

NJIT Research Newsletter

Issue: ORN-2021-03

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 – I-Corps Site Mini-Grant

Have a great technology concept?

Need funds to explore the commercialization pathways?

<https://judithsheft.wufoo.com/forms/rjntz01wt0ujs/>

NJIT has been designated as an NSF I-Corps Site and through the NJIT School of Management and NJ Center for Innovation Acceleration, we will provide specialized training and mini grants of up to \$3,000 to teams interested in exploring the commercial viability of their ideas for products and businesses that are based on their own inventions or NJIT intellectual property. Do you have an exciting technology that

works in the lab? Would you like help to start a company to commercialize the technology? Do you want to test a prototype in the real-world environment?

Benefits: Learn the lean start up methodology – an approach that has significant advantages over traditional business planning / new product development approaches. Get out of the building and spend the majority of your time talking to potential customers to discover how your technology could effectively ‘solve’ customers’ unmet needs or pain points Make connections with experienced entrepreneurs and investors that can lead to potential follow-on support or collaboration

Eligibility: I-Corps mini grants are available to teams made up NJIT students and faculty. Each team must have:

- an entrepreneurial lead (typically an NJIT undergraduate or graduate student(s))
- an academic lead researcher/advisor (faculty member)
- a business mentor with significant entrepreneurial business experience.

The NJIT I-Corps Program Manager (Dr. Michael Ehrlich) will provide assistance to complete teams as necessary. You must have at least 2 teams members identified to apply. All team members must be able to participate for the 6-month project duration.

Deadlines: Deadline for Submissions: February 4, 2021

Interviews of Finalists: February 8-12, 2021

Announcement of Awards – February 17, 2021

Mandatory Team Orientation – February 24, 2021 (Common Hour)

Other Mandatory Sessions: March 24th, April 21st, and May 19th, 2021

Final Report Due: September 17, 2021

Questions: Please Contact: Dr. Michael Ehrlich – NJIT School of Management and Director of the Leir Research Institute and NJ Innovation Acceleration Center - ehrllich@njit.edu – you can also apply at: <http://centers.njit.edu/icorp/>

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: Designing Accountable Software Systems (DASS); Enabling Quantum Leap: Quantum Interconnect Challenges for Transformational Advances in Quantum Systems (QuIC-TAQS); Innovation Corps - National Innovation Network Teams Program (I-CorpsTM Teams); Cyber-Physical Systems (CPS); NSF Scholarships in Science, Technology, Engineering, and Mathematics (S-STEM); Center for Advancement and Synthesis of Open Environmental Data and Sciences; Future of Work at the Human-Technology Frontier: Core Research (FW-HTF); Geomorphology and Land-use Dynamics (GLD); Enabling Discovery through GENomics (EDGE); Dimensions of Biodiversity FY202

NIH: Biomedical Research Facilities (C06); BRAIN Initiative: New Concepts and Early-Stage Research for Recording and Modulation in the Nervous System (R21); Regulation of Brain Regional and Cell Type Specific Proteome Dynamics in Aging and Alzheimer's Disease (R01); Research Experience in Genomic Research for Data Scientists (R25); Application of Artificial Intelligence and Machine Learning for Advancing Environmental Health Sciences (R43 and R41)

Department of Defense/US Army/DARPA/ONR: National Defense Education Program (NDEP) for STEM; Research Interests of the United States Air Force Academy; Data and Analysis Center (DAC); Ultra-wide Bandgap RF Electronics Center Fiscal Year 2022; Synthetic Biology; Science & Technology for Advanced Manufacturing Projects (STAMP)

Department of Transportation: INFRA Grants

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

Department of Labor: Workforce Pathways for Youth Grant Program

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

EPA: Training and Technical Assistance to Improve Water Quality

Department of Energy: Fossil Energy Based Production, Storage, Transport and Utilization of Hydrogen Approaching Net-Zero or Net-Negative Carbon Emissions; Materials and Chemical Sciences Research for Quantum Information Science

NASA: ROSES 2020: Heliophysics Flight Opportunities in Research and Technology; ROSES 2020: In-Space Validation of Earth Science Technologies

National Endowment of Humanities: Research and Development Awards for Faculty

Private Foundations: American Heart Foundation: Career Development Award; JDRF: National Diabetes Psychology Fellowship Program

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[Recent Research Grant and Contract Awards](#)

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

PI: Wen Zhang (PI)

Department: Civil and Environmental Engineering

Grant/Contract Project Title: Bench Scale study to identify the major factors influencing arsenic removal in municipal wastewater by coagulation and filtration treatments
Funding Agency: NJ Dept of Environmental Protection
Duration: 01/01/21-07/01/22

PI: Ju Jing (PI) and Chang Liu (Co-PI)
Department: Center for Solar Terrestrial Research
Grant/Contract Project Title: Magnetic Reconnection Rate and Its Implications for Fast Reconnection Onset in Solar Flares and Magnetopause
Funding Agency: NASA
Duration: 10/02/20-10/01/24

PI: Bin Chen (PI)
Department: Center for Solar Terrestrial Research
Grant/Contract Project Title: CAREER: Probing Energy Release in Solar Explosive Events with New Generation Radio Telescopes
Funding Agency: NSF
Duration: 01/15/17-12/31/21

PI: Lou Kondic (PI)
Department: Mathematical Sciences
Grant/Contract Project Title: Stick-Slip Dynamics and Failure in Granular Materials
Funding Agency: U.S. Army (Army Research Office)
Duration: 07/15/18-07/14/21

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[In the News...](#)

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

DOD's Cybersecurity Certification Requirements to Appear in DHS Contracts: The Department of Defense is figuring out how to incorporate its Cybersecurity Maturity Model Certification program in contracts offered by the Department of Homeland Security, according to the official helming the initiative. The CMMC program will ultimately require all defense contractors have their cybersecurity practices certified by a system of independent third party auditors. As it is now, companies simply pledge their adherence to security controls detailed in standards issued by the National Institute of Standards and Technology. Rules to implement the program are expected to be finalized as early as next month and have caused some [heartburn](#) within the contracting community. But the program is being rolled out in phases—15 prime contractors, and all their subcontractors, are being selected to undergo assessments this year—and won't be fully applicable until 2025. More information is posted on the [NextGov website](#).

CISA Warns of Vulnerabilities in Cloud Use, Shares Solutions List: The Cybersecurity and Infrastructure Security Agency shared 21 bullet points—more for organizations using Microsoft's Office 365—for diminishing the extent to which adversaries are taking advantage of challenging-to-secure cloud

configurations. [Analysis CISA issued](#) Wednesday draws from incidents the agency has responded to where indicators of compromise show threat actors effectively targeting organizations' use of the cloud with techniques such as phishing.

While CISA has been responding to federal agencies and private-sector organizations dealing with the fallout from the hacking campaign associated with the compromise of software from IT management firm SolarWinds, the agency noted that the analysis is not explicitly related to that specific threat actor. CISA "is aware of several recent successful cyberattacks against various organizations' cloud services," the analysis reads. "Threat actors are using phishing and other vectors to exploit poor cyber hygiene practices within a victims' cloud services configuration."

The term "cyber hygiene" is meant to capture the lowest-common-denominator things organizations can do to protect their systems from unauthorized access. But remote working conditions necessitated by the pandemic are raising that bar for organizations and highlighting the complexity involved in securely navigating cloud environments.

More information and the report is posted on <https://us-cert.cisa.gov/ncas/analysis-reports/ar21-013a>.

Federal Data Strategy: The Federal Data Strategy is an important framework that stitches together a number of different legislative and administrative initiatives into a coherent whole:

- the [GPRM Modernization Act of 2010](#)
- open data initiatives, such as data.gov
- the [Digital Accountability and Transparency \(DATA\) Act](#)
- the [Grant Reporting Efficiency and Agreements Transparency \(GREAT\) Act](#)
- the [Foundations in Evidence-Based Policymaking Act](#), which includes the designation of chief data officers and agency evaluation officers, and the creation of agency learning agendas.
- the efforts of external advocates for data sharing and usage such as the [Data Coalition](#) and [Results for America](#)

The Federal Data Strategy includes a 10-year roadmap for federal agencies and it is [on the verge](#) of releasing its 2021 action plan. While many of these federal-level initiatives rely on state and local data components, the current COVID pandemic demonstrates the need for a much more proactive intergovernmental data sharing strategy, per Wiseman.

In her report, Wiseman showcases a number of successful initiatives that demonstrate the value of investing in data sharing efforts at the federal, state, and local levels, linking data from multiple sources across agency and jurisdictional boundaries. Three noteworthy initiatives include:

State Department's use of data to repatriate Americans stranded overseas during the pandemic. In January 2020, the data team at State began to bring together data from disparate public and private sources to create real-time information updates for department leadership on how to bring Americans home safely, first from Wuhan, China, and then from outposts around the globe. Under the leadership of Janice deGarmo, the department's acting chief data officer, the data team quickly brought together all the data it could to help understand, monitor, and respond to the crisis, both from across the department and from external sources. Applying lessons from the Ebola outbreak, it synthesized data from CDC, Homeland Security, Customs and Border Protection, publicly available information, and State's own on the ground intelligence to help repatriate both employees and others needing help. [This effort](#) led to the safe repatriation of over 100,000 Americans from 136 countries on over 1,100 flights working with embassies and consulates in every corner of the globe.

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Webinar and Events

Event: MCB Virtual Office Hour: Planning Conferences on Information Synthesis

Sponsor: NSF

When: January 27, 2021, 2.00 PM – 3.00 PM

Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=301948&org=NSF

Brief Description: Please join us for our Virtual Office Hour to learn about ongoing and new opportunities at the National Science Foundation and the Division of Molecular and Cellular Biosciences (MCB)! This Office Hour will be Wednesday, January 27 from 2-3pm EST, where we will discuss “*Planning Conferences on Information Synthesis in Molecular and Cellular Bioscience*,” followed by an open Q&A session. Questions should also be broad and of potential interest to others.

To Join the Webinar: Please register [here](#).

Event: Overview of Secure and Trustworthy Cyberspace Program

Sponsor: NSF

When: January 29, 2021, 1.00 PM – 2.00 PM

Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=301957&org=NSF

Brief Description: The Division of Mathematical Sciences (DMS) is hosting a webinar to provide an overview of the NSF Secure and Trustworthy Cyberspace (SaTC) program.

Traditionally, mathematics and statistics have played a key role in the implementation of cryptographic systems, both in their design and in analysis of their vulnerability to cryptanalytic attack. Today, the range of activities in the cybersecurity domain has broadened and includes aspects of privacy and analysis of a host of other vulnerabilities for which the expertise of researchers in DMS disciplines is needed. The SaTC program welcomes proposals for projects that draw on expertise in algebra and number theory, combinatorics, computational mathematics, statistics, applied mathematics, and probability, as well as other disciplines. Proposals that advance the field of cybersecurity and privacy within a single discipline or interdisciplinary efforts that span multiple disciplines are both welcome.

The goals of the SaTC program are aligned with the National Science and Technology Council’s (NSTC) Federal Cybersecurity Research and Development Strategic Plan (RDSP) and National Privacy Research Strategy (NPRS) to protect and preserve the growing social and economic benefits of cyber systems while ensuring security and privacy. The RDSP identified six areas critical to successful cybersecurity research and development:

- scientific foundations;
- risk management;
- human aspects;
- transitioning successful research into practice;
- workforce development; and
- enhancing the research infrastructure.

The NPRS, which complements the RDSP, identifies a framework for privacy research, anchored in characterizing privacy expectations, understanding privacy violations, engineering privacy-protecting systems, and recovering from privacy violations. In alignment with the objectives in both strategic plans, the SaTC program takes an interdisciplinary, comprehensive, and holistic approach to cybersecurity research, development, and education, and encourages the transition of promising research ideas into practice.

To Join the Webinar: Participants should register (and may do so in advance) at the web page

https://nsf.zoomgov.com/webinar/register/WN_iHlqu-YKSmCDs5uLaN-2OA

Event: Build and Broaden 2.0 Informational Webinar**Sponsor: NSF****When: January 22, 2021, 2020 2.00 AM – 3.30 PM****Website:** https://www.nsf.gov/events/event_summ.jsp?cntn_id=301828&org=NSF**Brief Description:** Please join NSF's Directorate for Social, Behavioral and Economic Sciences (SBE) for an informational webinar about the Build and Broaden 2.0 program.

The [Build and Broaden program](#) supports cutting-edge research, training opportunities and new research infrastructure in the social, behavioral and economic sciences at minority-serving institutions, including historically Black colleges and universities, Hispanic-serving institutions and tribal colleges and universities.

This event will feature:

- Remarks by SBE Assistant Director Dr. Arthur Lupia and SBE Deputy Assistant Director Dr. Kellina Craig-Henderson
- Presentations from SBE program directors about the Build and Broaden 2.0 program and solicitation
- A Q&A session for participants to ask questions

To Join the Webinar: Please register at [Build and Broaden 2.0 ZoomGov Webinar Registration link](#).[Back to Contents](#)

[Grant Opportunities](#)

[National Science Foundation](#)

Grant Program: Designing Accountable Software Systems (DASS)**Agency: National Science Foundation NSF 21-554****RFP Website:** <https://www.nsf.gov/pubs/2021/nsf21554/nsf21554.htm>

Brief Description: The Designing Accountable Software Systems (DASS) program solicits foundational research aimed towards a deeper understanding and formalization of the bi-directional relationship between software systems and the complex social and legal contexts within which software systems must be designed and operate. The DASS program aims to bring researchers in computer and information science and engineering together with researchers in law and social, behavioral, and economic sciences to jointly develop rigorous and reproducible methodologies for understanding the drivers of social goals for software and for designing, implementing, and validating accountable software systems. DASS will support well-conceived collaborations between these two groups of researchers. The first group consists of researchers in software design, which, for the purposes of this solicitation, is broadly defined as formal methods, programming languages, software engineering, requirements engineering and human-centered computing. The second group consists of researchers in law and the social, behavioral, and economic sciences, who study social systems and networks, culture, social norms and beliefs, rules, canons, precedents, legal code, and routine procedures that govern the conduct of people, organizations, and countries.

Proposals for this program must create general advances in both (1) understanding the social, behavioral, economic and/or legal context of software design; and (2) improving the methodology for designing accountable software beyond specific use cases. Each proposal must have at least one Principal Investigator (PI) or co-PI with expertise in software design and at least one PI with expertise in law or a social, behavioral, or economic science. All proposals must contain a detailed collaboration plan that

leverages the complementary expertise of the PIs/co-PIs in the designated areas and describes the mechanisms for continuous bi-directional collaboration. Projects are limited to \$750,000 in total budget, with durations of up to three years.

Awards: Standard Grant or Continuing Grant; Anticipated Funding Amount: \$7,500,000

Letters of Intent: Not required

Preliminary Proposal Due Date(s) (required) (due by 5 p.m. submitter's local time): April 19, 2021

Contacts: Nina Amla, Program Director, CISE/CCF, telephone: (703) 292-7991, email: dass@nsf.gov

- Anindya Banerjee, Program Director, CISE/CCF, telephone: (703) 292-7885, email: dass@nsf.gov
 - Daniel R. Cosley, Program Director, CISE/IIS, telephone: (703) 292-8832, email: dass@nsf.gov
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Grant Program: Enabling Quantum Leap: Quantum Interconnect Challenges for Transformational Advances in Quantum Systems (QuIC-TAQS)

Agency: National Science Foundation NSF 21-553

RFP Website: <https://www.nsf.gov/pubs/2021/nsf21553/nsf21553.htm>

Brief Description: The Quantum Interconnect Challenges for Transformational Advances in Quantum Systems (QuIC - TAQS) program is designed to support interdisciplinary teams that will explore highly innovative, original, and potentially transformative ideas for developing and applying quantum science, quantum computing, and quantum engineering in the specific area of quantum interconnects. Quantum interconnects are an integral part of all aspects of quantum information science. Proposals should have the potential to deliver new concepts, new platforms, and/or new approaches that will implement the transfer of quantum states efficiently across platforms and over large length scales. Progress in the area of quantum interconnects will enable breakthroughs in quantum sensing, quantum communications, quantum simulations, and quantum computing systems. This Quantum Interconnect Challenges solicitation will support the process of translating such ideas into reality.

This solicitation calls for proposals focused on interdisciplinary research that enhances the development of quantum interconnects (QuIC) that would allow the transfer of quantum states between different physical states and/or different physical systems. Proposals must articulate how the project leverages and/or promotes advances in quantum interconnects. Proposals should be innovative and must focus on quantum functionality and must result in experimental demonstrations and/or transformative advances towards quantum systems and/or proof-of-concept validations. Competitive proposals will come from an interdisciplinary research team led by at least three investigators who collectively contribute synergistic expertise from a subset of the following domains: engineering, mathematics, computational science, computer/information science, physical, chemical, biological, material science. Proposals will be judged on how likely the integrated effort is to lead to transformative advances in quantum interconnection.

Awards: Standard Grant or Continuing Grant; Anticipated Funding Amount: \$25,000,000

Letters of Intent: Not required

Preliminary Proposal Due Date(s) (required) (due by 5 p.m. submitter's local time): April 12, 2021

Full Proposal Deadline(s) (due by 5 p.m. submitter's local time): June 14, 2021

Limit on Number of Proposals per Organization: 1

Contacts: Quantum Interconnects, telephone: (703) 292-2980, email: quic@nsf.gov

Grant Program: Innovation Corps - National Innovation Network Teams Program (I-Corps™ Teams)

Agency: National Science Foundation NSF 21-552

RFP Website: <https://www.nsf.gov/pubs/2021/nsf21552/nsf21552.htm>

Brief Description: The I-Corps Program utilizes experiential learning of customer and industry discovery, coupled with first-hand investigation of industrial processes, to quickly assess the translational potential of inventions. The I-Corps Program is designed to support the commercialization of "deep technologies," those revolving around fundamental discoveries in science and engineering. The I-Corps Program addresses the skill and knowledge gaps associated with the transformation of basic research into deep technology ventures (DTVs).

The purpose of the I-Corps Teams program is to identify NSF-funded researchers to receive additional support in the form of entrepreneurial education, mentoring, and funding to accelerate the translation of knowledge derived from fundamental research into emerging products and services that may attract subsequent third-party funding. The outcomes of I-Corps Teams' projects are threefold: 1) a decision on a clear path forward based on an assessment of the business model, 2) substantial first-hand evidence for or against product-market fit, with the identification of customer segments and corresponding value propositions, and 3) a narrative of a technology demonstration for potential partners.

Awards: Standard Grant; Anticipated Funding Amount: \$10,000,000 to \$12,750,000

Letters of Intent: Not required

Proposal Submission Deadline: Proposals Accepted Anytime

Contacts: Andre W. Marshall, Program Director, ENG/IIP, telephone: (703) 292-2257, email: awmarsha@nsf.gov

- Ruth M. Shuman, Program Director, ENG/IIP, telephone: (703) 292-2160, email: rshuman@nsf.gov
- Rebecca Shearman, Program Director, CISE/CNS, telephone: (703) 292-7403, email: rshearman@nsf.gov

Grant Program: Cyber-Physical Systems (CPS)

Agency: National Science Foundation NSF 21-551

RFP Website: <https://www.nsf.gov/pubs/2021/nsf21551/nsf21551.htm>

Brief Description: Cyber-physical systems (CPS) are engineered systems that are built from, and depend upon, the seamless integration of computation and physical components. Advances in CPS will enable capability, adaptability, scalability, resiliency, safety, security, and usability that will expand the horizons of these critical systems. CPS technologies are transforming the way people interact with engineered systems, just as the Internet has transformed the way people interact with information. New, smart CPS drive innovation and competition in a range of application domains including agriculture, aeronautics, building design, civil infrastructure, energy, environmental quality, healthcare and personalized medicine, manufacturing, and transportation. CPS are becoming data-rich enabling new and higher degrees of automation and autonomy. Traditional ideas in CPS research are being challenged by new concepts emerging from artificial intelligence and machine learning. The integration of artificial intelligence with CPS especially for real-time operation creates new research opportunities with major societal implications.

While tremendous progress has been made in advancing CPS technologies, the demand for innovation across application domains is driving the need to accelerate fundamental research to keep pace. At the same time, the CPS program seeks to open new vistas for the research community to think beyond the usual cyber-physical paradigms and structures and propose creative ideas to address the myriad challenges of today's systems as well as those of the future that have not yet been designed or fielded.

The CPS program aims to develop the core research needed to engineer these complex CPS, some of which may also require dependable, high-confidence, or provable behaviors. Core research areas of the program include control, data analytics, and machine learning including real-time learning for control,

autonomy, design, Internet of Things (IoT), mixed initiatives including human-in- or human-on-the-loop, networking, privacy, real-time systems, safety, security, and verification. By abstracting from the particulars of specific systems and application domains, the CPS program seeks to reveal cross-cutting, fundamental scientific and engineering principles that underpin the integration of cyber and physical elements across all application domains. The program additionally supports the development of methods, tools, and hardware and software components based upon these cross-cutting principles, along with validation of the principles via prototypes and testbeds. This program also fosters a research community that is committed to advancing education and outreach in CPS and accelerating the transition of CPS research into the real world.

NSF is working closely with multiple agencies across the federal government, including the U.S. Department of Homeland Security (DHS) Science and Technology Directorate (S&T); the U.S. Department of Transportation (DOT) Federal Highway Administration (FHWA); several National Institutes of Health (NIH) institutes and centers including the National Institute of Biomedical Imaging and Bioengineering (NIBIB), National Cancer Institute (NCI), Office of Behavioral and Social Sciences Research (OBSSR), and National Center for Advancing Translational Sciences (NCATS); and the U.S. Department of Agriculture National Institute of Food and Agriculture (USDA NIFA, hereafter referred to as NIFA).

Awards: Standard Grant or Continuing Grant or Cooperative Agreement; Anticipated Funding Amount: \$32,400,000

Proposals for three classes of research and education projects—differing in scope and goals—are supported through the CPS program:

- **Small** projects may request a total budget of up to \$500,000 for a period of up to 3 years. They are well suited to emerging new and innovative ideas that may have high impact on the field of CPS. **There is no deadline for Small projects.**
- **Medium** projects may request a total budget ranging from \$500,001 to \$1,200,000 for a period of up to 3 years. They are well suited to multi-disciplinary projects that accomplish clear goals requiring integrated perspectives spanning the disciplines. **There is no deadline for Medium Projects.**
- **Frontier** projects must address clearly identified critical CPS challenges that cannot be achieved by a set of smaller projects. Furthermore, Frontier projects should also look to push the boundaries of CPS well beyond today's systems and capabilities. Funding may be requested for a total of \$1,200,001 to \$7,000,000 for a period of 4 to 5 years. **Note that the Frontier projects have a specific deadline.**

Letters of Intent: Not required

Proposal Submission Deadline:

December 01, 2021 - December 15, 2021: FRONTIER proposals

Proposals Accepted Anytime beginning January 8, 2021: SMALL and MEDIUM Proposals

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

- Linda Bushnell, Program Director, CISE/CNS, telephone: (703) 292-8950, email: lbushnel@nsf.gov
- Sandip Roy, Program Director CISE/CNS, telephone: (703) 292-8950, email: saroy@nsf.gov
- Wendy Nilsen, Program Director, CISE/IIS, telephone: (703) 292-2568, email: wnilsen@nsf.gov

Grant Program: NSF Scholarships in Science, Technology, Engineering, and Mathematics (S-STEM)

Agency: National Science Foundation NSF 21-550

RFP Website: <https://www.nsf.gov/pubs/2021/nsf21550/nsf21550.htm>

Brief Description: The main goal of the S-STEM program is to enable low-income, talented domestic students to pursue successful careers in promising STEM fields. Ultimately, the S-STEM program wants to increase the number of low-income students who graduate and contribute to the American innovation economy with their STEM knowledge. Recognizing that financial aid alone cannot increase retention and graduation in STEM, the program provides awards to Institutions of Higher Education (IHEs) to fund scholarships and to adapt, implement, and study effective evidence-based curricular and co-curricular activities that support recruitment, retention, transfer (if appropriate), student success, academic/career pathways, and graduation in STEM.

The program seeks to 1) increase the number of low-income academically talented students with demonstrated financial need obtaining degrees in S-STEM eligible disciplines and entering the US workforce or graduate programs in STEM; 2) improve support mechanisms for future scientists, engineers, and technicians, with a focus on low-income academically talented students with demonstrated financial need; and 3) advance our understanding of how interventions or evidence-based curricular and co-curricular activities affect the success, retention, transfer, academic/career pathways, and graduation of low-income students in STEM.

The S-STEM program encourages collaborations among different types of participating groups, including but not limited to partnerships among different types of institutions; collaborations of STEM faculty and institutional, educational, and social science researchers; and partnerships among institutions of higher education and business, industry, local community organizations, national labs, or other federal or state government organizations, if appropriate.

Scholars must be domestic low-income, academically talented students with demonstrated unmet financial need who are enrolled in an associate, baccalaureate or graduate degree program in an S-STEM eligible discipline. Proposers must provide an analysis that articulates the population of students they are trying to serve. This analysis must include the predicted number of students who meet all the eligibility requirements at the time of proposal submission as a proxy measure of the pool of students that would qualify in the future if the proposal is awarded. This number may be based on current and/or historical data about students who are currently pursuing degrees in the STEM disciplines targeted by the proposal.

S-STEM Eligible Degree Programs

- Associate of Arts, Associate of Science, Associate of Engineering, and Associate of Applied Science
- Bachelor of Arts, Bachelor of Science, Bachelor of Engineering and Bachelor of Applied Science
- Master of Arts, Master of Science and Master of Engineering
- Doctoral

S-STEM Eligible Disciplines

- Biological sciences (except medicine and other clinical fields)
- Physical sciences (including physics, chemistry, astronomy, and materials science)
- Mathematical sciences
- Computer and information sciences
- Geosciences
- Engineering
- Technology fields associated with the disciplines above (e.g., biotechnology, chemical technology, engineering technology, information technology)

Awards: Standard Grant or Continuing Grant; Anticipated Funding Amount: \$80,000,000 to \$115,000,000

The program supports four types of projects subject to availability of funds:

- Awards for Track 1 (Institutional Capacity Building) projects may not exceed \$750,000.
- Awards for Track 2 (Implementation: Single Institution) projects may not exceed \$1.5 million.

- Awards for Track 3 (Inter-institutional Consortia) projects may not exceed \$5.0 million.
- Collaborative Planning projects may not exceed \$150,000.

Letters of Intent: Not required

Proposal Submission Deadline: April 07, 2021; Track 1, 2, 3 and Collaborative Planning grants

Limit on Number of Proposals per Organization: An institution may submit one proposal (either as a single institution or as subawardee or a member of an Inter-institutional Consortia project) from each constituent school or college that awards degrees in an S-STEM eligible discipline. The reasoning behind this restriction is that any eligible student must have a clear single S-STEM program where the student can apply for a scholarship. See Additional Eligibility Information below for more details (see IV. Eligibility Information). Institutions with a current S-STEM award should wait at least until the end of the third year of execution of their current award before submitting a new S-STEM proposal focused on students pursuing the same discipline(s).

Contacts: Alexandra Medina-Borja, telephone: (703) 292-7557, email: amedinab@nsf.gov

- Michael J. Ferrara, telephone: (703) 292-2635, email: mferrara@nsf.gov
- Thomas D. Kim, telephone: (703) 292-5111, email: tkim@nsf.gov

Grant Program: Center for Advancement and Synthesis of Open Environmental Data and Sciences
Agency: National Science Foundation NSF 21-549

RFP Website: <https://www.nsf.gov/pubs/2021/nsf21549/nsf21549.htm>

Brief Description: NSF seeks to establish a Center fueled by open and freely available biological and other environmental data to catalyze novel scientific questions in environmental biology through the use of data-intensive approaches, team science and research networks, and training in the accession, management, analysis, visualization, and synthesis of large data sets. The Center will provide vision for speeding discovery through the increased use of large, publicly accessible datasets to address biological research questions through collaborations with scientists in other related disciplines. The Center will be an exemplar in open science and team science, fostering development of generalizable cyberinfrastructure solutions and community-driven standards for software, data, and metadata that support open and team science, and role-modeling best practices. Open biological and other environmental data are produced by NSF investments in research and infrastructure such as the National Ecological Observatory Network (NEON), the Ocean Observatories Initiative (OOI), the Long-Term Ecological Research (LTER) network, National Center for Atmospheric Research (NCAR), Critical Zone Observatories (CZO), Integrated Digitized Biocollections (iDigBio), and the Global Biodiversity Information Facility (GBIF), as well as by many other public and private initiatives in the U.S. and worldwide. These efforts afford opportunities for collaborative investigation into, and predictive understanding of life on Earth to a far greater degree than ever before. The Center will help develop the teams, concepts, resources, and expertise to enable inclusive, effective, and coordinated efforts to answer the broad scientific questions for which these open data were designed, as well as key questions that emerge at interfaces between biology, informatics, and a breadth of environmental sciences. It will engage scientists diverse in their demography, disciplinary expertise, and geography, and in the institutions that they represent in collaborative, cross-disciplinary, and synthetic studies. It is expected that this new Center will build on decades of experience from NSF's prior investments in other synthesis centers, while providing visionary leadership and advancement for data-intensive team science in a highly connected and increasingly virtual world. It will serve as an incubator for team-based, data-driven, and open research that includes cyberinfrastructure, tools, services, and application development and innovative and inclusive training programs. The Center is also expected to spur collaborative interactions among the facilities and initiatives that produce open biological and other environmental data, and cyberinfrastructure efforts that support the curation and use of those data, such as Biological and Chemical Oceanography Data

Management Office (BCO-DMO), CyVerse, Environmental Data Initiative (EDI), DataOne, EarthCube, and Cyberinfrastructure (CI) Centers for Excellence, to address compelling research questions and to enable training and data product and tool development. The new Center will further enable data-driven discovery through immersive education and training experiences to provide the advanced skills needed to maximize the scientific potential of large volumes of available open data.

Awards: Cooperative Agreement; Anticipated Funding Amount: \$20,000,000

Letters of Intent: Required; April 01, 2021

Preliminary Proposal Due Date(s) (*required*) (due by 5 p.m. submitter's local time): April 29, 2021

Full Proposal Deadline(s) (due by 5 p.m. submitter's local time): September 15, 2021

Contacts: Matthew D. Kane, Program Director, BIO/DEB, telephone: (703) 292-7186, email: mkane@nsf.gov

- Reed S. Beaman, Program Director, BIO/DBI, telephone: (703) 292-7163, email: rsbeaman@nsf.gov
- Tevfik Kosar, Program Director, CISE/OAC, telephone: (703) 292-8970, email: tkosar@nsf.gov

Grant Program: Future of Work at the Human-Technology Frontier: Core Research (FW-HTF)

Agency: National Science Foundation NSF 21-548

RFP Website: <https://www.nsf.gov/pubs/2021/nsf21548/nsf21548.htm>

Brief Description: The overarching vision of this program is to support multi-disciplinary research to sustain economic competitiveness, to promote worker well-being, lifelong and pervasive learning, and quality of life, and to illuminate the emerging social and economic context and drivers of innovations that are shaping the future of jobs and work. For the purposes of this solicitation, work is defined as mental or physical activity to achieve tangible benefit such as income, profit, or community welfare. A proposal for a research grant in this program must focus on advancing fundamental understanding of future work and work outcomes for workers and society.

The specific objectives of the Future of Work at the Human-Technology Frontier program are to (1) facilitate multi-disciplinary or convergent research that employs the joint perspectives, methods, and knowledge of behavioral science, computer science, design, economics, engineering, learning sciences, research on adult learning and workforce training, and the social sciences; (2) support deeper understanding of the societal infrastructure that accompanies and leads to new work technologies and new approaches to work and jobs, and that prepares people for the future world of work; (3) encourage the development of a research community dedicated to designing intelligent technologies and work organization and modes inspired by their positive impact on individual workers, the work at hand, the way people learn and adapt to technological change, creative and inclusive workplaces (including remote locations, homes, classrooms, or virtual spaces), and benefits for social, economic, educational, and environmental systems at different scales; (4) promote deeper basic understanding of the interdependent human-technology partnership to advance societal needs by advancing design of intelligent work technologies that operate in harmony with human workers, including consideration of how adults learn the new skills needed to interact with these technologies in the workplace, and by enabling broad and diverse workforce participation, including improving accessibility for those challenged by physical or cognitive impairment; and (5) understand, anticipate, and explore ways of mitigating potential risks including inequity arising from future work at the human-technology frontier.

Proposals to this program should describe multi-disciplinary or convergent research that addresses technological, human, and societal dimensions of future work. Technological innovations should be integrated with advances in behavioral science, computer science, economic science, engineering, learning sciences, research on adult learning and workforce training, and the social sciences. Proposals

that address the impact of large-scale disruptions such as the Covid-19 pandemic on the future of jobs and work are also of interest.

Awards: Standard Grants; Anticipated Funding Amount: \$45,000,000

Up to 15 Planning Grant Awards, up to 15 Research Grant Awards, and up to 10 Transition-to-Scale Awards.

Three classes of proposals will be considered through this solicitation:

- FW-HTF Planning Grants (FW-HTF-P) may be requested for a total budget not to exceed \$150,000 and for a period of up to 1 year.
- FW-HTF Research Grants (FW-HTF-R) may be requested for a total budget between \$750,000 and \$2,500,000 and for a period of up to 4 years.
- FW-HTF Transition-to-Scale Grants (FW-HTF-T) may be requested for a total budget between \$1,500,000 and \$5,000,000 and for a period of up to 5 years.

Letters of Intent: Not required

Proposal Submission Deadline: March 23, 2021

Contacts: Balakrishnan (Prabha) Prabhakaran, CISE/IIS, telephone: (703) 292-4847, email: fwhtf-contacts@nsf.gov

- Tara Behrend, SES/SBE, telephone: (703) 292-8053, email: fwhtf-contacts@nsf.gov
 - Jordan Berg, ENG/CMMI, telephone: (703) 292-5365, email: fwhtf-contacts@nsf.gov
-

Grant Program: Geomorphology and Land-use Dynamics (GLD)

Agency: National Science Foundation NSF 21-547

RFP Website: <https://www.nsf.gov/pubs/2021/nsf21547/nsf21547.htm>

Brief Description: The GLD Program supports innovative fundamental research into processes that shape and modify earth's landscapes over a variety of length and time scales, with a focus on the Holocene. The program encourages research that quantitatively investigates the coupling and feedback among such processes, their rates, and their relative roles, especially in the contexts of variation in biologic, climatic, and tectonic influences and in light of changes due to human impacts. Such research may involve fieldwork, modeling, experimentation, theoretical development, or combinations thereof. GLD is particularly interested in increasing the participation of underrepresented groups in research and education such as women, persons with disabilities, and underrepresented minorities [1] [2], and those from geographically underrepresented areas in science, technology, engineering, and mathematics (STEM). Proposals submitted in response to this solicitation are strongly encouraged to involve PIs, co-PIs, postdoctoral researchers, students, and other personnel who are members of these groups.

Awards: Standard Grant or Continuing Grant; Anticipated Funding Amount: \$7,640,000

Letters of Intent: Not required

Proposal Submission Deadline: Proposals Accepted Anytime

Contacts: Justin Lawrence, Program Director, E 8483, telephone: (703) 292-2425, email: jlawrenc@nsf.gov

Grant Program: Enabling Discovery through GENomics (EDGE)

Agency: National Science Foundation NSF 21-546

RFP Website: <https://www.nsf.gov/pubs/2021/nsf21546/nsf21546.htm>

Brief Description: Through the Enabling Discovery through GENomics (EDGE) program, the National Science Foundation (NSF) and the National Institutes for Health (NIH) support research to advance understanding of comparative and functional genomics. The EDGE program supports the development of innovative tools, technologies, resources, and infrastructure that advance biological research focused

on the identification of the causal mechanisms connecting genes and phenotypes. The EDGE program also supports functional genomic research that addresses the mechanistic basis of complex traits in diverse organisms within the context (environmental, developmental, social, and/or genomic) in which they function. These goals are essential to uncovering the rules that underlie genomes-to-phenomes relationships and predict phenotype, an area relevant to [Understanding the Rules of Life: Predicting Phenotype](#), one of the [10 Big Ideas](#) for NSF investment. The goals also support the NHGRI priority to establish the roles and relationships of all genes and regulatory elements in pathways, networks, and phenotypes.

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

Letters of Intent: Not required

Proposal Submission Deadline: March 16, 2021; February 17, 2022

Contacts: Theodore J. Morgan, telephone: (703) 292 7868, email: tmorgan@nsf.gov

- Edda (Floh) Thiels, telephone: (703) 292-8167, email: ethiels@nsf.gov
 - Douglas K. (Patrick) Abbot, telephone: (703) 292-7820, email: dabbot@nsf.gov
-

Grant Program: Dimensions of Biodiversity FY2021

Agency: National Science Foundation NSF 21-545

RFP Website: <https://www.nsf.gov/pubs/2021/nsf21545/nsf21545.htm>

Brief Description: Despite centuries of discovery, most of our planet's biodiversity remains unknown. The scale of Earth's unknown diversity is especially troubling given the rapid and permanent loss of biodiversity across the globe. The goal of the Dimensions of Biodiversity campaign is to transform how we describe and understand the scope and role of life on Earth.

This campaign promotes novel integrative approaches to fill the most substantial gaps in our understanding of the diversity of life on Earth. It takes a broad view of biodiversity, and focuses on the intersection of genetic, phylogenetic, and functional dimensions of biodiversity. Successful proposals must integrate these three dimensions to understand interactions among them. While this focus complements several core programs in the Biological Sciences Directorate at NSF, it differs by requiring that multiple dimensions of biodiversity be addressed simultaneously, in novel ways, to understand their synergistic roles in critical ecological and evolutionary processes, especially pertaining to the mechanisms driving the origin, maintenance, and functional roles of biodiversity.

Awards: Standard Grant or Continuing Grant; Anticipated Funding Amount: \$8,000,000

Letters of Intent: Not required

Proposal Submission Deadline: March 26, 2021

Contacts: Christopher Balakrishnan, telephone: (703) 292-2331, email: Dimensions@nsf.gov

- Katharina Dittmar, BIO/DEB, telephone: (703) 292-7799, email: Dimensions@nsf.gov
- Heather Throop, BIO/DEB, telephone: (703) 292-4276, email: Dimensions@nsf.gov

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National Institutes of Health

Grant Program: Biomedical Research Facilities (C06 Clinical Trial Not Allowed)

Agency: National Institutes of Health PAR-21-139

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-21-139.html>

Brief Description: NIH recognizes the importance of all institutions of higher learning in contributing to the nation's research capacity. NIH intends to make available at least 25% of the funds to support projects

from Institutions of Emerging Excellence (as defined in [42 USC 283k\(c\)\(2\)](#)). These institutions play a special role in advancing biomedical research as they leverage their research abilities to address problems of special relevance or unmet health needs. Often these institutions are in the geographical areas in which deficits in research resources and health-related services/technologies may adversely affect the health status of the population. Serving individuals from disadvantaged backgrounds by carrying out activities related to training, health services, or biomedical research contributes to the protection health of such populations. Such institutions often serve as centers for dissemination of health information, training development, and advancement of research. At times, low levels of NIH research funding and deficits in physical research infrastructure may curtail the full potential of these efforts.

It is expected that all projects - both from research-intensive institutions and Institutions of Emerging Excellence - will have long-term effects and will benefit the broad biomedical research community at the applicant institution by providing a modern research environment, accessible on a shared basis.

Requests for regular maintenance, replacement of aging or failing equipment, and other routine work are not appropriate for this FOA, and such requests will not be supported. Inappropriate are requests for upgrades of a space serving a single investigator. Also, equally inappropriate are requests to support facilities for billable medical care, office space, or classrooms.

Applicants may request funds for costs of design and implementation of the construction/modernization project. Specifically, the allowable costs include the architectural and engineering design fees, contingency fees, construction and fixed equipment costs, and commissioning costs of the facility - see [the Funding Restrictions](#) section for further details of allowable and non-allowable costs. Applicants are encouraged to follow sustainable design principles and to use green technologies.

Awards: Application budgets are not limited but need to reflect the actual needs of the proposed project. The maximum award budget is \$8,000,000. Applications with a budget less than \$3,000,000 will not be considered. Since the scope of different projects will vary it is anticipated that the size of the awards will vary.

Letter of Intent: February 17, 2021

Proposal Submission Deadline: March 17, 2021

All applications are due by 5:00 PM local time of applicant organization.

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: Malgorzata Klosek, Ph.D.; Office of Research Infrastructure Programs (ORIP); Telephone: 301-435-0744; Email: klosekm@mail.nih.gov

Grant Program: BRAIN Initiative: New Concepts and Early-Stage Research for Recording and Modulation in the Nervous System (R21) (Clinical Trial Not Allowed)

Agency: National Institutes of Health RFA-EY-21-001

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

Brief Description: This FOA is related to the recommendations in sections II.2, II.3, and II.4 from the BRAIN 2025 Report. These three recommendations call for accelerated development of new large-scale recording technologies and tools for neural circuit manipulation. These new technologies and approaches will provide unprecedented opportunities for exploring how the nervous system encodes, processes, utilizes, stores, and retrieves vast quantities of information. A better understanding of this dynamic neural activity will enable researchers to seek new ways to diagnose, treat, and prevent brain disorders.

Achieving these goals requires the ability to record simultaneously from thousands or tens-of-thousands of neurons contributing to the dynamic activity in a neural circuit. The relevant activity may be in clusters of cells packed closely together or may be in widely distributed circuits. Current microelectrode and imaging technologies are limited in the number of cells from which activity can be

isolated and sampled simultaneously, by the size or location of the area to be sampled, by the depth of penetration, and by the invasiveness of the technique that might prohibit their use in human experimentation. Non-invasive technologies suitable for use in humans are currently limited in spatial resolution and temporal dynamics, as well as in their reflection of on-going electrical activity in circuit elements. This FOA seeks entirely new ideas, concepts and/or approaches from physics and engineering, and biology, for how these limitations might be overcome to enable increased recording capabilities on the scale of one or more orders of magnitude beyond that of current technology.

This FOA is also related to the goals of the updated BRAIN 2.0 Report, which recommends expanding the functionality and integration of electrophysiological and neurochemical methods. The next generation of recording/modulation technology development should include efforts to improve cell-type and neurochemical specificity. Thus, an equally important goal of this FOA is to discover novel ideas for technology capable of precisely manipulating activity in circuits. Dissecting the function of neural circuits requires the ability to precisely activate or inactivate brain cells (both neuronal and non-neuronal) in order to investigate underlying mechanisms and demonstrate causality. Current technologies such as microstimulation and optogenetic approaches are limited in specificity, temporal dynamics, and by the invasiveness of the technique.

Awards: Application budgets may not exceed \$400,000 **total direct costs** over a maximum three-year funding period. No more than \$200,000 **total direct costs** may be requested in any single year.

Letter of Intent: Not required

Proposal Submission Deadline: May 3, 2021; October 29, 2021; May 2, 2022; October 28, 2022; May 1, 2023; October 27, 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: Martha Flanders, PhD; National Eye Institute (NEI); Telephone: 301-451-2020
Email: BRAIN-FOAs@nih.gov

Grant Program: Regulation of Brain Regional and Cell Type Specific Proteome Dynamics in Aging and Alzheimer's Disease (R01 Clinical Trial Not Allowed)

Agency: National Institutes of Health RFA-AG-21-033

RFP Website: <https://grants.nih.gov/grants/guide/rfa-files/RFA-AG-21-033.html>

Brief Description: The overall goal of this initiative is to invite research projects that will use the next generation of synthetic enzymes, chemical biology, and bioorthogonal amino acid whole-animal-labeling techniques in order to obtain the spatial and temporal proteome dynamics information that will also inform brain anatomical and genetic changes in intact mammals during aging and AD.

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

- The consequences of normal and pathological brain aging in regulating cell-specific newly synthesized proteome dynamics in, for example, synaptic plasticity;
- Methods by which genetic risk factors affect molecular, cellular, and physiological aspects of neuronal proteome in aging and AD;
- The roles of astrocytes and microglia in modulating proteome dynamics in synaptic degeneration and accumulation of AD-related pathologies; and,
- Impact of microenvironment, such as plaque accumulation, on the proteome dynamics in glia, microglia, and neuroinflammation.

It is expected that applications responding to this initiative will use the latest cell-type-specific labeling, imaging, and proteomic techniques with suitable model systems to understand the etiology of brain aging

and AD. Therefore, applications that will only provide a global view of gene expression without any subcellular, cell-type, and brain regional specificity will be considered non-responsive. Examples of non-responsive studies outside of the scope of this FOA include, but are not be limited to, the following:

- Studies that use model organisms expressing AD-related genes in peripheral and non-CNS tissues;
- Studies that solely propose to use single and cell-type-specific RNAseq, transcriptomic, and epigenetic analyses; and,
- Studies that propose to generate new animal models and methodologies without a clear connection to the proteome dynamics of brain aging and AD.

Awards: Application budgets need to reflect the actual needs of the proposed project and should be limited to no more than \$750,000 in direct costs per year.

Letter of Intent: February 28, 2021

Proposal Submission Deadline: March 18, 2021

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

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

Contact: J. Austin Yang, Ph.D.; National Institute on Aging (NIA); Telephone: 301-496-9350; Fax: 301-496-1494; Email: austin.yang@nih.gov

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

Agency: National Institutes of Health PAR-21-075

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

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

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

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

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

For this FOA, "genomics research" is defined as biological investigation at the scale of the complete genome without having a focus on a single gene, a group of genes, a particular genomic locus, or a specific disease or organ system. "Genomics programs" are defined as research or educational programs that have a complete or substantial focus on genomics research, including both experimental and computational

approaches towards genomics. Programs that focus on biological research or education with genetics topics included without a specific focus on genome-scale topics will ordinarily be considered outside the scope of “genomics programs”.

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

Letter of Intent: 30 days prior to application due date

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

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

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

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

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

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

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

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

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

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

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

Letter of Intent: February 28, 2021

Proposal Submission Deadline: March 29, 2021

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

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

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

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

Grant Program: Funding Opportunity Announcement (FOA) for the National Defense Education Program (NDEP) for Science, Technology, Engineering, and Mathematics (STEM), and

Biotechnology Education, Outreach, and Workforce Initiative Programs and Enhanced Civics Education

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

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

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

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

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

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

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

Letter of Intent: Please see below.

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

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

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

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

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

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

in the greater technical community. All awards issued against this BAA must serve to benefit the objectives identified above.

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

Letter of Intent: Please see below.

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

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

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

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

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

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

Brief Description: The technical portion of this BAA consists of three main topics: Ultra-wide Bandgap (UWBG) Semiconductor Physics and Devices, UWBG Materials, and Physics-Driven Machine Learning for UWBG Materials and RF Device Development. A main topic may be further divided into sub-topics. Teams are encouraged to self-organize at any scale to create a proposal to address one, several, or all of these areas as they see fit. The TPOCs listed in this BAA will be able to assist potential proposers in this during the white paper stage, and this aspect will in particular be a focus at the Proposers' Day described in I.A.6.a. The full Center will be selected from a set of these Teams (as separate Team awards) that will together cover the full scope of the BAA. Team awards can themselves include sub-awards to one or more institutions or organizations, because the necessary expertise in addressing the numerous facets of the topics may reside within different organizations. Teams will be appropriately scoped for the level of effort taken on. All Team awards will collaborate and cooperate among themselves and with the Army Science and Technology (S&T) enterprise in accomplishing the research objectives.

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

Letter of Intent: Please see below.

Proposal Deadline: White Papers Due: 15 February 2021

Final Proposals by Invite Only Due: 1 June 2021

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

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

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](#)

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

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Department of Transportation

Grant Program: INFRA Grants

Agency: Department of Transportation NSFHP-21-INFRA21 [\[Related Opportunities\]](#)

Website: <https://www.transportation.gov/buildamerica/financing/infra-grants/infrastructure-rebuilding-america>

Brief Description: The Nationally Significant Freight and Highway Projects (NSFHP) program provides Federal financial assistance to highway and freight projects of national or regional significance. This discretionary grant program was established in the 2015 Fixing America's Surface Transportation (FAST) Act. This program, previously known as FASTLANE, was renamed the Infrastructure For Rebuilding America (INFRA) program in 2017.

Eligible projects for INFRA grants are: highway freight projects carried out on the National Highway Freight Network (23 U.S.C. 167); highway or bridge projects carried out on the National Highway System (NHS), including projects that add capacity on the Interstate System to improve mobility or projects in a national scenic area; railway-highway grade crossing or grade separation projects; or a freight project that is 1) an intermodal or rail project, or 2) within the boundaries of a public or private freight rail, water (including ports), or intermodal facility. A project within the boundaries of a freight rail, water (including ports), or intermodal facility must be a surface transportation infrastructure project necessary to facilitate direct intermodal interchange, transfer, or access into or out of the facility and must significantly improve freight movement on the National Highway Freight Network. Improving freight movement on the National Highway Freight Network may include shifting freight transportation to other modes, thereby reducing congestion and bottlenecks on the National Highway Freight Network. For a freight project within the boundaries of a freight rail, water (including ports), or intermodal facility, Federal funds can only support project elements that provide public benefits.

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: March 05, 2021

Contact Information: Paul Baumer Program Manager Phone 202-366-1092 [Program Manager](#)

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Department of Agriculture:

Grant Program: Equipment Grants Program

Agency: Department of Agriculture National Institute of Food and Agriculture USDA-NIFA-OP-008139

Website: <https://nifa.usda.gov/funding-opportunity/equipment-grant-program-egp>

Brief Description: The Equipment Grant Program (EGP) serves to increase access to shared-use special purpose equipment/instruments for fundamental and applied research for use in the food and agricultural sciences programs at institutions of higher education, including State Cooperative Extension Systems. The program seeks to strengthen the quality and expand the scope of fundamental and applied research at eligible institutions, by providing them with opportunities to acquire one major piece of equipment/instruments that support their research, training, and extension goals and may be too costly and/or not appropriate for support through other NIFA grant programs.

Awards: Grant from \$25,000 to \$500,000; Available funding: \$4,800,000

Letter of Intent: Encouraged but not required

Proposal Deadline: March 16, 2021

Contact Information: Contact at: [Carlos Ortiz, PhD](#)

Grant Program: Biotechnology Risk Assessment Research Grants Program

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

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

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

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

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

Proposal Deadline: February 24, 2021

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

Grant Program: Scientific Cooperation Research Program (SCRP)

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

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

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

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

Proposal Deadline: March 01, 2021

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

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

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

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

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

Letter of Intent: Required.

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

Proposal Deadline: Thursday, July 29, 2021

Contact Information: [AFRI Coordination Team](#)

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Department of Labor

Grant Program: Workforce Pathways for Youth Grant Program

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

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

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

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

Proposal Deadline: February 4, 2021

Contact Information: Denise Roach Grants Management Specialist Roach.Denise@dol.gov

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[Department of Commerce/EDA](#)

Grant Program: FY2021 Coastal and Ocean Modeling Testbed Project

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

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

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

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

Letter of Intent: Contact the program director.

Proposal Deadline: February 26, 2021

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

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

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[EPA](#)

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

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

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

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

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

Submission Deadline: February 12, 2021

Contact: [Alyssa Edwards](#)

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[Department of Energy](#)

Grant Program: Fossil Energy Based Production, Storage, Transport and Utilization of Hydrogen Approaching Net-Zero or Net-Negative Carbon Emissions

Agency: Department of Energy DE-FOA-0002400

Website: <https://www.grants.gov/web/grants/view-opportunity.html?oppId=330950>

Brief Description: This FOA will develop technologies to reinvigorate the use of the United States' vast fossil-fuel resources and power infrastructure for net-zero carbon energy and commodity production through the production, transport, storage, and utilization of fossil-based hydrogen with zero or negative carbon emissions. To achieve these goals, significant advances in technology, economics, and infrastructure must be made in areas of interest under the following program areas: Net Zero-or Negative-Carbon Hydrogen Production from Modular Gasification and Co-Gasification of Mixed Wastes, Biomass, and Traditional Feedstocks; Solid Oxide Electrolysis Cell Technology Development; Carbon Capture; Advanced Turbines; Natural Gas-Based Hydrogen Production; Hydrogen Pipeline Infrastructure; Subsurface Hydrogen Storage.

Awards: Anticipated available funding: \$160,000,000

Letter of Intent: Please contact the program director

Submission Deadline: March 01, 2021

Contact: Raelynn Honkus 412-386-4992 Raelynn.Honkus@netl.doe.gov

Grant Program: Materials and Chemical Sciences Research for Quantum Information Science

Agency: Department of Energy Office of Science DE-FOA-0002449

Website: <https://science.osti.gov/bes/Funding-Opportunities>

Brief Description: The DOE SC program in Basic Energy Sciences (BES) announces its interest in receiving applications from single investigators and from teams for support of experimental and theoretical efforts to advance understanding of quantum phenomena in systems that could be used for quantum information science (QIS) and the use of quantum computing in chemical and materials sciences research. New and renewal applications are invited in two topical areas: 1) Quantum Computing; and 2) Next-Generation Quantum Systems.

The BES mission is to support fundamental research to understand, predict, and ultimately control matter and energy at the electronic, atomic, and molecular levels to provide the foundations for new energy technologies and to support DOE missions in energy, environment, and national security. BES also supports world-class, open-access scientific user facilities consisting of a complementary set of intense x-ray sources, neutron sources, and research centers for nanoscale science. Further information about BES research programs can be found at: • Chemical Sciences, Geosciences, and Biosciences: <https://science.osti.gov/bes/csgb> • Materials Sciences and Engineering: <https://science.osti.gov/bes/mse> • Quantum Information Science: <https://science.osti.gov/bes/Research/qis>

Awards: DOE anticipates that, subject to the availability of future year appropriations, a total of up to \$75 million in current and future fiscal year funds will be used to support awards under this FOA.

Letter of Intent: Please see below.

Submission Deadline: Submission Deadline for Pre-Applications: January, 27, 2021 at 5:00 PM Eastern
A Pre-Application is required Pre-Application Response Date: March 1, 2021 Submission Deadline for Applications: April 14, 2021 at 11:59 PM Eastern

Contact: Dr. James Horwitz, Basic Energy Sciences, Materials Sciences and Engineering Division James.Horwitz@science.doe.gov; Dr. Jeffrey Krause, Basic Energy Sciences, Chemical Sciences, Geosciences, and Biosciences Division Jeff.Krause@science.doe.gov

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[NASA](#)

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

Agency: NASA NNH20ZDA001N-HFORT

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

Brief Description: The Heliophysics Flight Opportunities in Research and Technology (H-FORT) program seeks to fund space and sub-orbital science and science-enabling investigations that use platforms that include SmallSats (including CubeSats), Balloon Missions, and Hosted Rideshare Payloads, such as International Space Station (ISS)-attached payloads. The program encourages the development of technologies that will enable investigation of heliophysics science questions. All proposed investigations must be responsive to NASA Heliophysics Science Goals. H-FORT is a component of the Heliophysics Research Program and proposers interested in this program element are encouraged to see B.1 The Heliophysics Research Program Overview for Heliophysics-specific requirements and Science Goals and objectives. Common requirements for all ROSES elements are found in the ROSES Summary of Solicitation and the 2020 Proposer's Guidebook (https://prod.nais.nasa.gov/pub/pub_library/srba/proposers_guidebooks.html). The order of precedence is the following: B.11 (this document) followed by B.1, followed by the ROSES Summary of Solicitation, and the Proposer's Guidebook. Proposers should be familiar with all of these resources.

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

Notice of Intent: Not required.

Proposal Deadline: March 26, 2021

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

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

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

Agency: NASA NNH20ZDA001-INVEST

Website: <https://nspires.nasaprs.com/external/solicitations/summary.do?solId=%7BA5B2B8C3-E494-E766-CECA-B07A359AACCC4%7D&path=&method=init>

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

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

Notice of Intent: January 29, 2021

Proposal Deadline: March 9, 2021

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

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National Endowment of Humanities

Grant Program: Research and Development

Agency: National Endowment for the Humanities 20210518-PR

Website: <https://www.neh.gov/grants/preservation/research-and-development>

Brief Description: The Research and Development program supports projects that address major challenges in preserving or providing access to humanities collections and resources. These challenges include the need to find better ways to preserve materials of critical importance to the nation's cultural heritage—from fragile artifacts and manuscripts to analog recordings and digital assets subject to technological obsolescence—and to develop advanced modes of organizing, searching, discovering, and using such materials.

This program supports projects at all stages of development, from early planning and stand-alone studies, to advanced implementation. Research and Development projects contribute to the evolving and expanding body of knowledge for heritage practitioners, and for that reason, outcomes may take many forms. Projects may produce any combination of laboratory datasets, guidelines for standards, open access software tools, workflow and equipment specifications, widely used metadata schema, or other products.

Research and Development supports work on the entire range of humanities collection types including, but not limited to, moving image and sound recordings, archaeological artifacts, born digital and time-based media, rare books and manuscripts, archival records, material culture, and art. Applicants must demonstrate how advances in preservation and access through a Research and Development project would

benefit the cultural heritage community by supporting humanities research, teaching, or public programming.

Research and Development projects are encouraged to address one or more of the following areas of special interest:

- **Preserving our audiovisual and digital heritage**
- **Conserving our material past**
- **Protecting our cultural heritage**
- **Serving under-represented communities**

For more information about the program, you may refer to the pre-recorded [webinar](#). Please note, the webinar was recorded in 2020 and therefore deadlines are outdated. An updated pre-recorded webinar for 2021 will be posted by March 4, 2021.

Award: Maximum award amount Tier I provides awards up to \$75,000; Tier II provides awards up to \$350,000

Proposal Deadline: Application due May 18, 2021

Contact: Division of Preservation and Access Team 202-606-8570; preservation@neh.gov

Grant Program: Awards for Faculty

Agency: National Endowment for the Humanities 20210414-HB

Website: <https://www.neh.gov/divisions/research>

Brief Description: The Division of Research supports scholarly research that advances knowledge and understanding of the humanities. Through twelve annual funding opportunities, awards are made to scholars—individuals, collaborative teams, or institutions—working on research projects of significance to specific humanities fields and to the humanities as a whole. The projects that the division supports are as diverse as America itself: editions of the Dead Sea Scrolls, the history of “The Star Spangled Banner,” and the autobiography of Mark Twain.

While Research Programs is the only NEH division to make awards to individuals, institutional grants are also available. **Collaborative Research** supports projects by teams of scholars. **Scholarly Editions and Scholarly Translations** provides funding for time-intensive editing projects such as the [Papers of George Washington](#), and **Fellowship Programs at Independent Research Institutions** provides American scholars access to unique collections at American centers for humanities research around the world.

Award: Various

Proposal Deadline: Application due April 18, 2021

Contact: Division of Research Programs: (202) 606-8200 research@neh.gov

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Private Foundations

American Heart Foundation

Grant Program: Career Development Award

Agency: American Heart Foundation

Website: <https://professional.heart.org/en/research-programs/application-information/career-development-award>

Brief Description: Supports highly promising healthcare and academic professionals, in the early years of one's first professional appointment, to explore innovative questions or pilot studies that will provide preliminary data and training necessary to assure the applicant's future success as a research scientist. The award will develop the research skills to support and greatly enhance the awardee's chances to obtain and retain a high-quality career position.

Eligibility: At the time of application, the applicant must hold an MD, PhD, DO, DVM, DDS, or equivalent post-baccalaureate doctoral degree.

- Postdoctoral fellows are eligible to apply but must have attained faculty appointment by the time of award activation.
- NIH K99/R00 awardees may apply if they will be in the R00 stage of the award at time of AHA Career Development Award activation.
- The AHA will permit a Career Development Awardee to concurrently hold an NIH K award if there is **no budgetary overlap**. The awardee must devote at **least 10% effort** to the Career Development Award.

Awards: \$77,000 per year, including 10% institutional indirect costs for three years. **Total Award Amount:** \$231,000

Letter of Intent: Not required

Proposal Deadline: Applications are being accepted until Tuesday, February 16, 2021, for the American Heart Association's [Career Development Award](#).

Contact: Division of Research Operations ; E-mail: apply@heart.org Call: (214) 360-6107 (Option 1)

JDRF

Grant Program: JDRF National Diabetes Psychology Fellowship Program

Agency: JDRF

Website: [JDRF RFA](#)

Brief Description: To increase capacity in diabetes clinical psychology and diabetes psychology research, JDRF has created a Diabetes Psychology Fellowship program which is open to applicants in the US and in Canada. The applicant is required to work with a mentor who can provide a training environment conducive to a career in type 1 diabetes-relevant psychosocial research. At the time of activating the award, the applicant must have a doctoral degree (PhD, PsyD, MD), or the equivalent from an accredited institution and must not be simultaneously serving an internship or residency.

The JDRF psychosocial fellowship program is a combination of clinical diabetes care and diabetes research. Each postdoctoral fellowship is a 12-month term. Fellowships positions will start in summer/fall 2021. The fellowship program is a combination of clinical diabetes care and diabetes research. Each applicant must have documented research experience, a career interest in diabetes specialized psychology and must have completed a PsyD or a PhD program in the field of psychology. The fellowship is intended for those at a relatively early stage of their career. Ordinarily, the most recent doctoral degree will have been received no more than 5 years prior to the application submission.

Awards: Fellowship stipends can be requested for up to a maximum of \$65,000 USD per year.

Letter of Intent: Not required

Proposal Deadline: February 25, 2021

Contact: Division of Research Operations ; E-mail: apply@heart.org Call: (214) 360-6107 (Option 1)

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[Streamlyne Question of the Week](#)

Question: Can I generate budgets for multiple years from the Year-1 budget in Streamlyne?

Answer: Yes! You only need to input the Year-1 budget and then click on the “generate all periods” button. Streamlyne will create budget sheets for the remaining periods. You can then go to “summary” under the budget tab to review budget sheets for all periods. You can also change specific budget items that you allocated in Year-1 but you do not want to continue them in the following periods.

More FAQs on Streamlyne: Please visit <https://research.njit.edu/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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