science and engineering into the Nation's educational curriculum/instructional material spanning undergraduate and graduate courses for advancing fundamental research.

This solicitation calls for innovative, scalable training, education, and curriculum/instructional materials—targeting one or both of the solicitation goals—to address the emerging needs and unresolved bottlenecks in scientific and engineering research workforce development, from the postsecondary level to active researchers.

We will review the CyberTraining solicitation ([NSF-19-524](#)), including all three project classes, and the priorities of the participating divisions. We will also have Q&A.

**To Join the Webinar:** Webinar Registration

[https://nsf.zoomgov.com/webinar/register/WN\\_04wnUh83T8Sp4TB12WkK\\_w](https://nsf.zoomgov.com/webinar/register/WN_04wnUh83T8Sp4TB12WkK_w)

**Event: Biology Integration Institutes (BII) Webinar**

**Sponsor:** NSF

**When:** December 8, 2020, 2020 1.00 PM – 2.00 PM

**Website:** [https://www.nsf.gov/events/event\\_summ.jsp?cntn\\_id=301720&org=NSF](https://www.nsf.gov/events/event_summ.jsp?cntn_id=301720&org=NSF)

**Brief Description:** A webinar about the Biology Integration Institutes (BII) solicitation ([NSF 20-601](#)) will be held Tuesday, December 8, 2020 at 1 p.m. Eastern.

There will be a presentation followed by a Q&A period.

**To Join the Webinar:** Please click the link below to join the webinar:

<https://nsf.zoomgov.com/j/1603208549?pwd=S0IDS1pkd2hpZVVJdnVGYVFNdUUhYUT09>

Passcode: J%A7NB

**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 III: Wednesday, November 18, 12 pm Eastern (60 min)**

**Deep Tech Incubation and Academia Nexus**

Deep tech innovation is often born out of academic research at campuses across the nation. As a result, colleges and universities play a unique and critical role in fostering the development and commercialization of technologies that will transform our lives. The technology discovery and transfer processes can be especially risky for deep tech innovations given the complexity of scaling them from lab to market and understanding potential commercial applications. However, colleges and universities

remain at the forefront of deep tech incubation. Their people and programs that support this research translation process directly impact the strength and competitiveness of technology innovation in the U.S. The third part of the Deep Dive Into Deep Tech Incubation webinar series will feature visionaries from leading academic institutions to discuss this research translation nexus and how they manage the deep tech commercialization process and instill strong entrepreneurial cultures at their respective campuses.

**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: 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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**Grant Program: Designing Synthetic Cells Beyond the Bounds of Evolution (Designer Cells)**

**Agency: National Science Foundation NSF 21-531**

**RFP Website:** <https://www.nsf.gov/pubs/2021/nsf21531/nsf21531.htm>

**Brief Description:** Because of recent technological advances in synthetic biology and bioengineering, researchers are now able to tailor cells and cell-like systems for a variety of basic and applied research purposes. The goal of this solicitation is to support research that (1) develops cell-like systems to identify the minimal requirements for the processes of life, (2) designs synthetically-modified cells to address fundamental questions in the evolution of life or to explore biological diversity beyond that which currently exists in nature, and (3) leverages basic research in cell design to build novel synthetic cell-like systems and cells for innovative biotechnology applications.

Highest funding priority is given to proposals that have outstanding intellectual merit and broader impacts, while proposals with weaknesses in either category (or those that are perceived as likely to have an incremental impact) will not be competitive. Proposals submitted to this solicitation should address social, ethical, and safety issues associated with designing and building synthetically modified cells as an integrated component of the project.

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

**Letters of Intent:** Not required

**Proposal Submission Deadline:** February 16, 2021; February 01, 2022

**Contacts:** Anthony G. Garza, telephone: (703) 292-8440, email: [aggarza@nsf.gov](mailto:aggarza@nsf.gov)

- Steven W. Peretti, telephone: (703) 292-7029, email: [speretti@nsf.gov](mailto:speretti@nsf.gov)
  - Senay Agca, telephone: (703) 292-2459, email: [sagca@nsf.gov](mailto:sagca@nsf.gov)
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## **Grant Program: Smart Health and Biomedical Research in the Era of Artificial Intelligence and Advanced Data Science (SCH)**

**Agency:** National Science Foundation NSF 21-530

**RFP Website:** <https://www.nsf.gov/pubs/2021/nsf21530/nsf21530.htm>

**Brief Description:** The purpose of this interagency program solicitation is to support the development of transformative high-risk, high-reward advances in computer and information science, engineering, mathematics, statistics, behavioral and/or cognitive research to address pressing questions in the biomedical and public health communities. Transformations hinge on scientific and engineering innovations by interdisciplinary teams that develop novel methods to intuitively and intelligently collect, sense, connect, analyze and interpret data from individuals, devices and systems to enable discovery and optimize health. Solutions to these complex biomedical or public health problems demand the formation of interdisciplinary teams that are ready to address these issues, while advancing fundamental science and engineering.

**Awards:** Standard Grant or Continuing Grant; Anticipated Funding Amount: \$16,000,000 to \$20,000,000

Projects will be funded for up to four years for a total of \$1,200,000 (\$300,000 per year).

**Letters of Intent:** Not required

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

**Contacts:** Wendy Nilsen, Directorate for Computer and Information Science and Engineering, Division of Information and Intelligent Systems, telephone: (703) 292-2568, email: [wnilsen@nsf.gov](mailto:wnilsen@nsf.gov)

- Scott T. Acton, Directorate for Computer and Information Science and Engineering, Division of Computing and Communication Foundations, telephone: (703) 292-8910, email: [sacton@nsf.gov](mailto:sacton@nsf.gov)
  - Balakrishnan Prabhakaran, Directorate for Computer and Information Science and Engineering, Division of Information and Intelligent Systems, telephone: (703) 292-4847, email: [bprabhak@nsf.gov](mailto:bprabhak@nsf.gov)
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## **Grant Program: Planning Grants for Engineering Research Centers (ERC)**

**Agency: National Science Foundation NSF 21-526**

**RFP Website:**

[https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=5521&org=NSF&sel\\_org=NSF&from=fund](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5521&org=NSF&sel_org=NSF&from=fund)

**Brief Description:** The ERC program is placing greater emphasis on high-risk/high-payoff research, larger societal impact, convergent research approaches, engagement of stakeholder communities, and adoption of team science in team formation, in response to the 2017 NASEM study recommendation. The ERC program intends to support planning activities leading to convergent research team formation and capacity-building within the engineering community. This planning grant solicitation is designed to foster and facilitate the engineering community's thinking about how to form convergent research collaborations. To participate in a forthcoming ERC competition, one is not required to submit a planning grant proposal nor to receive a planning grant.

**Awards:** Standard Grants; Anticipated Funding Amount: \$2,000,000

**Letters of Intent:** Not required

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

**Contacts:** Sarit B. Bhaduri, telephone: (703) 292-2975, email: [sbhaduri@nsf.gov](mailto:sbhaduri@nsf.gov)

- Sandra Cruz-Pol, telephone: (703) 292-2928, email: [scrucpol@nsf.gov](mailto:scrucpol@nsf.gov)
- Dana L. Denick, telephone: (703) 292-8866, email: [ddenick@nsf.gov](mailto:ddenick@nsf.gov)

**Grant Program: Campus Cyberinfrastructure (CC\*)**

**Agency: National Science Foundation NSF 21-528**

**RFP Website:** <https://www.nsf.gov/pubs/2021/nsf21528/nsf21528.htm>

**Brief Description:** The Campus Cyberinfrastructure (CC\*) program invests in coordinated campus-level networking and cyberinfrastructure improvements, innovation, integration, and engineering for science applications and distributed research projects. Learning and workforce development (LWD) in cyberinfrastructure is explicitly addressed in the program. Science-driven requirements are the primary motivation for any proposed activity.

In recent years, NSF has addressed the growing requirements of the NSF community, and opportunities to innovate, in networking infrastructure through the CC\* program, which invests in innovative, coordinated, and secure campus, multi-campus and multi-institution CI components. The Campus Cyberinfrastructure-Network Infrastructure and Engineering (CC-NIE) program in 2012 and 2013 focused on campus networking upgrades and re-architecting, and innovative development and integration of new networking capabilities in support of driving scientific application requirements. Subsequent years saw the program expand beyond data networking to address a broader set of CI needs at the campus level, including computing, storage, multi-institution integrated CI, and learning and workforce development. The CC\* solicitation invests in coordinated campus-level networking and cyberinfrastructure improvements, innovation, integration, and engineering for science applications and distributed research projects. Science-driven requirements are the primary motivation for any proposed activity.

**Awards:** Standard Grant or Continuing Grant; Anticipated Funding Amount: \$13,000,000 to \$15,000,000

Each program area will support awards pursuant to the following budget and duration:

1. Data-Driven Networking Infrastructure for the Campus and Researcher awards will be supported at up to \$500,000 total for up to 2 years;
2. Regional Connectivity for Small Institutions of Higher Education awards will be supported at up to \$1,000,000 total for up to 2 years;
3. Network Integration and Applied Innovation awards will be supported at up to \$1,000,000 total for up to 2 years [in some cases these awards are limited to \$500,000 total—see program area (3) in Section II. Program Description];



4. Campus Computing and the Computing Continuum awards will be supported at up to \$400,000 total for up to 2 years; and
5. Planning Grants and CI-Research Alignment awards will be supported for up to \$200,000 total for up to two years [in some cases, these awards are limited to \$100,000 total—see program area (5) in Section II. Program Description].

**Letters of Intent:** Not required

**Proposal Submission Deadline:** March 01, 2021; October 11, 2021

**Contacts:** Kevin L. Thompson, Program Director, CISE/OAC, telephone: (703) 292-4220, email: [kthompso@nsf.gov](mailto:kthompso@nsf.gov)

- Deepankar (Deep) Medhi, Program Director, CISE/CNS, telephone: (703) 292-8950, email: [dmedhi@nsf.gov](mailto:dmedhi@nsf.gov)

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**Grant Program: Environmental Convergence Opportunities in Chemical, Bioengineering, Environmental, and Transport Systems (ECO-CBET)**

**Agency: National Science Foundation NSF 21-527**

**RFP Website:**

[https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=505748&org=NSF&sel\\_org=NSF&from=fund](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505748&org=NSF&sel_org=NSF&from=fund)

**Brief Description:** Creating effective solutions to our most pressing environmental and sustainability challenges requires imaginative thinking - the kind that evolves when researchers from disparate fields, expertise, or perspectives fully immerse themselves in work toward a common goal. The National Academies of Sciences, Engineering and Medicine (NASEM), in their report "[Environmental Engineering for the 21<sup>st</sup> Century: Addressing Grand Challenges](#)," identified five critical challenges we must address as a society:

- Sustainably supply food, water, and energy
- Curb climate change and adapt to its impacts
- Design a future without pollution and waste
- Create efficient, healthy, and resilient cities
- Foster informed decisions and actions

Accordingly, the Environmental Convergence Opportunities in Chemical, Bioengineering, Environmental, and Transport Systems (ECO-CBET) solicitation will support fundamental research activities that confront vexing environmental engineering and sustainability problems by developing foundational knowledge underlying processes and mechanisms such that the design of innovative new materials, processes, and systems is possible. Projects should be compelling and reflect sustained, coordinated efforts from highly interdisciplinary research teams. A key objective of the solicitation is to encourage dialogue and tightly integrated collaborations wherein the chemical process systems, transport phenomena, and bioengineering communities engage with environmental engineering and sustainability experts to spark innovation and arrive at unanticipated solutions. Furthermore, training the future workforce to successfully engage in discipline-transcending research will support continued innovation toward surmounting the complex environmental and sustainability challenges facing our global community.

Process science and engineering, in the context of this solicitation, is broadly defined to include all programmatic interests of the National Science Foundation (NSF) Directorate for Engineering's (ENG) Division of Chemical, Bioengineering, Environmental, and Transport Systems (CBET).

**Awards:** Standard Grants; Anticipated Funding Amount: TBA; Awards are expected to range from \$1,500,000 to \$1,700,000 over four years.

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

**Proposal Submission Deadline:**



**Preliminary Proposal Deadline Date:** February 11, 2021

**Full Proposal Deadline Date:** May 7, 2021

**Contacts:** Christina Payne [eco-cbet@nsf.gov](mailto:eco-cbet@nsf.gov) (703) 292-2895

Bruce K. Hamilton [eco-cbet@nsf.gov](mailto:eco-cbet@nsf.gov) (703)292-7066

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**Grant Program: Arctic Research Opportunities**

**Agency: National Science Foundation NSF 21-526**

**RFP Website:**

[https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=5521&org=NSF&sel\\_org=NSF&from=fund](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5521&org=NSF&sel_org=NSF&from=fund)

**Brief Description:** The National Science Foundation (NSF) invites investigators at U.S. organizations to submit proposals to the Arctic Sciences Section, Office of Polar Programs (OPP), to conduct research about the Arctic region. The goal of this solicitation is to attract research proposals that advance a fundamental, process, and/or systems-level understanding of the Arctic's rapidly changing natural environment, social and cultural systems, and, where appropriate, to improve our capacity to project future change. The Arctic Sciences Section supports research focused on the Arctic region and its connectivity with lower latitudes. The scientific scope is aligned with, but not limited to, research priorities outlined in the [Interagency Arctic Research Policy Committee \(IARPC\)](#) five-year plan.

The Arctic Sciences Section coordinates with programs across NSF and with other federal and international partners to co-review and co-fund Arctic-related proposals as appropriate. The Arctic Sciences Section also maintains Arctic logistical infrastructure and field support capabilities that are available to enable research.

**Awards:** Standard Grants; Anticipated Funding Amount: TBA

**Letters of Intent:** Not required

**Proposal Submission Deadline:** Full Proposal Accepted Anytime

**Contacts:** Gregory J. Anderson [greander@nsf.gov](mailto:greander@nsf.gov) (703) 292-4693 W7134

Renee D. Crain [rcrain@nsf.gov](mailto:rcrain@nsf.gov) (703) 292-4482 W7154

Roberto Delgado [robdelga@nsf.gov](mailto:robdelga@nsf.gov) (703) 292-2397 W7246

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**Grant Program: Strengthening American Infrastructure (SAI)**

**Agency: National Science Foundation NSF PD 21-145Y**

**RFP Website:**

[https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=505847&org=NSF&sel\\_org=NSF&from=fund](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505847&org=NSF&sel_org=NSF&from=fund)

**Brief Description:** The National Science Foundation (NSF) seeks to stimulate fundamental exploratory, potentially transformative research that strengthens America's infrastructure. Effective infrastructure, whether it be physical, cyber, or social, provides a strong foundation for socioeconomic vitality and broad quality of life improvement. Strong, reliable, and effective infrastructure spurs private-sector innovation, grows the economy, creates jobs, makes public-sector service provision more efficient, strengthens communities, promotes equal opportunity, protects the natural environment, enhances national security, and fuels American leadership. To achieve these goals requires expertise from across the science and engineering disciplines. In particular, knowledge of human reasoning and decision making, governance, and social and cultural processes are essential to efforts to envision, build, and maintain an effective infrastructure that improves lives and society and builds on advances in technology and engineering.

NSF seeks to build research capacity that can address these and many other challenging infrastructure contexts that require a human- and-social-centered approach. SAI supports conference and EAGER proposals that will bring together experts across disciplines to support substantial and potentially pathbreaking, untested fundamental research grounded in user-centered concepts and offering the

potential to substantially improve or transform the design, use, development, cost-effectiveness, or maintenance of U.S. infrastructure. These proposals should include a central focus on at least one SBE program area with the lead PI being an expert in social, behavioral, or economic science. Proposals must also demonstrate an interdisciplinary approach beyond that of any single Program or NSF Directorate.

**NSF is particularly interested in proposals that integrate a deep understanding of human cognition, perception, information processing, decision making, social and cultural behavior, legal frameworks, governmental structures, and related areas into the design, development, and sustainability of infrastructure.** Infrastructure may be of any kind, including cyber, economic, educational, physical, and social.

**Awards:** Standard Grants; Anticipated Funding Amount: TBA

**Letters of Intent:** Please see below

**Proposal Submission Deadline:**

November 30, 2020: Conference Proposals

December 11, 2020: EAGER Proposal Concept Outlines

January 15, 2021: EAGER Proposals (with authorization to submit)

**Contacts:** Steven J. Breckler [sbreckle@nsf.gov](mailto:sbreckle@nsf.gov) (703) 292-7369

Kenyatta Johnson [kenjohns@nsf.gov](mailto:kenjohns@nsf.gov) (703) 292-4850

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**Grant Program: NSF/CASIS Collaboration on Transport Phenomena Research on the International Space Station (ISS) to Benefit Life on Earth**

**Agency: National Science Foundation NSF 21-525**

**RFP Website:** <https://www.nsf.gov/pubs/2021/nsf21525/nsf21525.htm>

**Brief Description:** The Division of Chemical, Bioengineering and Environmental Transport (CBET) in the Engineering Directorate of the National Science Foundation (NSF) is partnering with The Center for the Advancement of Science in Space (CASIS) to solicit research projects in the general field of fluid dynamics, particulate and multiphase processes, combustion and fire systems, thermal transport processes, and nanoscale interactions that can utilize the International Space Station (ISS) National Lab to conduct research that will benefit life on Earth. Only entities that qualify as "U.S. Persons" under 22 U.S. Code §6010, including academic investigators, non-profit independent research laboratories and academic-commercial teams are eligible to apply.

**Awards:** Standard Grants; Anticipated Funding Amount: \$3,600,000

**Letters of Intent:** Not required

**Proposal Submission Deadline:** December 07, 2020 - March 02, 2021

**Contacts:** Ronald D. Joslin, Fluid Dynamics, telephone: (703) 292-7030, email: [rjoslin@nsf.gov](mailto:rjoslin@nsf.gov)

- William Olbricht, Particulate and Multiphase Processes, telephone: (703) 292-4842, email: [wolbrich@nsf.gov](mailto:wolbrich@nsf.gov)
  - Nora F. Savage, Nanoscale Interactions, telephone: (703) 292-7949, email: [nosavage@nsf.gov](mailto:nosavage@nsf.gov)
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**Grant Program: Navigating the New Arctic (NNA)**

**Agency: National Science Foundation NSF 21-524**

**RFP Website:** <https://www.nsf.gov/pubs/2021/nsf21524/nsf21524.htm>

**Brief Description:** Navigating the New Arctic (NNA) embodies an important forward-looking response by the Foundation to these profound challenges. NNA seeks innovations in fundamental convergence research across the social, natural, environmental, computing and information sciences, and engineering that address the interactions or connections among natural and built environments and social systems, and how these connections inform our understanding of Arctic change and its local and global effects.

This solicitation requests proposals that fall within one of three tracks: **NNA Planning Grants**, dedicated to developing convergence research questions and teams to tackle projects of larger scope in the future; **NNA Research Grants**, aimed to support creative projects on fundamental research that address convergent scientific and engineering challenges related to the rapidly changing Arctic; and **NNA Collaboratory Grants**, designed to support collaborative teams undertaking research and training initiatives on critical themes of a broad scope related to the New Arctic. This solicitation is the third of what is envisioned to be at least a five-year agency-wide program to support the research and dissemination of new knowledge needed to inform the economy, security, and resilience of the Nation, the larger Arctic region, and the globe with respect to Arctic change.

**Awards:** Standard Grant or Continuing Grant or Cooperative Agreement.; Anticipated Funding Amount: \$30,000,000

This solicitation will consider proposals for three types of projects:

NNA Planning Grants with a total budget of up to \$300,000 and a maximum duration of 24 months.

NNA Research Grants with a total budget of up to \$3,000,000 and a maximum duration of 5 years.

NNA Collaboratory Grants with no budget restrictions and a maximum duration of 5 years.

**Letters of Intent:** Not required

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

**Contacts:** John Schlueter, Team Lead, MPS/DMR, telephone: (703) 292-7766, email: [jschluet@nsf.gov](mailto:jschluet@nsf.gov)

- Peter Anderson, MPS/DMR, telephone: (703) 292-4507, email: [peanders@nsf.gov](mailto:peanders@nsf.gov)
- Marian Bocea, MPS/DMS, telephone: (703) 292-2595, email: [mbocea@nsf.gov](mailto:mbocea@nsf.gov)

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## **Grant Program: Vision and Change in Undergraduate Biology Education (V&C)**

**Agency: National Science Foundation NSF PD 21-7412**

**RFP Website:**

[https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=505859&org=NSF&sel\\_org=NSF&from=fund](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505859&org=NSF&sel_org=NSF&from=fund)

**Brief Description:** The National Science Foundation's (NSF's) Division of Undergraduate Education (DUE) in the Directorate for Education and Human Resources (EHR) acknowledges the need to expand and chronicle educational change efforts across the nation. To this end, DUE invites proposals to study the impact of the Vision and Change (V&C) movement in Undergraduate Biology Education. Specifically, this program seeks to support projects that evaluate a combination of factors such as the awareness, acceptance, adoption, and adaptation of V&C principles and outcomes including changes in curriculum, laboratories, and student retention, completion, and learning. Collectively, results of these projects are anticipated to describe the nature and extent of V&C's use within the undergraduate biology curriculum. The projects could also describe key factors and approaches taken by the V&C community that have the potential to be useful for improving undergraduate education in other scientific disciplines or in interdisciplinary STEM education.

**Awards:** Standard Grants; Various

**Letters of Intent:** Not required

**Proposal Submission Deadline:** March 1, 2021

**Contacts:** Ellen Carpenter [elcarpen@nsf.gov](mailto:elcarpen@nsf.gov) (703) 292-5104

V.Celeste Carter [vccarter@nsf.gov](mailto:vccarter@nsf.gov) (703)292-4651

Pushpa Ramakrishna [pusramak@nsf.gov](mailto:pusramak@nsf.gov) (703) 292-2943

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## [National Institutes of Health](#)

**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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**Grant Program: Analytical Validation of a Candidate Biomarker for Neurological or Neuromuscular Disorders (U44 Clinical Trial Optional)**

**Agency: National Institutes of Health PAR-21-057**

**RFP Website:** <https://grants.nih.gov/grants/guide/pa-files/PAR-21-057.html>

**Companion Funding Opportunity**

**PAR-21-056 - Analytical Validation of a Candidate Biomarker for Neurological or Neuromuscular Disorders (U01 Clinical Trial Optional)**

**PAR-21-058 - Clinical Validation of a Candidate Biomarker for Neurological or Neuromuscular Disorders (U01 Clinical Trial Optional)**

**PAR-21-059 - Clinical Validation of a Candidate Biomarker for Neurological or Neuromuscular Disorders (U44 Clinical Trial Optional)**

**Brief Description:** This PAR is intended to address the gap in biomarker validation by encouraging rigorous **analytical validation** of the biomarker detection method. **Analytical Validation** is defined as the process of establishing that the performance characteristics of the measurement(s) are acceptable in terms of the sensitivity, specificity, accuracy, precision, and other relevant performance characteristics using a specified technical protocol (which may include sample collection and standardization procedures). The level of analytical rigor that is necessary depends upon the characteristics of the biomarker, the detection technology, and the intended category(ies) of biomarker (diagnostic, prognostic, predictive, pharmacodynamic/response, monitoring, safety, or susceptibility/risk) within the proposed context of use(s). Analytical validation establishes the measurement's technical performance so that final clinical validation can be established. Applicants with a detection method that has already been analytically validated for its intended Context of Use may apply directly to the companion PAR, Clinical Validation of a Candidate Biomarker for Neurological or Neuromuscular Disorders (U01 - Clinical Trial Optional) which addresses retrospective and/or prospective clinical validation of candidate biomarkers for use in clinical trials and/or clinical practice.

Applications to this PAR must propose to conduct analytical validation of a biomarker or biomarker signature that already has a well-defined proof of concept and biological rationale. Premise and proof of concept must include evidence that the biomarker/biomarker signature has been tested in an appropriate clinical population, using either prospective or retrospective data or samples and shows sufficient sensitivity and specificity to warrant additional investment. In addition, applications to this PAR must include evidence that the detection method for the biomarker has been developed and subjected to initial evaluation of precision and analytical sensitivity. The application should clearly describe how the proposed study plans to optimize and standardize the detection method, as well as clearly define and rigorously test the analytic and pre-analytic variables to ensure broad and reliable clinical use across multiple sites.

**Awards:** Budgets up to \$700,000 total costs per year for Phase I and up to \$1,500,000 total costs per year for Phase II may be requested.

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

**Proposal Submission Deadline:** February 22, 2021, June 22, 2021, February 22, 2022 June 22, 2022, February 22, 2023, June 22, 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 Taylor-Burds, PhD, National Institute of Neurological Disorders and Stroke (NINDS)  
Telephone: 301-496-1779, Email: [carol.taylor-burds@nih.gov](mailto:carol.taylor-burds@nih.gov)

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**Grant Program: Stephen I. Katz Early Stage Investigator Research Project Grant (R01 Clinical Trial Not Allowed)**

**Agency: National Institutes of Health PAR-21-038**

**Companion Funding Opportunity: [PAR-21-039](#) - Stephen I. Katz Early Stage Investigator Research Project Grant (R01 Basic Experimental Studies with Humans Required)**

**RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-21-038.html>**

**Brief Description:** The purpose of this Funding Opportunity Announcement is to provide a new pathway for Early Stage Investigators (ESIs) who wish to propose research projects in a new direction for which preliminary data do not exist. The Stephen I. Katz Early Stage Investigator Research Project Grant, named in honor of the late National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS) Director, Stephen I. Katz, M.D., Ph.D., is open to a broad range of scientific research relevant to the mission of the participating NIH Institutes and Centers (ICs). Proposed projects must represent a change in research direction for the ESI and should be innovative and unique. A distinct feature for this FOA is that applications must not include preliminary data. This FOA is appropriate for ESIs who wish to initiate a research project in an area different from their previous research focus and/or training experience, and therefore have not produced preliminary data. PD/PIs who wish to proposed research projects consistent with their past work or training and/or supported by preliminary data, should apply to the [Parent R01](#) or other FOAs allowing for preliminary data.

Proposed research projects can rely on the PD/PI's prior work and expertise as its foundation, but must not be an incremental advancement, expansion, or extension of a previous research effort. The change in research direction could involve, for example, a new approach, methodology, technique, discipline, therapeutic target, and/or new paradigm, different from the ESI's previous research efforts. Importantly, the proposed direction must represent a change in research direction for the PD/PI. Because a change in research direction is heavily dependent upon the area of investigation, potential applicants are strongly encouraged to contact a program director to discuss their proposed project. If the application proposes multiple Principal Investigators (MPIs), all PD/PIs must be ESIs and the research direction must be a change in research direction for all MPIs. **Initiative for Maximizing Student Development (IMSD) (T32)**

**For this FOA, applications including preliminary data will be considered noncompliant with the FOA instructions and will be withdrawn.** Preliminary data are defined as data not yet published. Existence of preliminary data is an indication that the proposed project has advanced beyond the scope defined by this program and makes the application unsuitable for this funding opportunity. Publication in the proposed new research direction is an indication that the proposed work may not be in a new research direction for the ESI.

**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:** January 26, 2021; May 26, 2021; September 28, 2021; January 26, 2022; May 26, 2022; September 27, 2022; January 26, 2023; May 26, 2023; September 26, 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:** [Katz R01 Award Clinical Trial Not Allowed IC-Specific Scientific Interests and Contacts website](#)

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### **Department of Defense/US Army/DARPA/ONR/AFOSR**

**Grant Program: Combat Capabilities Development Command (CCDC) Data and Analysis Center (DAC)**

**Agency: Dept of the Army -- Materiel Command W911NF-17-S-0003-SPECIAL-NOTICE-CCDC-DAC**

**Website:** <https://www.grants.gov/web/grants/view-opportunity.html?oppId=330055>

**Brief Description:** Applied research proposals of particular interest to CCDC DAC include HSI related research in support of Maneuver Support and Protection functional areas. Overarching HSI research efforts of interest include, but are not limited to: • Non-medical research on reduction in Soldier's physical and cognitive demands, improved situational awareness, and heightened individual readiness. • Application of human factors engineering to warfighting functions and enabling capabilities. • Research development of tools and methods to address emerging challenges to improve the capabilities of Soldiers by optimizing user performance involving tradeoffs, e.g., between physical space and system weight, crew size, and workload. • Research to maximize lethality, survivability, effectiveness, and integrated performance of Soldiers, their equipment, and systems

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

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

**Proposal Deadline:** Question Submission Deadline 11:59 PM EST December 04, 2020

White Paper Submission Deadline 11:59 PM EST December 21, 2020

**Contact Information:** Technical Point of Contact: Mr. Robert Clark

[dacwhitepapers@leonardwoodinstitute.org](mailto:dacwhitepapers@leonardwoodinstitute.org)

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

**Agency: Department of Army Materiel 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)

**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: Community Connect Grant Program**

**Agency: Department of Agriculture RDRUS-CC-2021**

**Website:** <https://www.rd.usda.gov/sites/default/files/CCFOAFY21.pdf>

**Brief Description:** The Agency encourages applications that will help improve life in Rural America. See information on the Interagency Task Force on Agriculture and Rural Prosperity found at [www.usda.gov/ruralprosperity](http://www.usda.gov/ruralprosperity). Applicants are encouraged to consider projects that provide measurable results in helping rural communities build robust and sustainable economies through strategic investments in infrastructure, partnerships and innovation. Key strategies include: • Achieving e-Connectivity for Rural America • Developing the Rural Economy • Harnessing Technological Innovation • Supporting a Rural Workforce • Improving Quality of Life

**Awards:** Grant from \$100,000 to \$3,000,000 will be applied to this grant opportunity

**Proposal Deadline:** December 23, 2020

**Contact Information:** Contact Us at: [https://www.rd.usda.gov/programs-services/communityconnect-grants#blocktabs-program\\_page--45](https://www.rd.usda.gov/programs-services/communityconnect-grants#blocktabs-program_page--45).

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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: H-1B One Workforce Grant Program**

**Agency:** Department of Labor FOA-ETA-20-13

**Website:** <https://www.grants.gov/web/grants/view-opportunity.html?oppId=329075>

**Brief Description:** The Employment and Training Administration (ETA), U.S. Department of Labor (DOL, or the Department, or we), announces the availability of up to \$150 million in grant funds authorized under section 414(c) of the American Competitiveness and Workforce Improvement Act of 1998 (ACWIA), as amended (codified at 29 USC 3224a) for the H-1B One Workforce grant program. We expect to fund approximately 15–30 grants, with individual grant amounts ranging from \$500,000 to \$10 million. The purpose of this grant program is to fill critical shortages in economic regions by encouraging states and economic regions to work with industry stakeholders to develop dynamic workforce strategies that train workers and jobseekers for middle- to high-skilled H-1B occupations in key industry sectors, such as Information Technology (IT), advanced manufacturing, and transportation that are being transformed by technological advancements and automation, as well as other industries of the future that include artificial intelligence (AI), quantum information sciences (QIS), 5G/advanced communications, and biotechnology.

These grants will build proof of concepts of innovative training models that can be replicated by the broader workforce system. Applicants must build support for a common vision for responding to the workforce challenges within their state and economic regions, ensuring that their projects complement and leverage, but do not duplicate existing programs. By forging public-private partnerships—H-1B One Workforce Partnerships—applicants will bring together industry and employers, education and training providers, the workforce system, state and local government, and other entities that will work collaboratively to align resources in response to employer demand and to offer novel education and job training solutions that generate positive outcomes and results.

**Awards:** Awards up to \$10,000,000; Anticipated available funding: \$150,000,000.

**Proposal Deadline:** Nov 12, 2020 The closing date for receipt of applications under this announcement is November 12, 2020. Applications must be received no later than 4:00:00 p.m. Eastern Time.

**Contact Information:** Andrea Chism Grants Management Specialist [Chism.Andrea.N@dol.gov](mailto:Chism.Andrea.N@dol.gov)

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

### **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: Technical Assistance to Brownfields Communities**

**Agency: Environmental Protection Agency EPA-OLEM-OBLR-20-08**

**Website:** <https://www.epa.gov/grants/technical-assistance-brownfields-communities-0>

**Brief Description:** A critical part of EPA's Brownfields and Land Revitalization Program is to ensure that residents living in communities historically affected by economic disinvestment, health disparities, and environmental contamination have an opportunity to reap the benefits from brownfields redevelopment. The Program has a rich history rooted in a commitment to environmental justice and to helping communities revitalize brownfield properties, mitigate potential health risks, and restore economic vitality.

EPA's Office of Brownfields and Land Revitalization (OBLR) is soliciting applications from eligible entities to provide technical assistance within the geographic areas delineated in Section I.B.6. to assist communities facing brownfields challenges. Cooperative agreements awarded under this announcement will help communities tackle the challenge of assessing, cleaning up and preparing brownfield sites for redevelopment, especially underserved/rural/small and otherwise distressed communities. The technical assistance provided through these agreements will cover technical support on various brownfields subject areas. Regardless of the mechanism by which the technical assistance is made available, it should be geared toward results and in helping the community to move its brownfield sites forward in the process toward cleanup and reuse. In addition, understanding the underlying technical issues associated with a brownfield site will enable communities to participate substantively in brownfield site decisions. For the purposes of this solicitation, technical assistance is defined as providing advice and support, in the form of specialized knowledge, to a person or organization with the goal of guiding them through the brownfield assessment, cleanup and revitalization process or helping them understand complex brownfields-related subject matter. The recipient will provide technical assistance, consistent with EPA policy and procedures, and serve as an independent source of information to assist communities.



**Award:** The total estimated funding for the solicitation is \$11,000,000. EPA anticipates award of up to 11 cooperative agreement(s). The maximum value of each agreement will be based on the technical assistance being provided but the funding for no geographical area will exceed \$1,000,000 under this competitive opportunity.

**Submission Deadline:** December 22, 2020, 11:59 p.m. Eastern Time (ET)

**Contact:** Sahar Rana, (202)566-2916 [rana.sahar@epa.gov](mailto:rana.sahar@epa.gov)

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

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### **Grant Program: Computational Chemical Sciences**

**Agency: Department of Energy Office of Science DE-FOA-0002426**

**Website:** <https://www.grants.gov/web/grants/view-opportunity.html?oppId=329588>

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

**Awards:** Anticipated available funding: \$32,000,000

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

**Submission Deadline:** Submission Deadline for Pre-Applications: December 2, 2020 at 5 PM Eastern Time A Pre-Application is required Pre-Application Response Date: January 11, 2021 at 5 PM Eastern Time Submission Deadline for Applications: February 8, 2021 at 11:59 PM Eastern Time

**Contact:** Dr. Jeffrey L. Krause 301-903-5827 (office); 202-380-7911 (cell) [Jeff.Krause@science.doe.gov](mailto:Jeff.Krause@science.doe.gov)

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### **Grant Program: Early Career Research Program**

**Agency: Department of Energy DE-FOA-0002421**

**Website:** <https://www.grants.gov/web/grants/view-opportunity.html?oppId=329485>

**Brief Description:** DOE SC hereby invites applications for support under the Early Career Research Program in the following program areas: Advanced Scientific Computing Research (ASCR); Basic Energy Sciences (BES); Biological and Environmental Research (BER); Fusion Energy Sciences (FES); High Energy Physics (HEP); Nuclear Physics (NP); Isotope R&D and Production (DOE IP); or Accelerator R&D and Production (ARDAP). The purpose of this program is to support the development of individual research programs of outstanding scientists early in their careers and to stimulate research careers in the areas supported by SC.

SC's mission is to deliver the scientific discoveries and major scientific tools to transform our understanding of nature and advance the energy, economic, and national security of the United States. SC is the Nation's largest Federal sponsor of basic research in the physical sciences and the lead Federal agency supporting fundamental scientific research for our Nation's energy future.

Early Career Research Program opportunities exist in the following SC research programs. Additional details about each program, websites, and technical points of contacts are provided in the FOA. A. Advanced Scientific Computing Research (ASCR); B. Basic Energy Sciences (BES); C. Biological and Environmental Research (BER); D. Fusion Energy Sciences (FES); E. High Energy Physics (HEP); F. Nuclear Physics (NP); G. Isotope R&D and Production (DOE IP); and H. Accelerator R&D and Production (ARDAP)

**Awards:** Anticipated available funding: \$100,000,000

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

**Submission Deadline:** Submission Deadline for Pre-Applications: November 20, 2020 at 5:00 PM Eastern Time A Pre-Application is required Pre-Application Response Date: December 17, 2020 Submission Deadline for Applications: February 16, 2021 at 5:00 PM Eastern Time

**Contact:** Area contacts are listed in the FOA. Additional contact: [SC.Early@science.doe.gov](mailto:SC.Early@science.doe.gov)

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### **Grant Program: Connected Communities**

**Agency:** Department of Energy DE-FOA-0002206

**Website:** <https://eere-exchange.energy.gov/#FoaId9d24afcd-e292-4ea2-a4d3-d36e2b9dd9c7>

**Brief Description:** A Connected Community (CC) is a group of grid-interactive efficient buildings GEB with diverse, flexible end use equipment and other distributed energy resources (DERs) that collectively work to maximize building, community, and grid efficiency. Under this FOA, DOE will select a portfolio of "Connected Community" projects totaling up to \$65 million in varying climates, geographies, building types, building vintages, DERs utility/grid/regulatory structures and resource bases. Through funding these projects, DOE hopes to find and share technical and market solutions that will increase demand flexibility and energy efficiency.

**Awards:** Anticipated available funding: \$65,000,000

**Letter of Intent:** Concept Paper Submission Deadline: 2/17/2021 5:00 PM ET

**Submission Deadline:** Full Application Submission Deadline: 3/3/2021 5:00 PM ET

**Contact:** [EERE-ExchangeSupport@hq.doe.gov](mailto:EERE-ExchangeSupport@hq.doe.gov)

For questions about the Exchange System or submitting an application through Exchange. Include FOA name and number in subject line; • [CCPilotsFOA@ee.doe.gov](mailto:CCPilotsFOA@ee.doe.gov) For questions regarding the Connected Communities FOA

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[NASA](#)

**Grant Program: Heliophysics Environmental and Radiation Measurement Experiment Suite (HERMES) Interdisciplinary Science Teams**

**Agency:** NASA NNH20ZDA001N-HIDS

**Website:** <https://nspires.nasaprs.com/external/solicitations/summary.do?solId=%7BD70A2E61-DEF0-5CBA-CDDF-BC94D4D2C88E%7D&path=&method=init>

**Brief Description:** This program element is for the Heliophysics Environmental and Radiation Measurement Experiment Suite (HERMES) Interdisciplinary Science (IDS) Teams that propose investigations that address HERMES Objectives (Section 1.2) using data products from HERMES and from other sources. This program element solicits proposals for HERMES Interdisciplinary Science Teams (HIDS) that will conduct science investigations addressing the HERMES science objectives and additional science objectives enabled by HERMES observations at Gateway, using HERMES data products. Other data sources are allowed. These investigations should have as one of their goals the timely production of results of importance to HERMES.

**Awards:** Various

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

**Proposal Deadline:** HIDS Step-1 Proposal due: Jan 07, 2021. Step-2 proposals: due February 25, 2021.

**Contact:** James Spann Heliophysics Division Science Mission Directorate NASA Headquarters Washington, DC 20546-0001 Telephone: 202-358-0574 Email: [jim.spann@nasa.gov](mailto:jim.spann@nasa.gov)

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**Grant Program: ROSES 2020: Future Investigators in NASA Earth and Space Science and Technology**

**Agency:** NASA NNH20ZDA001N-FINESST

**Website:** <https://nspires.nasaprs.com/external/solicitations/summary.do?solId=%7B3E72ED7E-1FBD-F815-5A4E-2DA033EF7449%7D&path=&method=init>

**Brief Description:** The Future Investigators in NASA Earth and Space Science and Technology (FINESST) is a program element in Research Opportunities in Space and Earth Sciences (ROSES)-2020. ROSES is an "omnibus" solicitation, having default guidelines and information in the ROSES Summary of Solicitation that apply to all of ROSES, including this program element. Through FINESST, the Science Mission Directorate (SMD) solicits proposals from accredited U.S. universities and other eligible organizations for graduate student-designed and performed research projects that contribute to SMD's science, technology, and exploration goals. The Future Investigator (FI) i.e., the student participant, shall have the primary initiative to define the proposed FINESST research project and must be the primary author, with input or supervision from the proposal's Principal Investigator (PI), as appropriate. In cases when the PI already has an ongoing research award from NASA, the research proposed under FINESST may address a similar topic, but the proposal should make clear how the proposed research goes beyond what NASA has already agreed to support.

**Awards:** No dedicated budget; selected proposals will be funded by the relevant SMD Division or program.

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

**Proposal Deadline:** ASTRO20 Proposals Due Feb 04, 2021

EARTH20 Proposals Due Feb 04, 2021

HELIO20 Proposals Due Feb 04, 2021

PLANET20 Proposals Due Feb 04, 2021

**Contact:** FINESST Program Scientists by Division: Earth Science: [allison.k.leidner@nasa.gov](mailto:allison.k.leidner@nasa.gov)

Planetary Science: [lindsay.hays@nasa.gov](mailto:lindsay.hays@nasa.gov)

Astrophysics: [hannah.jang-condell@nasa.gov](mailto:hannah.jang-condell@nasa.gov)

Heliophysics: [madhulika.guhathakurta@nasa.gov](mailto:madhulika.guhathakurta@nasa.gov)

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## **National Endowment of Humanities**

### **Grant Program: Collaborative Research**

**Agency: National Endowment for the Humanities 20201202-RZ**

**Website:** <https://www.neh.gov/grants/research/collaborative-research-grants>

**Brief Description:** Debate, exchange of ideas, and working together—all are basic activities that advance humanities knowledge and foster rich scholarship that would not be possible by researchers working on their own. The Collaborative Research program aims to advance humanistic knowledge through sustained collaboration between two or more scholars. Collaborators may be drawn from a single institution or several institutions across the United States; up to half of the collaborators may be based outside of the U.S. The program encourages projects that propose diverse approaches to topics, incorporate multiple points of view, and explore new avenues of inquiry in the humanities.

The program allows projects that propose research in a single field of study, as well as interdisciplinary work. Projects that include partnerships with researchers from the natural and social sciences are encouraged but must employ a humanistic research agenda. Partnerships among different types of institutions are welcome as well as new collaborations with international partners.

Proposed projects must aim to result in tangible and sustainable outcomes, for example, co-authored or multi-authored books; born-digital publications; themed issues of peer-reviewed journals; a series of peer-reviewed articles; and open-access scholarly digital resources. All project outcomes must incorporate interpretive work and collaboration to address significant humanities research questions.

**Award:** Maximum award amount: Up to \$250,000 (depending on funding category).

**Proposal Deadline:** Optional Draft due October 15, 2020; Application due December 2, 2020

**Contact:** Contact the Division of Research Programs Team; 202-606-8200; [collaborative@neh.gov](mailto:collaborative@neh.gov)

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### **Grant Program: Digital Humanities Advancement Grants**

**Agency: National Endowment for the Humanities 20210115-HAA**

**Website:** <https://www.neh.gov/grants/odh/digital-humanities-advancement-grants>

**Brief Description:** Digital Humanities Advancement Grants (DHAG) support innovative, experimental, and/or computationally challenging projects at different stages throughout their lifecycles, from early start-up phases through implementation and sustainability. Experimentation, reuse, and extensibility are hallmarks of this program, leading to innovative work that can scale to enhance scholarly research, teaching, and public programming in the humanities. This program is offered twice per year. Proposals are welcome for digital initiatives in any area of the humanities.

In support of its efforts to advance digital infrastructures and initiatives in libraries and archives, and subject to the availability of funds and IMLS discretion, the [Institute of Museum and Library Services](#) (IMLS) anticipates providing funding through this program. These funds may support some DHAG projects that further the IMLS mission to advance, support, and empower America's museums, libraries, and related organizations. IMLS funding will encourage innovative collaborations between library and archives professionals, humanities professionals, and relevant public communities that advance preservation of, access to, and public engagement with digital collections and services to empower community learning, foster civic cohesion, and strengthen knowledge networks.



**Award:** Maximum award amount: Level I: \$50,000; Level II: \$100,000; Level III: \$325,000 in outright funds, with an additional \$50,000 in matching funds

**Proposal Deadline:** Optional Draft due: December 1, 2020: Application due: January 15, 2021

**Contact:** Contact the Office of Digital Humanities Team [odh@neh.gov](mailto:odh@neh.gov)

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## **Private Foundations**

### **Robert Wood Johnson Foundation (RWJF)**

**Grant Program: Health Data for Action: (Data Access Award)**

**Agency: Robert Wood Johnson Foundation**

**Website:** <https://www.rwjf.org/en/library/funding-opportunities/2020/health-data-for-action-data-access-award.html>

**Brief Description:** HD4A aims to reduce the barriers often faced in accessing rich data by serving as a conduit between data owners and interested researchers. Through this HD4A call for proposals (CFP), RWJF will make valuable data from unique data owners available to researchers.

The purpose of the 2020 HD4A CFP is primarily to award data access at no cost from one of eight anticipated data providers to successful applicants. Most selected projects will not receive a financial award for personnel or other project-related costs. However, limited funding up to \$100,000 per project is available for a small number of projects from principal investigators who have not previously received external research funding. The HD4A program will support innovative research that uses the available data to answer important research questions. Applicants under this CFP will write a proposal for a research study using data from one of the following anticipated data providers including: athenahealth; CareJourney VRDC T-MSIS Research Collaborative; the Center for Improving Value in Health Care (CIVHC); Geisinger; the Health Care Cost Institute (HCCI); HealthShare Exchange (HSX); OCHIN ADVANCE Collaborative; and TransUnion.

Eligible research projects can focus on a variety of topics, including health care utilization and spending; benefit design; quality of care; prescribing patterns and medication adherence; chronic disease; maternal and child care; complex conditions; employer-sponsored insurance; public and private insurance; consolidation; integration, and market competition; social determinants of health and disparities; COVID-19 patient characteristics and outcomes; financial distress; mental health; housing instability; opioid use and treatment; and geographic variation in health.

**Awards:** Up to \$600,000 will be available, to support up to six awards.

**Proposal Deadline:** December 17, 2020 (3 p.m. ET): Deadline for receipt of brief proposals.\*

March 4, 2021: Applicants notified whether invited to submit full proposals.

April 15, 2021 (3 p.m. ET): Deadline for receipt of full proposals.\*

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

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**Grant Program: Pioneering Ideas: Exploring the Future to Build a Culture of Health**

**Agency: Robert Wood Johnson Foundation**

**Website:** <https://www.rwjf.org/en/library/funding-opportunities/2020/pioneering-ideas-2020-exploring-the-future-to-build-a-culture-of-health.html>

**Brief Description:** Pioneering Ideas: Exploring the Future to Build a Culture of Health seeks proposals that are primed to influence health equity in the future. We are interested in ideas that address any of these

four areas of focus: Future of Evidence; Future of Social Interaction; Future of Food; Future of Work. Additionally, we welcome ideas that might fall outside of these four focus areas, but which offer unique approaches to advancing health equity and our progress toward a Culture of Health. We want to hear from scientists, anthropologists, artists, urban planners, community leaders—anyone, anywhere who has a new or unconventional idea that could alter the trajectory of health, and improve health equity and well-being for generations to come. The changes we seek require diverse perspectives and cannot be accomplished by any one person, organization or sector.

**Awards:** The average Pioneer grant in 2019 was \$315,031.

**Proposal Deadline:** Proposals will be accepted throughout the year on a rolling admission.

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