

NJIT Research Newsletter

Issue: ORN-2019-23

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**. The Newsletter is posted on the NJIT Research Website <http://www.njit.edu/research/>.

Special Announcements: Page 1
Grant Opportunity Alerts: Keyword Index: Page 3
Recent Awards: Page 4
In the News (Related to research funding): Page 5
Webinars and Events: Page 8
Grant Opportunities: Page 10
Streamlyne Question of the Week: Page 48
Streamlyne Information: Page 48
Meet with SVP: Open Hour: 49

Special Announcements

NJ ACTS Pilot Grants Program 2019 Request for Applications and Application Instructions

The New Jersey Alliance for Clinical and Translational Science (NJ ACTS) is delighted to announce its **Pilot Grants Program**, supported by a grant from the National Institutes of Health/National Center for Advancing Translational Sciences.

For some programs, we are seeking proposals involving faculty from **at least two** NJ ACTS institutions (Rutgers, Princeton and NJIT) that, when completed, will form the basis for applications for funding from federal and other sources. For Valued Partner and Hub Evaluation/Benchmark, other CTSA Hubs or other NJ ACTS partners are required.

We are seeking proposals for 5 categories of pilots (for more details, see attached):

- Translational and Clinical Sciences Award
- Methodological and Infrastructure Awards
- Propel Awards
- Valued Partnership Awards
- Novel Approaches to Evaluation and Benchmarks of CTSA Hubs

Eligibilities

- (Co-)PIs must be faculty at Rutgers, Princeton or NJIT. Each project **must** have at least **2 Co-PIs**, representing **different NJ ACTS institutions** or for Valued Partners and Hub Evaluation/Benchmark pilots, a partner institution or other CTSA Hub is required.

- Faculty members with all ranks are eligible to apply. Junior faculty members are especially encouraged to apply.
- Clinical studies beyond Phase IIB are not allowed.
- Applicants may submit multiple applications for different pilot grant mechanisms provided that each project is different. Applicants may not submit identical projects to multiple pilot funding mechanisms.

Application Process:

A **Complete Application** comprises: **Pilot Program Common Application Form** (a fillable pdf) and **Proposal Materials** as a second pdf document. If you are interested, please contact Yi Chen at yi.chen@njit.edu for additional information and application forms.

Applications are due **July 15, 2019, 3 pm**. Decisions are expected by **August 15, 2019**.

All Pilot Grants must receive **prior approval from NCATS**. Accordingly, we cannot specify an earliest start-date. Projects involving human subjects and/or vertebrate animals are urged to seek IRB/IACUC approval **concurrent** with the pilot grant application.

For more information about the program, contact NJACTS@rbhs.rutgers.edu.

Federal Requirement on Certification of Time and Effort Charged to Grants Fall 2018 Certifications

The Office of Research has been continuously updating research services protocols for online implementation to enhance faculty research support. Consistent with 2020 Vision plan to manage proposal submission and post-award grant management through online systems in a paperless manner, One of the recent initiatives is the implementation of the Time and Effort Certification process in a paperless manner. While considering online certification options, we started doing Time and Effort Certification (TEC) through emails instead of paper-based forms. TEC forms for Fall 2018 have been sent to PIs as email attachments. The process of opening up the PDF form, signing it for certification and sending it back by the due date is included in the personalized email to faculty and staff researchers.

This is an important federal requirement for certify Time and Efforts charged to each grant to be in compliance with federal code of regulation 2CFR 200. Information about the TEC process is provided below.

Time and Effort Certification (TEC) Process for Fall 2018

What is time and effort certification?

Time and effort certification is required by regulation (Uniform Guidance 2 CFR 200 Subpart E formerly known as Federal OMB Circular A-21) to enable NJIT to receive grant funds.

What is on the certificate and how should I review it?

The time and effort report provides each employee's percentage of effort based on the actual payroll charged to their grant during the certification period. This percentage is calculated based on the employee's total salary distribution by funding source during this period.

PI's may update the actual effort dedicated to grants in the last column. Please note that:

- The total in this column must equal 100% across all funding sources
- The salary charge percentage cannot exceed the effort percentage

PI's must fill out the last column of the certification only if it is different from what is printed on the certificate. As a friendly reminder, timely review and correction of errors in personnel charges to a grant (prior to time and effort certification at the end of the semester) should be done on a regular basis. If you need assistance with correction of errors in charging personnel to grants please contact your grant accountant.

How will I receive the certificate?

The certificate are sent from the time and effort email ID via email. Faculty and staff should receive the certificates for themselves and should certify for themselves. For students and part time employees, the PI on the grant will receive the certificate and can certify on their behalf.

How should I open the certificate and sign it ?

- The time and effort certificate are password protected, to view the certificate please enter the password which will be communicated in the email.
- If the PI/individual is unable to sign digitally, they may also print, sign and scan back the certificate to timeandeffort-group@njit.edu

By when is the certification due?

The deadline is included in the email.

If you have any other questions, feel free to reach out to timeandeffort-group@njit.edu

Grant Opportunity Alerts

Keywords and Areas Included in the Grant Opportunity Alert Section Below

NSF: Advanced Computing Systems & Services; International Research Experiences for Students (IRES); Opportunities for Promoting Understanding through Synthesis (OPUS); NSF Convergence Accelerator; Innovative Technology Experiences for Students and Teachers (ITEST); Research Experiences for Undergraduates (REU); Computer and Information Science and Engineering (CISE) Research Initiation Initiative (CRII); Physics Frontiers Centers (PFC); Division of Chemistry: Disciplinary Research Programs (CHE-DRP), Centers for Chemical Innovation (CCI), Methodology, Measurement, and Statistics (MMS); Secure and Trustworthy Cyberspace Frontiers (SaTC Frontiers)

NIH: Non-Invasive Neurostimulation in AD/ADRD (R01); Research to Understand and Inform Interventions (R01); NIAID New Innovators Awards (DP2); Brain Initiative: Research to Develop and Validate Advanced Human Cell-Based Assays To Model Brain Structure and Function (R01); Research Program Award (R35); Postdoctoral Research Associate Training (PRAT) Program (Fi2); Blockchain Technology to Improve SUD Care (R43/R44); Senator Paul D. Wellstone Muscular Dystrophy Specialized Research Centers (MDSRC) (P50); PHS 2019-02 Omnibus Solicitation of the NIH, CDC, and FDA for Small Business Innovation Research Grant Applications (Parent SBIR [R43/R44]); Imaging, Biomarkers and Digital Pathomics for the Early Detection of Premetastatic Aggressive Cancer (R01)

Department of Transportation: Grants or Research Fellowship (GRF); Advanced Transportation and Congestion Management Technologies Deployment Initiative; National Infrastructure Investments

Department of Defense/US Army/DARPA/ONR: DSO Office-wide Broad Agency Announcement; Program Announcement for Disruptioneering; Materials Science in Extreme Environments University Research Alliance (MSEE-URA); DoD Psychological Health and Traumatic Brain Injury, Federal

Interagency Traumatic Brain Injury Research Analysis Award; DoD Vision, Investigator- Initiated Research Award; DoD Duchenne Muscular Dystrophy, Idea Development Award; Alzheimer's, Convergence Science Research Award; Orthopedic, Applied Research Award; DoD Hearing Restoration Focused Program Award; DoD Epilepsy, Idea Development Award; Robust and Efficient Computing Architectures, Algorithms and Applications for Embedded Deep Learning

EPA: Green Infrastructure to Reduce Stormwater Runoff; Chemical Mechanisms to Address New Challenges in Air Quality Modeling; 2019 Healthy Communities Grant Program; A National Student Design Competition Focusing on People, Prosperity and the Planet - Safe and Sustainable Water Resources

Department of Energy: Request for Information (RFI): Marine Sciences Laboratory; Low Cost, Efficient Treatment Technologies For Produced Water; Buildings Energy Efficiency Frontiers & Innovation Technologies (BENEFIT) – 2019

NASA: University Leadership Initiative (ULI2); ROSES 2019: B.7 Space Weather Science Applications Operations 2 Research; Heliophysics Theory, Modeling, and Simulations; Astrophysics Research and Analysis; Heliophysics Data Environment Emphasis

National Endowment of Humanities: Summer Stipends; Fellowship Programs at Independent Research Institutions; Digital Humanities Advancement Grants; Research and Development Program

Simon Foundation: Autism Research

William T. Grant Foundation: Scholars Program

Mozilla: Mozilla Open Source Support (MOSS) Awards

John D. And Catherine T. MacArthur Foundation: 2020 Scientific Innovation Award

Recent Research Grant and Contract Awards

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

PI: Edward Dreizen (PI)

Department: Chemical and Material Engineering

Grant/Contract Project Title: Advanced Reinforced Concrete Materials for Transportation Infrastructures

Funding Agency: NJDOT

Duration: 05/10/17-05/19/20

PI: Sergei Adamovich (PI)

Department: Center for Rehabilitation Robotics

Grant/Contract Project Title: Optimizing Hand Rehabilitation Post-Stroke Using Interactive Virtual Environments

Funding Agency: NIH

Duration: 06/01/17-05/31/20

PI: Don Sebastian (PI)

Department: Technology and Business Development

Grant/Contract Project Title: Management of the New Jersey Health Information Network (Substance Use Disorder - Promoting Interoperability Program)

Funding Agency: NJ Department of Health

Duration: 04/01/19-03/31/21

PI: Casey Diekman (PI)
Department: Center for Rehabilitation Robotics
Grant/Contract Project Title: INTERN: NSF-Funded Graduate Student Internship (Supplement to CAREER: Neuronal Data Assimilation Tools and Models for Understanding Circadian Rhythms)
Funding Agency: NSF
Duration: 07/01/16-09/31/21

PI: Piero Armenante (PI)
Department: Chemical and Material Engineering
Grant/Contract Project Title: Hydrodynamics of USP 1 With Different Basket
Funding Agency: Merck & Co., Inc.
Duration: 06/01/19-05/31/20

PI: Ozzie Williams (PI)
Department: CPCP
Grant/Contract Project Title: 2019 Spring Activity Grant Program (NJ College Bound Activity Grant)
Funding Agency: State of NJ (OSHE)
Duration: 06/01/18-06/30/19

PI: Christine Liaukus (PI)
Department: Center for Building Knowledge
Grant/Contract Project Title: A Systems Approach to High Performance Re-Siding Projects
Funding Agency: U.S. Department of Energy
Duration: 05/10/19-05/09/22

NJII

PI: Thomas Gregorio (PI)
Department: NJII (Task Order Pass-Through NJIT)
Grant/Contract Project Title: Management of the New Jersey Health Information Network (Substance Use Disorder - Promoting Interoperability Program)
Funding Agency: NJ Department of Health
Duration: 04/01/19-03/31/21

In the News...

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

Training for STEM Faculty New to Teaching Ethics Workshop: The National Academy of Engineering Online Ethics Center (OEC) of the Center for Engineering Ethics and Society will hold a 1½-day workshop on *Training STEM Faculty New to Teaching Ethics*. Applications are invited from STEM faculty who wish to identify opportunities to integrate ethics and responsible conduct of research (RCR) guidance in their courses and research environments. Workshop presenters and participants will explore a variety of hands-on tools and approaches, both formal and ad hoc, including the use of the OEC as both a teaching tool and resource for materials. Participants will consider their own classes and research projects as well as the approaches and materials presented to create or enhance a learning activity, such as a class plan, course syllabus, or laboratory practice. This workshop is designed to help faculty and

others seeking to fulfill (a) NSF and NIH requirements for providing RCR instruction and (b) ABET ethics education expectations.

The OEC is looking for STEM faculty, researchers, and/or administrators who are eager to develop strategies and plans for incorporating ethics in their courses or research environments. Some spots will be reserved for individual attendees. Applicants are sought who will broadly represent a range of STEM disciplines, including the social sciences; graduate and undergraduate instructors; and a variety of academic institutions (e.g., liberal arts colleges, large public universities, institutions serving underrepresented populations, private research institutions).

The workshop will be held October 22–23, 2019, at the National Academies' Keck Building in Washington, DC. There is no fee for workshop registration. Participants are expected to cover their travel costs. Limited funds are available for travel assistance in cases of financial need.

Application Deadline: July 15, 2019

An AI Education Strategy: The Emerging Threats subcommittee wants the Pentagon to identify "the key aspects, applications, and challenges associated with artificial intelligence that can be developed into an educational curriculum for military service members who utilize the technology" and develop "an implementation plan" for the curriculum. The panel calls for "a plan to diversify and strengthen the Department's science, technology, research, and engineering workforce," and a master plan "to modernize the workforce and capabilities of its science and technology reinvention laboratories. It also says a senior official should be given responsibility for "the direction of research and development of next generation software and software intensive systems." A report by the Subcommittee on Intelligence and Emerging Threats and Capabilities is posted on the website <https://docs.house.gov/meetings/AS/AS26/20190604/109542/BILLS-116HR2500ih-IETC.pdf>

COST-SHARING WAIVED: The Department of Energy's applied energy offices recently released over \$200 million in funding for research and development.

[FY19 Bioenergy Technologies Office Multi-Topic Funding Opportunity Announcement](#)

The U.S. Department of Energy announced more than \$79 million in funding for bioenergy research and development including biofuels, bioproducts, and biopower. This funding supports the Energy Department's goal of providing consumers and businesses with a range of domestic energy options that are affordable, reliable, and secure. The FOA will advance DOE's Bioenergy Technology Office's objectives to reduce the price of drop-in biofuels, lower the cost of biopower, and enable high-value products from biomass or waste resources.

- \$33.5 million for [Advanced Building Construction with Energy Efficient Technologies and Practices](#);
- [\\$89 million from the Advanced Manufacturing Office.](#)

These solicitations "include new focus areas or increased participation for universities and are some of the last major FY 2019 DOE funding opportunities." They are also "the first to apply the cost-share waiver for universities and non-profit organizations" enacted last year. "The purpose of this new policy is to allow institutions and organizations that have innovative research and technology ideas but have not been able to meet the cost-share requirements to apply for applied energy funding opportunities. However, Lewis-Burke recommends that universities still provide as close to 20 percent cost-share as possible to increase the likelihood of success."

AUTONOMOUS TECHNOLOGIES RESEARCH: The Air Force Research Laboratory's Autonomy Research Collaboration Network (ARCNet), "facilitates collaborative research and development related to autonomous technologies," according to Lewis-Burke Associates.. "ARCNet Consortium membership is open to academia, large and small businesses, start-ups, and all of AFRL.ARCNet, based at Ohio University's Russ Research Center and administered by non-profit SP Global Institute (SPGI), serves as a conduit for communication between potential research partners." [Find out how to join.](#) AFRL also seeks

"research to help revolutionize computational capabilities with greater sophistication, autonomy, intelligence, and assurance that assist Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) and cyber applications and size, weight and power (SWaP) constrained platforms,". Advancing Computing Technology and Applications RFP from Dept of Air Force is posted on the website https://www.fbo.gov/index?s=opportunity&mode=form&id=e9de45f8ac759fa92f27c477ccab477a&tab=core&_cview=0

NSF QCIS-Faculty Fellows (QCIS-FF) Program: If there's going to be a "quantum revolution," the nation is going to need more research capacity in quantum computing and information science, NSF has concluded. The QCIS-Faculty Fellows (QCIS-FF) program "seeks to support departments and schools . . . that conduct research and teaching in computer science, information science, and/or computer engineering, with the specific goal of encouraging hiring of tenure-track and tenured faculty in quantum computing and/or communication."

The QCIS-Faculty Fellows (QCIS-FF) program therefore aims to grow academic research capacity in the computing and information science fields to support advances in quantum computing and/or communication over the long term. Specifically, QCIS-FF seeks to support departments and schools in U.S. institutions of higher education that conduct research and teaching in computer science, information science, and/or computer engineering, with the specific goal of encouraging hiring of tenure-track and tenured faculty in quantum computing and/or communication. Cross-disciplinary and multi-department hires are welcomed; however, intellectual ownership and primary assignment should be with the department primarily engaged in research and teaching activities for computer and information science and engineering. NSF funding will support the entire academic year salary and benefits of the newly recruited tenure-track or tenured faculty member for a duration of up to three years. Each proposal must request support for only one faculty position. Total budget is not to exceed \$750,000 per proposal, with up to two awards per institution, across all departments in any given institution. More information is posted on <https://www.nsf.gov/pubs/2019/nsf19507/nsf19507.htm> The deadline is July 1, 2019.

Quantum Computing, Information Science, Cybersecurity and Diversity among Priorities in the Appropriation Bill: Commerce, Justice, Science, and Related Agencies Appropriations 2020 Bill provides a total of \$73,895,000,000 in discretionary budget authority for fiscal year 2020. Within the level of funds provided, the bill prioritizes funding for the Constitutionally-required 2020 Decennial Census as well as for numerous other important public investments. The bill provides a solid down payment toward the nation's infrastructure improvement needs by investing \$540 million in the Economic Development Administration (EDA), an increase of \$236 million above fiscal year 2019, including strong increases for EDA's Public Works program and other EDA programs. These funds provide the foundation for future growth in jobs and our standard of living. The bill helps expand economic growth in other ways. The recommendation includes a funding increase of ten percent for the Manufacturing Extension Partnership program, which helps small and medium-sized U.S. manufacturers create jobs and expand business growth opportunities. A solid 7.1 percent increase in funding is provided for the International Trade Administration, to create jobs by expanding U.S. exports and fighting the unfair trade practices of other countries. A ten percent increase is provided for the Minority Business Development Agency, which helps create jobs and expand business growth opportunities among minority-owned U.S. companies. Furthermore, the full budget request of \$3,450,681,000 is provided for the U.S. Patent and Trademark Office (PTO), to enable PTO to promote innovation in the United States by protecting our Nation's intellectual property rights both at home and abroad. The bill also ensures responsible investments in the future of our Nation's economy and workforce by providing strong increases for science, technology, engineering, and mathematics (STEM) education at the National Aeronautics and Space Administration (NASA) and the National Science Foundation (NSF), and funding to initiate EDA's newly-authorized

STEM Apprenticeship Pilot Program to create and expand STEM apprenticeships and other workforce training models.

For NASA, the bill includes \$22,315,000,000, which is an increase of \$815,000,000 above fiscal year 2019, including strong funding levels for NASA's science, human exploration, space technology, aeronautics research, and STEM Education programs, many of which were targeted for reduction or elimination in the Administration's budget request. The recommendation makes other strong investments in science as well, providing \$8,636,141,000 for the National Science Foundation, an increase of more than \$560,000,000 above fiscal year 2019, and \$751,000,000 for scientific and technical research and services of the National Institute of Standards and Technology, an increase of \$26.5 million above fiscal year 2019.

These are among House appropriators' priorities in proposing increase for the National Science Foundation, NASA, and the National Institute of Standards and Technology. **Their report:** says quantum information science and technology promise "to yield revolutionary new approaches to computing, sensing and communication." The panel wants to see "tremendous leaps in computational simulation, including artificial intelligence, storage, quantum computing, and data analyses." The lawmakers commend NSF's mid-scale research and Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science (INCLUDES) initiatives. Providing \$40 million more than in FY 2019 for NSF's Education and Human Resources directorate, they stress the importance of minority-serving institutions. "The Committee encourages NSF to continue to use research infrastructure improvement grants, co-funding programs, and other innovative mechanisms to boost (historically black colleges and universities') participation and capacity throughout NSF research programs." NSF should "form partnerships with Hispanic Serving Institutions and (HBCUs) with respect to cybersecurity research" and use the CyberCorps Faculty Fellows pilot program to address the "critical shortage" of cybersecurity faculty. Full report is posted on the website <https://appropriations.house.gov/sites/democrats.appropriations.house.gov/files/FY2020%20CJS%20Report%20Draft.pdf>

Webinar and Events

Event: Senior Members Webinar

Sponsor: National Academy of Inventors

When: June 18, 2019; 2.00 PM eastern time

Website: https://zoom.us/webinar/register/WN_CfRCHNq-T6CDKQDmSqF_dg

Brief Description: Jacquie Burckley, Member Coordinator of the National Academy of Inventors, will host a webinar that will review the Senior Members program and its nomination process. The webinar will be hosted on Tuesday, June 18, 2019 at **2 p.m. EST**. Join this free, live webinar to learn:

- Senior Member eligibility
- Senior Member nomination process and timeline
 - includes review and election
- Helpful tips to bolster your nomination
- Differences between Fellows and Senior Members
- And more!

To Join the Webinar: Please register at the above website

Event: Webinar: Cyberinfrastructure and open source tools for patient-specific modeling of cardiovascular blood flow

Sponsor: NSF

When: June 20, 2019; 2.00 PM – 3.00 PM

Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=298735&org=NSF

Description: Cardiovascular blood flow simulations have emerged as a powerful tool for personalized medicine and biomechanics research. With the first FDA approval of coronary simulations for routine clinical use at the end of 2014, cardiovascular simulations have already led to paradigm shifts in clinical practice. In this talk we will describe the SimVascular open source package which provides a complete pipeline for image-based patient-specific blood flow modeling and simulation. We will briefly describe new capabilities of SimVascular, including large-deformation fluid structure interaction, machine learning to accelerate image segmentation, and reduced order 1D simulations. Simulations are increasingly used to predict surgical outcomes, test and optimize devices, and personalize risk-assessment for individual patients. However, most simulation results currently reported by the community are deterministic. As simulation methods gain clinical traction, uncertainty quantification is emerging as an essential computational tool for increasing rigor in results and accounting for myriad sources of uncertainty in the clinical data acquisition and modeling process. We will discuss and demonstrate a suite of tools, compatible with SimVascular, for handling uncertainty in the patient-specific modeling process, including 1) automated parameter estimation of model parameters to match clinical data targets under uncertainty, 2) forward uncertainty propagation to produce statistics on model predictions, and 3) multi-fidelity approaches which leverage reduced order models for improved efficiency. Finally, we will discuss continued challenges and areas for future research in UQ methods and their application to pediatric and adult cardiovascular disease.

To Join the Webinar: Plan to join us on Thursday June 20, 2019 at 2pm by registering at: <https://nsf2.webex.com/nsf2/onstage/g.php?MTID=e4f755835166bdb2e508e3b1ff998b812>

Access code/event number: 906 192 402

Audio conference information: To receive a call back, provide your phone number when you join the event, or call the number below and enter access code 906 192 402.

Event: Presidential Awards for Excellence in Mathematics and Science Teaching - National Selection Committee

Sponsor: NSF

When: Various (see below); 9.00 AM – 5.00 PM

Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=298140&org=NSF

Description: The 2019 National Selection Committee (NSC) for the Presidential Awards for Excellence in Mathematics and Science Teaching (PAEMST; www.paemst.org) will be taking place during the months of July and August.

NSC panels reflect a wide range of panelists, including K-12 teachers and administrators; science, mathematics, and STEM education researchers; university professors; and others with the expertise to distinguish exceptional teaching.

Individuals interested in serving as an NSC panelist for any of the below panels, please complete the [NSC Reviewer Interest Form](#).

The dates for the panels are as follows:

- Monday and Tuesday, July 22-23
- Thursday and Friday, July 25-26
- Monday and Tuesday, July 29-30
- Thursday and Friday, August 1-2
- Monday and Tuesday, August 5-6
- Thursday and Friday, August 8-9

NSF manages PAEMST on behalf of the White House Office of Science and Technology Policy.

Grant Opportunities

National Science Foundation

Grant Program: Advanced Computing Systems & Services: Adapting to the Rapid Evolution of Science and Engineering Research

Agency: National Science Foundation NSF 19-587

RFP Website: <https://www.nsf.gov/pubs/2019/nsf19587/nsf19587.htm>

Brief Description: The intent of this solicitation is to request proposals from organizations willing to serve as service providers (SPs) within the NSF Innovative High-Performance Computing (HPC) program to provide advanced cyberinfrastructure (CI) capabilities and/or services in production operations to support the full range of computational- and data-intensive research across all of science and engineering (S&E). The current solicitation is intended to complement previous NSF investments in advanced computational infrastructure by provisioning resources, broadly defined in this solicitation to include systems and/or services, in two categories:

- Category I, Capacity Systems: production computational resources maximizing the capacity provided to support the broad range of computation and data analytics needs in S&E research; and
- Category II, Innovative Prototypes/Testbeds: innovative forward-looking capabilities deploying novel technologies, architectures, usage modes, etc., and exploring new target applications, methods, and paradigms for S&E discoveries.

Resources supported through awards from this solicitation will be incorporated into and allocated as part of NSF's Innovative HPC program. This program complements investments in [leadership-class computing](#) and funds a federation of nationally-available HPC resources that are technically diverse and intended to enable discoveries at a computational scale beyond the research of individual or regional academic institutions. NSF anticipates that at least 90% of the provisioned system or services will be available to the S&E community through an open peer-reviewed national allocation process and be supported by community and other support services [such as those currently supported through eXtreme Science and Engineering Discovery Environment (XSEDE) 2.0 project-managed allocations recommended by the XSEDE Resource Allocation Committee (XRAC), and other activities intended to foster efficient coordination across resources], or an NSF-approved alternative that may emerge. If this is not feasible for the proposed system/services, proposers must clearly explain in detail why this is the case and how they intend to make the proposed system/services available to the national S&E community.

Awards: Cooperative Agreements. Anticipated funding available: \$5,000,000 to \$10,000,000 per award. A total of \$30,000,000 is available for this solicitation, subject to the availability of funds. It is anticipated that 1-2 awards will be made in Category I at up to \$10,000,000 per award for up to five years and up to 1-2 awards in Category II at up to \$5,000,000 per award for up to five years.

Letter of Intent: Not Required

Limit on Number of Proposals per Organization: 1

Proposal Submission Deadline: November 05, 2019

Contacts: Robert Chadduck, Program Director, CISE/OAC, telephone: (703) 292-8970, email: rchadduc@nsf.gov

- Alejandro M. Suarez, Assistant Program Director, CISE/OAC, telephone: (703) 292-7092, email: alsuarez@nsf.gov
- Edward Walker, Program Director, CISE/OAC, telephone: (703) 292-4863, email: edwalker@nsf.gov

Grant Program: International Research Experiences for Students (IRES)

Agency: National Science Foundation NSF 19-585

RFP Website: <https://www.nsf.gov/pubs/2019/nsf19585/nsf19585.htm>

Brief Description: The International Research Experiences for Students (IRES) program supports international research and research-related activities for U.S. science and engineering students. The IRES program contributes to development of a diverse, globally-engaged workforce with world-class skills. IRES focuses on active research participation by undergraduate or graduate students in high quality international research, education and professional development experiences in NSF-funded research areas.

The overarching, long-term goal of the IRES program is to enhance U.S. leadership in research and education and to strengthen economic competitiveness through training the next generation of research leaders.

This solicitation features three mechanisms; proposers are required to select one of the following tracks to submit their proposal.

Track I focuses on the development of world-class research skills in international cohort experiences. Track II is dedicated to targeted, intensive learning and training opportunities that leverage international knowledge at the frontiers of research. Track III supports U.S. institutional collaborations to develop, implement and evaluate innovative models for high-impact, large-scale international research and professional development experiences for U.S. graduate students.

Student participants supported by IRES funds must be citizens, nationals, or permanent residents of the United States.

Students do not apply directly to NSF to participate in IRES activities. Students apply to NSF-funded investigators who receive IRES awards. To identify appropriate IRES projects, students should consult the directory of active [IRES awards](#).

All PIs, co-PIs and Senior Personnel on IRES proposals must be from U.S. based institutions.

1. **IRES - Track I: *IRES Sites (IS)*** projects engage a group of undergraduate and/or graduate students in active high-quality collaborative research at an international site with mentorship from researchers at a host lab. IRES Sites must be organized around a coherent intellectual theme that may involve a single discipline or multiple disciplines funded by NSF.
2. **IRES - Track II: *Advanced Studies Institutes (ASI)*** are intensive short courses with related activities that engage advanced graduate students in active learning and research at the frontiers of knowledge. ASIs typically range in length from ten to twenty-one days and must be held outside the United States. ASIs must have a compelling rationale for their international location and should involve distinguished active researchers in the target field from the U.S. and abroad. ASIs should enable students to develop skills and broaden professional networks, leveraging international participation and complementary resources (expertise, facilities, data, field site, etc.) for mutual benefit.
3. **IRES - Track III: *New Concepts in International Graduate Experience (IGE)*** The IGE IRES track invites teams of PIs to propose, implement, evaluate and disseminate innovative large-scale programs (models) for providing high-quality international research and research-related professional development experiences to U.S. graduate students. The PIs should explain how their innovative program (model) could potentially be adaptable beyond the immediate disciplinary fields involved in their proposal. The proposals should be designed from the viewpoint of graduate-level STEM research/training, and globally engaged STEM workforce development. The proposals should be grounded in relevant literature on graduate STEM research/training, education, and graduate level international experiences.

U.S. graduate students recruited from a broad, diverse applicant pool should travel to non-U.S. locations for periods of several weeks to a semester for immersive experiences under the mentorship of appropriate collaborators. The proposed international graduate research experience model may focus on research and

research-related activities in any NSF-funded area(s). Proposals that utilize, leverage and expand existing global networks and infrastructure are strongly encouraged.

Awards: Standard Grant or Continuing Grant

Estimated Number of Awards:

30 to 35

Track- I: IRES Sites. Approximately 20-25 awards will be made in FY 2020, pending quality of proposals and availability of funds.

Track- II: Advanced Studies Institutes. Approximately 5-7 awards will be made in FY 2020 pending quality of proposals and availability of funds.

Track- III: New Concepts in International Graduate Experience. Approximately 3-5 awards will be made in FY 2020, pending quality of proposals and availability of funds.

Anticipated Funding Amount: \$13,000,000 in FY 2020, pending availability of funds.

Track- I: IRES Sites. Up to \$300,000 per award. For exceptionally creative proposals, awards up to \$400,000 will be considered.

Track- II: Advanced Studies Institutes. Typically, an average ASI budget is \$150,000 for each institute. Proposals involving a series of institutes are permitted when well-justified. The overall total budget for Track II proposals should not exceed \$400,000.

Track- III: New Concepts in International Graduate Experience. Up to \$1,000,000 per award. Smaller budgets (\$400,000 - \$600,000) appropriate for highly innovative models that may serve as pilots.

Letter of Intent: Not Required

Proposal Submission Deadline:

September 10, 2019

Second Tuesday in September, Annually Thereafter

Track - I: IRES Sites

September 17, 2019

Third Tuesday in September, Annually Thereafter

Track-II: Advanced Studies Institutes

September 24, 2019

Fourth Tuesday in September, Annually Thereafter

Track - III: New Concepts in International Graduate Experience

Contacts: Maija M. Kukla, telephone: (703) 292-4940, email: mkukla@nsf.gov

- Fahmida N. Chowdhury, telephone: (703) 292-4672, email: fchowdhu@nsf.gov

Grant Program: Opportunities for Promoting Understanding through Synthesis (OPUS)

Agency: National Science Foundation NSF 19-584

RFP Website: <https://www.nsf.gov/pubs/2019/nsf19584/nsf19584.htm>

Brief Description: The OPUS program seeks to provide opportunities for mid- to later-career investigators to develop new understanding of science in the fields supported by the Division of Environmental Biology (DEB) through two tracks of synthesis activities.

OPUS: Mid-Career Synthesis. This track aims to provide a mid-career researcher, defined as a candidate at the associate professor rank (or equivalent), with new capabilities to enhance their productivity, improve their retention as a scientist, and ensure a diverse scientific workforce that remains engaged in active research (including more women and minorities at high academic ranks). This track provides an opportunity for the mid-career scientist to enable a new synthesis of their ongoing research. Synthesis is achieved by developing new research capabilities through collaboration with a mentor to enable new understanding of the research system and questions of interest.

OPUS: Core Research Synthesis. This track provides an opportunity for an individual or a group of investigators to revisit and synthesize a significant body of their prior research in a way that will enable

new understanding of their research system and questions of interest. This track would also be appropriate early enough in a career to produce unique, integrated insight useful both to the scientific community and to the development of the investigator's future career.

All four clusters within the Division of Environmental Biology (Ecosystem Science, Evolutionary Processes, Population and Community Ecology, and Systematics and Biodiversity Science) encourage the submission of these proposals enabling researchers to expand understanding and develop new insights in their research.

Awards: Standard Grants. Annually. Anticipated award size is \$175,000-\$350,000

Letter of Intent: Not Required

Proposal Submission Deadline: August 28, 2019

Contacts: George W. Gilchrist, telephone: (703) 292-7138, email: ggilchri@nsf.gov

- Leslie J. Rissler, telephone: (703) 292-4628, email: lrissler@nsf.gov
- Kathryn Cottingham, telephone: (703) 292-2994, email: kcotting@nsf.gov

Grant Program: NSF Convergence Accelerator

Agency: National Science Foundation NSF PD 19-095Y

RFP Website:

https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505665&org=NSF&sel_org=NSF&from=fund

Brief Description: With the NSF Convergence Accelerator, NSF's goals are: (i) to pilot a new NSF capability to accelerate use-inspired convergence research in areas of national importance, and (ii) to initiate convergence team-building capacity around exploratory, potentially high-risk proposals in specific convergence topics (tracks). The NSF Convergence Accelerator supports use-inspired, goal-oriented, basic research, encouraging rapid advances through partnerships that include multiple stakeholders (e.g., industry, academic, not-for-profits, government entities, and others). The NSF Convergence Accelerator brings teams together in a cohort that are all focused on a common research goal of national importance, but which may be pursuing many different approaches.

As a funder of research and education across all fields of science and engineering and with relationships with universities and funding agencies around the world, NSF is uniquely positioned to pilot this approach to accelerate discovery and innovation. Teams supported by the NSF Convergence Accelerator will focus on grand challenges that require a convergence approach. The teams are multidisciplinary and leverage partnerships; tracks within the NSF Convergence Accelerator relate to a grand challenge problem and have a high probability of resulting in deliverables that will benefit society within a fixed term. The NSF Convergence Accelerator is modeled on acceleration and innovation activities from the most forward-looking companies and universities.

Specific funding opportunities will be announced through Dear Colleague Letters, program announcements, and/or solicitations. For more information see the NSF Convergence Accelerator website: <https://www.nsf.gov/od/oia/convergence-accelerator/index.jsp>

Awards: Standard Grants.

Letter of Intent: Not Required

Proposal Submission Deadline: Accepted anytime

Contacts: Douglas Maughan dmaughan@nsf.gov 703-292-2497

Lara A. Campbell lcampbel@nsf.gov (703) 292-7049

Evan K. Heit ekheit@nsf.gov (703) 292-4305

Nancy U. Kamei nkamei@nsf.gov 703 292 7236

Grant Program: Innovative Technology Experiences for Students and Teachers (ITEST)

Agency: National Science Foundation NSF 19-583

RFP Website: <https://www.nsf.gov/pubs/2019/nsf19583/nsf19583.htm>

Brief Description: ITEST is an applied research and development (R&D) program providing direct student learning opportunities in pre-kindergarten through high school (PreK-12). The learning opportunities are based on innovative use of technology to strengthen knowledge and interest in science, technology, engineering, and mathematics (STEM) and information and communication technology (ICT) careers. To achieve this purpose, ITEST supports projects that engage students in technology-rich experiences that: (1) increase awareness and interest of STEM and ICT occupations; (2) motivate students to pursue appropriate education pathways to those occupations; and (3) develop STEM-specific disciplinary content knowledge and practices that promote critical thinking, reasoning, and communication skills needed for entering the STEM and ICT workforce of the future.

ITEST seeks proposals that pursue innovative instructional approaches and practices in formal and informal learning environments, in close collaboration with strategic partnerships. ITEST proposals should broaden participation of all students, particularly those in underrepresented and underserved groups in STEM fields and related education and workforce domains. ITEST supports three types of projects: (1) Exploring Theory and Design Principles (ETD); (2) Developing and Testing Innovations (DTI); and (3) Scaling, Expanding, and Iterating Innovations (SEI). ITEST also supports Synthesis and Conference proposals.

Awards: Standard Grants.

Anticipated Funding Amount: \$25,000,000

Letter of Intent: Not Required

Proposal Submission Deadline: August 19, 2019

Contacts: Address questions to the Program, telephone: (703) 292-8620, email: DRLITEST@nsf.gov

Grant Program: Research Experiences for Undergraduates (REU) Sites and Supplements

Agency: National Science Foundation NSF 19-582

RFP Website: <https://www.nsf.gov/pubs/2019/nsf19582/nsf19582.htm>

Brief Description: The Research Experiences for Undergraduates (REU) program supports active research participation by undergraduate students in any of the areas of research funded by the National Science Foundation. REU projects involve students in meaningful ways in ongoing research programs or in research projects specifically designed for the REU program. This solicitation features two mechanisms for support of student research: (1) *REU Sites* are based on independent proposals to initiate and conduct projects that engage a number of students in research. REU Sites may be based in a single discipline or academic department or may offer interdisciplinary or multi-department research opportunities with a coherent intellectual theme. Proposals with an international dimension are welcome. (2) *REU Supplements* may be included as a component of proposals for new or renewal NSF grants or cooperative agreements or may be requested for ongoing NSF-funded research projects.

Undergraduate student participants in either REU Sites or REU Supplements must be U.S. citizens, U.S. nationals, or permanent residents of the United States.

Students do not apply to NSF to participate in REU activities. Students apply directly to REU Sites or to NSF-funded investigators who receive REU Supplements. To identify appropriate REU Sites, students should consult the directory of active REU Sites on the Web

at https://www.nsf.gov/crssprgm/reu/reu_search.cfm.

Awards: Standard Grants. **Estimated Number of Awards:** 1,750 to 1,800

This estimate includes approximately 180 new Site awards and 1,600 new Supplement awards each year.

Anticipated Funding Amount: \$76,370,000

Letter of Intent: Not Required

Proposal Submission Deadline: August 28, 2019

Contacts: [NSF REU Site Contacts](#)

Grant Program: Computer and Information Science and Engineering (CISE) Research Initiation Initiative (CRII)

Agency: National Science Foundation NSF 19-579

RFP Website: <https://www.nsf.gov/pubs/2019/nsf19579/nsf19579.htm>

Brief Description: The NSF Directorate for Computer and Information Science and Engineering (CISE) seeks to award grants intended to support research independence among early-career academicians who specifically lack access to adequate organizational or other resources. It is expected that funds obtained through this program will be used to support untenured faculty or research scientists (or equivalent) in their first three years in a primary academic position after the PhD, but not more than five years after completion of their PhD. Applicants for this program may not yet have received any other grants or contracts in the PI role from any department, agency, or institution of the federal government, including from the CAREER program or any other program, post-PhD, regardless of the size of the grant or contract, with certain exceptions as noted below. Serving as co-PI, Senior Personnel, Postdoctoral Fellow, or other Fellow does not count against this eligibility rule.

Importantly, the CRII program seeks to provide essential resources to enable early-career PIs to launch their research careers. For the purposes of this program, CISE defines “essential resources” as those that (a) the PI does not otherwise have, including through organizational or other funding and (b) are critical for the PI to conduct early-career research that will enable research independence. In particular, this program is not appropriate for PIs who already have access to resources to conduct any early-career research.

It is expected that these funds will allow the new CRII PI to support one or more graduate students for up to two years. Faculty at undergraduate and two-year institutions may use funds to support undergraduate students, and may use the additional RUI designation (which requires inclusion of a RUI Impact Statement) -- see https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5518 for additional information. In addition, submissions from all institutions may use funds for postdoctoral scholars, travel, and/or research equipment.

Awards: Standard Grant. Each award will be up to \$175,000 for a period of 24 months. Anticipated Funding: \$10,000,000.

Letter of Intent: Not Required

Proposal Submission Deadline: August 14, 2019

Contacts: Almadena Y. Chtchelkanova, Program Director, CCF, telephone: (703) 292-8910, email: achtchel@nsf.gov

- Ephraim P. Glinert, Program Director, IIS, telephone: (703) 292-8930, email: eglinert@nsf.gov
 - Mimi McClure, Associate Program Director, CNS, telephone: (703) 292-8950, email: mmcclure@nsf.gov
 - Alan Sussman, Program Director, telephone: (703) 292-8970, email: alassussm@nsf.gov
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Grant Program: Physics Frontiers Centers (PFC)

Agency: National Science Foundation NSF 19-578

RFP Website: <https://www.nsf.gov/pubs/2019/nsf19578/nsf19578.htm>

Brief Description: The Physics Frontiers Centers (PFC) program supports university-based centers and institutes where the collective efforts of a larger group of individuals can enable transformational advances in the most promising research areas. The program is designed to foster major breakthroughs at the intellectual frontiers of physics by providing needed resources such as combinations of talents, skills,

disciplines, and/or specialized infrastructure, not usually available to individual investigators or small groups, in an environment in which the collective efforts of the larger group can be shown to be seminal to promoting significant progress in the science and the education of students. Activities supported through the program are in all sub-fields of physics within the purview of the Division of Physics: atomic, molecular, optical, plasma, elementary particle, nuclear, particle astro-, gravitational, and biological physics. Interdisciplinary projects at the interface between these physics areas and other disciplines and physics sub-fields may also be considered, although the bulk of the effort must fall within one of those areas within the purview of the Division of Physics. The successful PFC activity will demonstrate: (1) the potential for a profound advance in physics; (2) creative, substantive activities aimed at enhancing education, diversity, and public outreach; (3) potential for broader impacts, e.g., impacts on other field(s) and benefits to society; (4) a synergy or value-added rationale that justifies a center- or institute-like approach.

Awards: Cooperative Agreement. Anticipated Funding: \$8,000,000. Individual PFC awards are expected to range in size between \$1.0 million/year and \$5.0 million/year. The number of awards in FY 2020 is expected to be in the range 3-5, depending upon the availability of funds and the quality of proposals received. Awards will be made for five years, with an option for a one-year extension.

Letter of Intent: Not Required

Limit on Number of Proposals per Organization: 2; No more than two preliminary proposals may be submitted by any one institution. The same limitation applies to full proposals.

Preliminary Proposal Due Date(s) (required) (due by 5 p.m. submitter's local time): August 01, 2019

Full Proposal Deadline(s) (due by 5 p.m. submitter's local time): January 30, 2020; by invitation only.

Contacts: Jean Cottam Allen, Program Director, telephone: (703) 292-8783, email: jcallen@nsf.gov

- Kathleen McCloud, Program Director, telephone: (703) 292-8236, email: kmcccloud@nsf.gov

Grant Program: Division of Chemistry: Disciplinary Research Programs (CHE-DRP)

Agency: National Science Foundation NSF 19-577

RFP Website: <https://www.nsf.gov/pubs/2019/nsf19577/nsf19577.htm>

Brief Description: This solicitation applies to nine CHE Disciplinary Chemistry Research Programs: Chemical Catalysis (CAT); Chemical Measurement and Imaging (CMI); Chemical Structure, Dynamics and Mechanisms-A (CSDM-A); Chemical Structure Dynamics and Mechanisms-B (CSDM-B); Chemical Synthesis (SYN); Chemical Theory, Models and Computational Methods (CTMC); Chemistry of Life Processes (CLP); Environmental Chemical Sciences (ECS); and Macromolecular, Supramolecular and Nanochemistry (MSN).

All proposals submitted to these nine CHE Disciplinary Research Programs (other than the following exceptions) must be submitted through this solicitation, otherwise they will be returned without review.

Exceptions:

- Faculty Early Career Development Program (CAREER) proposals should be submitted through the CAREER solicitation (https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503214) by the CAREER deadline date specified.
- Facilitating Research at Primarily Undergraduate Institutions: Research in Undergraduate Institutions (RUI) and Research Opportunity Awards (ROA) proposals should be submitted through the RUI/ROA solicitation (https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5518) during the window for the appropriate CHE Disciplinary Research Program. In addition to the requirements of the RUI program, proposals should follow the guidance in this solicitation.
- Proposals for Early-concept Grants for Exploratory Research (EAGER), Grants for Rapid Response Research (RAPID), Research Advanced by Interdisciplinary Science and Engineering (RAISE), and conferences can be submitted anytime after consultation with the cognizant NSF Program Officer.

- Supplemental funding requests to existing grants can be submitted anytime after consultation with the cognizant NSF Program Officer.

Awards: Standard Grant. Anticipated Funding: \$150,000,000.

Letter of Intent: Not Required

Proposal Submission Deadline: September 01, 2019 - September 30, 2019

Contacts: For CTMC: Evelyn Goldfield, telephone: (703) 292-2173, email: egoldfie@nsf.gov

- For CLP: Catalina Achim, telephone: (703) 292-2048, email: cachim@nsf.gov
- For CSDM-A: Colby A. Foss, telephone: (703) 292-5327, email: cfoss@nsf.gov
- For CMI: Kelsey D. Cook, telephone: (703) 292-7490, email: kcook@nsf.gov
- For CSDM-B: Tingyu Li, telephone: (703) 292-4949, email: tli@nsf.gov

Grant Program: Centers for Chemical Innovation (CCI): Phase I Awards and New/Renewal Phase II Centers

Agency: National Science Foundation NSF 19-576

RFP Website: <https://www.nsf.gov/pubs/2019/nsf19576/nsf19576.htm>

Brief Description: The Centers for Chemical Innovation (CCI) Program supports research centers focused on major, long-term fundamental chemical research challenges. CCIs that address these challenges will produce transformative research, lead to innovation, and attract broad scientific and public interest. CCIs are agile structures that can respond rapidly to emerging opportunities through enhanced collaborations. CCIs integrate research, innovation, education, broadening participation, and informal science communication.

The CCI Program is a two-phase program. Both phases are described in this solicitation. Phase I CCIs receive significant resources to develop the science, management and broader impacts of a major research center before requesting Phase II funding. Satisfactory progress in Phase I is required for Phase II applications; Phase I proposals funded in FY 2020 will seek Phase II funding in FY 2023. The FY 2020 Phase I CCI competition is open to projects in all fields supported by the Division of Chemistry, and must have scientific focus and the potential for transformative impact in chemistry. *NSF Chemistry particularly encourages fundamental chemistry projects related to one or more of NSF's [10 Big Ideas](#).*

The FY 2020 Phase II CCI competition is open to projects funded as Phase I awards in FY 2017 and the renewal of the Center for Sustainable Nanotechnology.

Awards: Standard Grant. Anticipated Funding: \$17,400,000.

Letter of Intent: Not Required

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

August 13, 2019: Phase I Preliminary Proposals

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

October 16, 2019: Phase II Full Proposals, New and Renewal

February 19, 2020: Phase I Full Proposals, by invitation only

Contacts: Michelle M. Bushey, telephone: (703) 292-4938, email: mbushey@nsf.gov

- Katharine J. Covert, telephone: (703) 292-4950, email: kcovert@nsf.gov
- Colby A. Foss, telephone: (703) 292-5327, email: cfoss@nsf.gov

Grant Program: Methodology, Measurement, and Statistics (MMS)

Agency: National Science Foundation NSF 19-575

RFP Website: <https://www.nsf.gov/pubs/2019/nsf19575/nsf19575.htm>

Brief Description: The Methodology, Measurement, and Statistics (MMS) Program is an interdisciplinary program in the Directorate for Social, Behavioral, and Economic Sciences that supports the development of innovative analytical and statistical methods and models for those sciences. MMS

seeks proposals that are methodologically innovative, grounded in theory, and have potential utility for multiple fields within the social, behavioral, and economic sciences. As part of its larger portfolio, the MMS Program partners with a consortium of federal statistical agencies to support research proposals that further the production and use of official statistics.

The MMS Program provides support through a number of different funding mechanisms. The following mechanisms are addressed in this solicitation:

- Regular Research Awards
- Awards for conferences and community-development activities
- Doctoral Dissertation Research Improvement (DDRI) Grants
- Research Experience for Undergraduates (REU) Supplements

MMS also supports Faculty Early Career Development (CAREER) awards. Please see the [CAREER Program Web Site](#) for more information about this activity.

Awards: Standard Grant. Anticipated Funding: \$3,760,000.

Letter of Intent: Not Required

Proposal Submission Deadline: August 29, 2019

Contacts: Cheryl L. Eavey - Program Director, telephone: (703) 292-7269, email: ceavey@nsf.gov

- Liana A. Denola - Social Scientist, telephone: (703) 292-2675, email: ldenola@nsf.gov
- Robbie W. Brown - Program Specialist, telephone: (703) 292-7264, email: rbrown@nsf.gov

Grant Program: Secure and Trustworthy Cyberspace Frontiers (SaTC Frontiers)

Agency: National Science Foundation NSF 19-572

RFP Website: <https://www.nsf.gov/pubs/2019/nsf19572/nsf19572.htm>

Brief Description: In today's increasingly networked, distributed, and asynchronous world, cybersecurity involves hardware, software, networks, data, people, and integration with the physical world. Society's overwhelming reliance on this complex cyberspace, however, has exposed its fragility and vulnerabilities that defy existing cyber-defense measures; corporations, agencies, national infrastructure and individuals continue to suffer cyber-attacks. Achieving a truly secure cyberspace requires addressing both challenging scientific and engineering problems involving many components of a system, and vulnerabilities that stem from human behaviors and choices. Examining the fundamentals of security and privacy as a multidisciplinary subject can lead to fundamentally new ways to design, build and operate cyber systems, protect existing infrastructure, and motivate and educate individuals about cybersecurity. The Secure and Trustworthy Cyberspace (SaTC) program welcomes proposals that address cybersecurity and privacy, and draw on expertise in one or more of these areas: computing, communication and information sciences; engineering; economics; education; mathematics; statistics; and social and behavioral sciences. Proposals that advance the field of cybersecurity and privacy within a single discipline or interdisciplinary efforts that span multiple disciplines are both encouraged.

Through this solicitation—under the SaTC umbrella—NSF specifically seeks ambitious and potentially transformative **center-scale projects** in the area of security and privacy that (1) catalyze far-reaching research explorations motivated by deep scientific questions or hard problems and/or by compelling applications and novel technologies that promise significant scientific and/or societal benefits, and (2) stimulate significant research and education outcomes that, through effective knowledge transfer mechanisms, promise scientific, economic and/or other societal benefits. The goal of the SaTC Frontiers program is to advance the frontiers of cybersecurity and privacy, and the areas listed in the [SaTC program solicitation](#) are meant to be illustrative but not exhaustive.

Awards: Continuing Grant. The SaTC Frontiers program will support proposals from \$5,000,000 to \$10,000,000 in total budget, with durations of up to five years. Anticipated Funding: \$15,000,000.

Letter of Intent: July 05, 2019

Proposal Submission Deadline: September 30, 2019

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

- Shannon I. Beck, Associate Program Director, CISE/CNS, (703) 292-2487, email: sbeck@nsf.gov
- Dan R. Cosley, Program Director, CISE/IIS, telephone: (703) 292-8491, email: dcosley@nsf.gov

National Institutes of Health

Grant Program: Non-Invasive Neurostimulation in AD/ADRD (R01 Clinical Trial Optional)

Agency: National Institutes of Health PAR-19-298

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-19-298.html>

Brief Description: This FOA encourages applications that provide studies of initial efficacy of non-invasive neurostimulation, such as TMS, transcranial direct current stimulation (tDCS), transcranial alternating current stimulation (tACS), or transcutaneous vagal nerve stimulation (tVNS).

Applications that use realistic head modeling, provide individualized targeting based on unique anatomical features of participants, and evaluate target engagement are of particular interest.

Topics of interest for this FOA include, but are not limited to, the following:

- Studies to rigorously evaluate initial efficacy of the intervention(s).
- Multi-modal or combinations therapies with other pharmacological or non-pharmacological interventions.
- Studies to refine intervention strategy. These studies could determine appropriate dosage of stimulation (e.g., amplitude or duration), brain region to be targeted, or whether stimulation in general or in combination with training for a cognitive task is most beneficial (i.e., “online” or “offline” stimulation).
- Studies to define and refine the target population.

Examples of studies that are outside of the scope of this FOA include the following:

- Development of neurostimulation devices, or refinement of the devices themselves.
- Use of invasive neurostimulation devices.

The National Institute of Mental Health (NIMH) is particularly interested in pilot clinical trials addressing non-invasive neurostimulation in the treatment of the neuropsychiatric symptoms (NPS) or behavioral and psychological symptoms of dementia of AD/ADRD (i.e., aggression, psychosis, anxiety, apathy, depression, agitation, sleep disturbances, and wandering). NIMH is particularly interested in studies that use neurostimulation techniques as adjunctive treatments to behavioral or pharmacologic treatments for NPS symptoms.

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

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

Deadline: [Standard dates](#) apply by 5:00 PM local time of applicant organization. All [types of non-AIDS applications](#) allowed for this funding opportunity announcement are due on these dates. The first due date for this FOA is October 5, 2019.

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.

Grant Program: Research to Understand and Inform Interventions that Promote the Research Careers of Individuals in the Biomedical Sciences (R01 - Clinical Trial Not Allowed)

Agency: National Institutes of Health PAR-19-295

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-19-295.html>

Brief Description: NIGMS supports a variety of training programs designed to develop a diverse pool of scientists with the skills and motivation to transition into the biomedical research workforce. NIGMS

encourages the use of evidence-based practices and recognizes that there is need for more hypothesis-driven research to test biomedical training, mentoring and networking interventions for efficacy and replicability across career stages and at a range of institution types and to provide insights into the factors contributing to success. Through this funding announcement, NIGMS intends to enhance the evidence base for effective, high-impact, scalable interventions, and to improve our understanding of the factors contributing to success, including the social and behavioral factors involved in the advancement of individuals pursuing independent academic biomedical research careers.

Program Considerations

Projects are expected to include the use of robust experimental designs, including randomized control trial approaches, case controls, matched pair design or other rigorous designs appropriate to the research questions. The research results are expected to move beyond participant satisfaction, self-reporting of perceived skills gained, or self-reporting of effectiveness. Accordingly, the training, mentoring, and networking interventions are to be centered not only on psychosocial factors, but also on outcomes so that the results will inform the biomedical community regarding the factors and mechanisms that are most likely to influence and foster a sustained career in the biomedical research workforce.

As appropriate, the proposed studies should inform the field about the effectiveness of the duration, frequency, and intensity of the intervention and whether those effects can be enhanced by reinforcement sessions. The proposed projects should provide the scientific community with sound evidence of short, medium, and long-term effects of the intervention's efficacy. The interventions should be cost-effective, practical, realistic, scalable and sustainable at a broad range of institutions. A primary goal of the FOA is to identify principles that would inform practice, in or outside the classroom, laboratory and institution.

Award: Application budgets are limited to \$250,000 direct costs per year.

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

Deadline: [Standard dates](#) apply by 5:00 PM local time of applicant organization. All [types of non-AIDS applications](#) allowed for this funding opportunity announcement are due on these dates. The first due date for this FOA is October 5, 2019.

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.

Grant Program: NIAID New Innovators Awards (DP2 Clinical Trial Not Allowed)

Agency: National Institutes of Health PAR-19-296

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-19-296.html>

Brief Description: In 2007, the NIH developed a new program using the DP2 mechanism to support highly innovative research from promising [Early Stage Investigators](#) (defined as those within 10 years of completing their terminal research degree or postgraduate clinical training and who have not yet received substantial NIH support). With this mechanism, no detailed experimental plan or preliminary data were required. From this concept, the NIH launched the NIH Director's New Innovator Award as part of the Common Fund's [High-Risk, High-Reward Research program](#), which was created to accelerate the pace of biomedical discoveries by supporting exceptionally creative scientists with highly innovative research. The program sought to identify scientists with high-impact ideas that may be risky or at a stage too early to fare well in the traditional peer review process. The program encourages creative, outside-the-box thinkers to pursue exciting and innovative ideas.

The purpose of this new NIAID program is to expand on the successful NIH DP2 program, funding applications proposing bold new ideas from those currently in their post-doctoral training years. Through this program, NIAID wants to encourage shorter post-doctoral fellowships and provide the opportunity for creative scientists with little to no preliminary data to start their independent careers earlier.

As part of NIAID's commitment to increase opportunities for post-doctoral fellows, NIAID plans to support exceptionally creative postdoctoral investigators who propose highly innovative research projects

with the potential for unusually high impact in the mission of NIAID. The NIAID DP2 program is available to both U.S. and non-U.S. citizen postdoctoral investigators, and the award will only be activated once the applicant has obtained a U.S. faculty position. Applicants for this award must have a research or clinical doctorate (including PhD, MD, DO, DC, ND, DDS, DVM, ScD, DNS, PharmD, or equivalent doctoral degree), or a combined research and clinical doctoral degree. In addition, NIAID will fund its DP2 recipients with \$300K in direct costs per year for up to five years. The NIAID DP2 award is not renewable.

Award: Application budgets are limited to \$300K direct costs per year and need to reflect the actual needs of the proposed project.

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

Deadline: October 10, 2019, October 14, 2020, October 13, 2021, by 5:00 PM local time of applicant organization. All [types of non-AIDS applications](#) allowed for this funding opportunity announcement are due on these dates.

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

Grant Program: Brain Initiative: Research to Develop and Validate Advanced Human Cell-Based Assays To Model Brain Structure and Function (R01 Clinical Trial Not Allowed)

Agency: National Institutes of Health RFA-MH-20-140

RFP Website: <https://grants.nih.gov/grants/guide/rfa-files/RFA-MH-20-140.html>

Brief Description: The purpose of this FOA is to stimulate basic research to develop next-generation human cell-derived assays with improved fidelity to complex human brain, spinal cord, and/or sensory end organ circuit physiology, which will ultimately facilitate analysis of higher order functional deficits relevant to complex nervous system diseases. This FOA is distinct from others that focus on optimization and scalability of assays for compound screening, although projects could, in principle, have utility for late stage evaluation of drug efficacy and toxicity.

This FOA encourages innovative approaches that are first-in-class, those that propose to substantially exceed the state of the art in tissue organization and function, and/or those that aim to improve robustness and reproducibility of physiologically-relevant circuit or supportive systems-level measures. High risk, high impact approaches are encouraged. The applications should define the current state of technology as a benchmark against which the new assay system(s) will be developed and measured.

Example approaches include, but are not limited to:

- Utilization of novel materials, substrates or synthesis technologies (e.g., 3D printing, bioreactors, microfluidic platforms) to promote anatomically and physiologically relevant tissue organization and/or maturation.
- Integration of defined cell types consistent with relevant nervous system anatomy (e.g., excitatory, inhibitory & modulatory neurons, astrocytes, oligodendrocytes, microglia, pericytes, endothelial cells) into functional units (assembloids) that may include multipartite synapses, vascularization-perfusion, blood-brain barrier, glymphatic system and/or cerebrospinal fluid flow.
- Novel strategies to faithfully reproduce relevant regional cellular organization (e.g., dorsoventral, rostrocaudal, laminar, columnar or nuclei structure), with both short- and long-range anatomical connectivity (e.g., local inhibitory-excitatory and/or modulatory connections, projections to distant lamina or nuclei).
- Novel strategies to promote maturation of metabolism, signaling, synaptic activity, and connectivity in the cell-based assay.

- Development of human cell-based assays with complex functional features potentially relevant to complex nervous system disorders and diseases (e.g., intrinsic and/or dynamical network properties of cell assemblies such as neural oscillatory activity, activity-dependent plasticity).
- Inclusion of conditional or intersectional strategies that allow temporally and/or spatially cell-selective monitoring or manipulation of gene expression/function or of live cell activity and function.
- Inclusion of innovative approaches to distinguish or deconvolute heterogeneous cell phenotypes in these assays (e.g., multi-parameter single cell analysis), including those that are minimally perturbing.
- Evaluation of how data obtained from the proposed assay compares with human anatomical, histological or systems-level data, or data from other physiologically relevant paradigms, to facilitate assay validation. Investigators are encouraged to explore data and tools being developed under the [NIH BRAIN Initiative](#), [BrainSpan](#), [PsychENCODE Human Brain Development Atlas](#), [Human Connectome Project](#), [AMP-AD](#), or related efforts which if utilized could further the authentication of human brain cell-derived assays.

Award: Application budgets are limited to \$500,000 in direct costs in any project year and need to reflect the actual needs of the proposed project.

Letter of Intent: October 1, 2019

Deadline: November 1, 2019 by 5:00 PM local time of applicant organization. All [types of non-AIDS applications](#) allowed for this funding opportunity announcement are due on these dates.

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

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.

Grant Program: Research Program Award (R35 Clinical Trial Optional)

Agency: National Institutes of Health [R35 Outstanding Investigator Award RFA-NS-19-037](#)

RFP Website: <https://grants.nih.gov/grants/guide/rfa-files/RFA-NS-19-037.html>

Brief Description: The purpose of the NINDS Research Program Award (RPA) is to provide longer-term support and increased flexibility to Program Directors (PDs) /Principal Investigators (PIs) whose records of research achievement demonstrate their ability to make major contributions to neuroscience. RPAs will support the overall research programs of NINDS-funded investigators for up to 8 years, at a level commensurate with a PD/PI's recent NINDS support (Part 2, Section II) This greater funding stability will provide eligible investigators at nearly all career stages increased freedom and flexibility, allowing them to be more adventurous in their research, take greater risks, embark upon research that breaks new ground, undertake research projects that require a longer timeframe, and/or extend previous discoveries in new directions. Research supported through the RPA must be within the scope of the NINDS mission (http://www.ninds.nih.gov/about_ninds/mission.htm). Research activities outside of the NINDS mission, or traditionally supported by another NIH Institute or Center will not be considered through this program.

Other anticipated benefits of the RPA include:

- A more stable funding environment, facilitating the pursuit of longer-term research goals;
- Flexible funding, enabling investigators to pursue research opportunities as they arise, not tied to specific aims;
- Reduced time spent writing grant applications and managing multiple grant awards, thereby allowing investigators to spend more time conducting and overseeing research; and
- More time for PDs/PIs to mentor junior scientists.

Eligibility to apply through this FOA is limited to PDs/PIs who have had at least one of the following types of active NINDS grants in each of the past 5 years (that is FY15-19), with no more than one of those years in a no cost extension: R00, R01, R37, R56, DP1, DP2.

Award: NINDS intends to commit \$20 million in FY 2020 to fund up to 30 awards. NINDS will seek to ensure that RPA awards are diverse not only with respect to scientific approach and area of study, but also with respect to investigator background and career stage.

Letter of Intent: June 30, 2019

Deadline: July 30, 2019, by 5:00 PM local time of applicant organization. All [types of non-AIDS applications](#) allowed for this funding opportunity announcement are due on these dates.

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

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.

Grant Program: Postdoctoral Research Associate Training (PRAT) Program (Fi2)

Agency: National Institutes of Health PAR-19-286

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-19-286.html>

Brief Description: PRAT fellows conduct research in laboratories in the [NIH Intramural Research Program](#) in basic biomedical research areas that are within the [NIGMS mission](#). These areas include but are not limited to biological chemistry, biophysics, bioinformatics, cellular and molecular biology, computational biosciences, developmental biology, genetics, immunology, neuroscience, pharmacology, physiology, and technology development. Fellows conduct their work with sponsors who have relevant experience in these areas of research in any of the NIH Institutes or Centers with an Intramural Research Program. Because the PRAT program regularly brings fellows together to participate in seminars and other activities, this arrangement allows fellows from a wide array of scientific disciplines to interact on a regular basis and to exchange ideas.

Award: Fellowship budgets are composed of stipends and travel and training allowance up to 3 years.

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

Deadline: October 2, 2019; October 2, 2020; October 4, 2021, by 5:00 PM local time of applicant organization. All [types of applications](#) allowed for this funding opportunity announcement are due on these dates. Applicants are encouraged to apply early to allow adequate time to make any corrections to errors found in the application during the submission process by the due date.

Grant Program: Blockchain Technology to Improve SUD Care (R43/R44 - Clinical Trial Optional)

Agency: National Institutes of Health RFA-DA-20-012

RFP Website: <https://grants.nih.gov/grants/guide/rfa-files/RFA-DA-20-012.html>

Brief Description: Blockchain is a new way of storing data in a distributed ledger that allows various stakeholders to securely access the same information. Work describing a cryptographically secure chain of blocks started in the early 1990s and in 2008 the first blockchain was conceptualized and implemented the following year in the form of a cryptocurrency. Since then, uses of blockchain in industries outside of finance have emerged, including using blockchain technology to address the complex inefficiencies within health care ecosystem. This includes stakeholders ranging from insurance companies, to drug manufacturers, distributors, to clinical research organizations. Several programs have transitioned from ideation to implementation, in one case, even on a national level. In 2012, Estonia became the first country to nationalize blockchain within a healthcare system. Today, over 95% of the data generated by the county's hospital and doctors is digitized, and blockchain technology is used for assuring the integrity of stored electronic medical records as well as systems access logs.

Within the US, several government agencies have recognized the potential use of blockchain in the healthcare ecosystem. Projects have ranged from ideation to implementation. In 2016, the Office on the National Coordinator for Health Information Technology (ONC) and the National Institute of Standards and Technology (NIST), announced the Challenge, "Use of Blockchain in Health IT and Health-Related Research". The Challenge solicited white papers on the topic Blockchain technology and the potential use in health IT to address privacy, security, and scalability challenges of managing electronic health records and resources. More recently, on December 10th, 2018, under the HHS Reimagine initiative, the Department of Health and Human Services received Authority to Operate a blockchain-powered acquisition system. This initiative was the first in the US federal government and the first for public procurement in the world to utilize blockchain technology.

Award: According to statutory guidelines, total funding support (direct costs, indirect costs, fee) normally may not exceed \$150,000 for Phase I awards and \$1,000,000 for Phase II awards. However, NIH has received a waiver from SBA, as authorized by statute, to exceed the hard cap of \$225,000 for Phase I or \$1,500,000 for Phase II for specific topics.

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

By the date listed in [Part 1. Overview Information](#), prospective applicants are asked to submit a letter of intent that includes the following information:

- Descriptive title of proposed activity
- Name(s), address(es), and telephone number(s) of the PD(s)/PI(s)
- Names of other key personnel
- Participating institution(s)
- Number and title of this funding opportunity

The letter of intent should be sent to: NIDALetterofIntent@mail.nih.gov

Deadline: July 31, 2019, 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.

Grant Program: Senator Paul D. Wellstone Muscular Dystrophy Specialized Research Centers (MDSRC) (P50 Clinical Trial Optional)

Agency: National Institutes of Health RFA-NS-19-031

RFP Website: <https://grants.nih.gov/grants/guide/rfa-files/RFA-NS-19-031.html>

Brief Description: NIAMS, NICHD, NHLBI and NINDS seek to continue this MDSRC program to advance research in the muscular dystrophies leading to improved understanding of these diseases and develop effective treatments and other strategies for reducing disease consequences. Under this FOA, each Center application must propose a clinical research project and at least one other project, which could include basic, preclinical translational or clinical research. The research projects should be related to a common theme, synergistic and should leverage the multidisciplinary and collaborative environment of this Center mechanism. Awards are expected to contribute to the long-term goals of advancing understanding of the causes and natural history of the dystrophies, developing therapies and reducing the impact of one or more form(s) of muscular dystrophy, as well as the training, research resource sharing and patient/community outreach goals described below. Projects should be focused only on muscular dystrophy research and may include studies of the impact of these diseases on skeletal muscle, the heart, respiratory system, sleep, smooth muscle, the central nervous system, gut or other organ systems as well as neuropsychological or neurobehavioral studies.

Award: Applicants may request up to \$1,000,000 direct costs/year (exclusive of facilities and administrative costs of subcontractors with collaborating organizations).

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

Deadline: October 31, 2019, by 5:00 PM local time of applicant organization. All [types of non-AIDS applications](#) allowed for this funding opportunity announcement are due on this date. 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.

Grant Program: PHS 2019-02 Omnibus Solicitation of the NIH, CDC, and FDA for Small Business Innovation Research Grant Applications (Parent SBIR [R43/R44] Clinical Trial Not Allowed)

Agency: National Institutes of Health PA-19-272

[PA-19-270](#) STTR [R41/R42](#)- Phase I, Phase II, and Fast Track

[PA-19-271](#) STTR [R41/R42](#)- Phase I, Phase II, and Fast Track

[PA-19-273](#) SBIR [R43/R44](#)- Phase I, Phase II, and Fast Track

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PA-19-272.html>

Brief Description: The SBIR program is structured in three phases, the first two of which are supported using SBIR funds. The objective of Phase I is to establish the technical/scientific merit and feasibility of the proposed R/R&D efforts. The objective of Phase II is to continue the research or R&D efforts initiated in Phase I. An objective of the SBIR program is to increase private sector commercialization of innovations derived from Federal R/R&D. The objective of Phase III, where appropriate, is for the SBC to pursue with non-SBIR funds (either Federal or non-Federal) the commercialization objectives resulting from the results of the R/R&D funded in Phases I and II. In some Federal agencies, Phase III may involve follow-on, non-SBIR funded R&D, or production contracts for products or processes intended for use by the U.S. Government.

The competition for SBIR Phase I and Phase II awards satisfies the competition requirement of the Armed Services Procurement Act, the Federal Property and Administrative Services Act, and the Competition in Contracting Act. Therefore, an agency that wishes to fund an SBIR Phase III project is not required to conduct another competition in order to satisfy those statutory provisions. As a result, in conducting actions relative to a Phase III SBIR award, it is sufficient to state for purposes of a Justification and Approval pursuant to FAR 6.302-5 that the project is a SBIR Phase III award that is derived from, extends, or logically concludes efforts performed under prior SBIR funding agreements and is authorized under 10 U.S.C. 2304(b)(2) or 41 U.S.C. 253(b)(2).

Award: Total funding support (direct costs, indirect costs, fee) normally may not exceed \$252,131 for Phase I awards and \$1,680,879 for Phase II awards. NIH has received a waiver from SBA, as authorized by statute, to exceed these total award amount hard caps for specific topics. The current list of approved topics can be found at <https://sbir.nih.gov/funding#omni-sbir>. Navigate to the "Program Descriptions and Research Topics" document, Appendix A or the "2019 SBA approved topics list for budget waivers".

Letter of Intent: Not Required

Deadline: [Standard dates](#) apply, 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.

Grant Program: Imaging, Biomarkers and Digital Pathomics for the Early Detection of Premetastatic Aggressive Cancer (R01 Clinical Trial Optional)

Agency: National Institutes of Health PAR-19-264

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-19-264.html>

Brief Description: The goal of this FOA is to develop improved methods for the early detection of aggressive cancer by managing overdiagnosis, reducing false positives and identifying lethal cancers from non-lethal disease using strategies aimed at effective integration and validation of imaging, biomarkers, pathomics and other -omic data. It is acknowledged that a biomarker is conceptually defined as a

characteristic that is objectively measured and evaluated as an indicator of normal biologic processes, pathogenic processes or a biological response that could be used for early cancer detection. While imaging and biomarkers can both be derived from tissue, cancer cells, serum, plasma, urine or other bodily fluids, for the purpose of this FOA, a biomarker will specifically refer to results obtained from the analysis of biofluids and tissues that are not spatially or temporally resolved.

Likewise, imaging is referred to as a “tool” used to graphically depict spatially, functionally or temporally resolved cancer cells, tissues and their surroundings. In the context of this FOA, imaging can employ any of a variety of radiographic, sonographic, and other diagnostic technologies. Imaging and biomarker tests used in this fashion are generally obtained separately and then integrated as a function of time. An imageable biomarker, for the purpose of this FOA, combines structural, functional and/or temporal information from one or more dynamic biomarker(s) or image features that can be mapped and visualized.

Generally, imageable biomarker results are obtained simultaneously (rather than serially) and are comprised of data originating from a complex combination of cancer cells, cellular features, molecular analytes, or image derived features (genomic, proteomics, metabolomics, or other -omics data including radiomic and pathomic features) that may or may not be directly mapped for quantitative visualization, but are nonetheless associated with and derived from image-based acquisitions. Data obtained in this manner correlate to disease processes and aberrant metabolic pathways that can be applied clinically in the context of precision medicine.

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

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

Deadline: July 10, 2019; December 10, 2019; July 10, 2020; December 10, 2020; July 9, 2021; December 10, 2021, by 5:00 PM local time of applicant organization. All [types of non-AIDS applications](#) allowed for this funding opportunity announcement are due on these dates. Applicants are encouraged to apply early to allow adequate time to make any corrections to errors found in the application during the submission process by the due date.

Department of Transportation

Grant Program: Dwight David Eisenhower Transportation Fellowship Program (DDETFP)

Grants or Research Fellowship (GRF)

Agency: Department of Transportation 693JJ318NF5229-2019

Website:

https://www.fhwa.dot.gov/innovativeprograms/centers/workforce_dev/post_secondary_education.aspx

Brief Description: The Dwight David Eisenhower Transportation Fellowship Program (DDETFP) awards fellowships to students pursuing degrees in transportation-related disciplines ([PDF](#) or [HTML](#)). This program advances the transportation workforce by helping to attract the nation's brightest minds to the field of transportation, encouraging future transportation professionals to seek advanced degrees, and helping to retain top talent in the U.S. transportation industry. This funding opportunity is open to students that are U.S. citizens and non-U.S. citizens. The students must be enrolled in an IHE which must be accredited by a federally-recognized accrediting agency¹ and must be located within the United States or its territories, both administratively as well as the campus the student is attending.

Awards: The anticipated stipends for the DDETFP GRF are based on academic level and shall be calculated as follows:

¹ The U.S. Department of Education publishes a list of nationally recognized accrediting agencies on <https://www.ed.gov/accreditation>

Monthly Stipend

Master's Level Up to \$1,700
Doctoral Level Up to \$2,000

Proposal Deadline: July 25, 2019 at 3:00pm Eastern Time.

Contact Information: Ewa Flom Program Manager Phone 703-235-0532 ewa.flom@dot.gov

Grant Program: Advanced Transportation and Congestion Management Technologies Deployment Initiative

Agency: Department of Transportation 693JJ319NF00003

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

Brief Description: The DOT hereby requests applications to result in awards to eligible entities to develop model deployment sites for large scale installation and operation of advanced transportation technologies to improve safety, efficiency, system performance, and infrastructure return on investment. Grant recipients may use funds under this program to deploy advanced transportation and congestion management technologies, including—

- advanced traveler information systems;
- advanced transportation management technologies;
- infrastructure maintenance, monitoring, and condition assessment;
- advanced public transportation systems;
- transportation system performance data collection, analysis, and dissemination systems;
- advanced safety systems, including vehicle-to-vehicle and vehicle-to-infrastructure communications;
- technologies associated with autonomous vehicles, and other collision avoidance technologies, including systems using cellular technology;
- integration of intelligent transportation systems with the Smart Grid and other energy distribution and charging systems;
- electronic pricing and payment systems; or
- advanced mobility and access technologies, such as dynamic ridesharing and information systems to support human services for elderly and disabled individuals. [23.U.S.C. 503(c)(4)(E)]

Awards: Up to \$60 million in Federal funding to provide grants to eligible entities to develop model deployment sites for large scale installation and operation of advanced transportation technologies to improve safety, efficiency, system performance, and infrastructure return on investment

Proposal Deadline: July 19, 2019

Contact Information: Submit Questions to: ATCMTD@dot.gov

Grant Program: FY 2019 National Infrastructure Investments

Agency: Department of Transportation DTOS59-19-RA-BUILD

Website: <https://www.transportation.gov/buildgrants/build-nofo>

Brief Description: The Consolidated Appropriations Act, 2019 (Pub. L. 116-6, February 15, 2019) (“FY 2019 Appropriations Act”) appropriated \$900 million to be awarded by the Department of Transportation (“DOT”) for National Infrastructure Investments. This appropriation stems from the program funded and implemented pursuant to the American Recovery and Reinvestment Act of 2009 (the “Recovery Act”) and is known as the Better Utilizing Investments to Leverage Development, or “BUILD Transportation grants,” program. Funds for the FY 2019 BUILD Transportation grants program are to be awarded on a competitive basis for surface transportation infrastructure projects that will have a significant local or regional impact. The purpose of this notice is to solicit applications for BUILD Transportation grants.

The FY 2019 BUILD Transportation grant program will make awards to surface transportation infrastructure projects that will have a significant impact throughout the country. Each section of this notice contains information and instructions relevant to the application process for these BUILD Transportation grants, and all applicants should read this notice in its entirety so that they have the information they need to submit eligible and competitive applications. For this round of BUILD Transportation grants, the maximum grant award is \$25 million, and no more than \$90 million can be awarded to a single State, as specified in the FY 2019 Appropriations Act. Per statute, the FY 2019 selection criteria are the same as under the FY 2017 TIGER program, although the description for each criterion has been updated. For FY 2019 BUILD Transportation grants, the definitions of urban and rural areas differ from previous rounds. Additionally, not more than 50 percent of funds will be awarded to projects located in urban and rural areas, respectively.

Awards: The FY 2019 Appropriations Act specifies that BUILD Transportation grants may not be less than \$5 million and not greater than \$25 million, except that for projects located in rural areas (as defined in Section C.3.ii.) the award size is \$1 million. There is no minimum award size, regardless of location, for BUILD Transportation planning grants.

Proposal Deadline: July 15, 2019

Contact Information: Program staff will address questions to BUILDgrants@dot.gov throughout the application period.

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

Grant Program: DSO Office-wide Broad Agency Announcement

Agency: Department of Defense DARPA HR001119S0071

Website: <https://www.darpa.mil/work-with-us/opportunities?tFilter=&oFilter=2&sort=date>
https://www.fbo.gov/index?s=opportunity&mode=form&id=22a346a8b55f0a7040d57a8fbc19e644&tab=core&_cview=1

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

Awards: The total award value for the combined Phase 1 base and Phase 2 option is limited to \$1,000,000. This total award value includes Government funding and performer cost share (if required).

Proposal Deadline: Executive Summary Due Date: June 12, 2020, 4:00 p.m. o Abstract Due Date: June 12, 2020, 4:00 p.m. o FAQ Submission Deadline: June 2, 2020, 4:00 p.m. See Section VIII.A. o Full Proposal Due Date: June 12, 2020, 4:00 p.m.

Contact Information: BAA Email: HR001119S0071@darpa.mil

Grant Program: Program Announcement for Disruptioneering; Disruptive Capabilities for Future Warfare

Agency: Department of Defense DARPA DARPA-PA-19-02 and HR001119S0054

Website:

https://www.fbo.gov/index?s=opportunity&mode=form&id=890c20829acd406c338ac6287403f970&tab=core&_cview=0

https://www.fbo.gov/index?s=opportunity&mode=form&id=e7248da47889d975d0ccb0261d002a9a&tab=core&_cview=1

Brief Description: The mission of the Defense Advanced Research Projects Agency is to make strategic, early investments in science and technology that will have long-term positive impact on our nation's national security. As part of this mission, DARPA makes high-risk, high-reward investments in science and technology that have the potential to disrupt current understanding and/or approaches. The pace of discovery in both science and technology is accelerating worldwide, resulting in new fields of study and the identification of scientific areas ripe for disruption. While DARPA's existing investment strategy continues to yield success, in order to capitalize on these new opportunities, its approach to investing must include faster responses with more small, targeted investments. This new approach is called Disruptioneering. Disruptioneering will enable DARPA to initiate a new investment in less than 90 days from idea inception.

HR001119S0054: The Tactical Technology Office of the Defense Advanced Research Projects Agency is soliciting executive summaries, proposal abstracts and proposals for applied research, advanced technology development, and platform demonstrations that aim to enable disruptive capabilities for future warfare.

Awards: The total award value for the combined Phase 1 base and Phase 2 option is limited to \$1,000,000. This total award value includes Government funding and performer cost share (if required).

Proposal Deadline: RFP is open until March 18, 2020

HR001119S0054: June 11, 2020

Contact Information: BAA Coordinator DARPA-PA-19-02@darpa.mil
HR001119S0054@darpa.mil

Grant Program: Materials Science in Extreme Environments University Research Alliance (MSEE-URA)

Agency: Department of Defense Defense Threat Reduction Agency HDTRA1-19-S-0003-MSEE-URA

Website: <https://www.grants.gov/>

Brief Description: DTRA is seeking to develop the capability to understand material properties and associated mechanisms in various extreme environments that may lead to future exploitation. The approach is to realize a materials and properties capability by establishing a new University Research Alliance (URA) focused on Materials Science in Extreme Environments (MSEE). The focus of the MSEE-URA will be to advance the fundamental understanding of various material properties and mechanisms in non-equilibrium high pressure, high temperature, and high photon number regimes. The foundational problem to be addressed by the MSEE-URA is the lack of knowledge and predictive modeling capability for various material classes and their associated formation/decomposition mechanisms within harsh Weapons of Mass Destruction (WMD)- related environments. That lack of knowledge poses a challenge in the ability to control and exploit future material-WMD interactions. To address this problem, the MSEE-URA seeks proposals focusing on understanding, controlling, characterizing, and predicting interactions of materials in extreme pressure, temperature, and optical environments. A wide range of WMD-relevant environments are of interest including: conventional fireballs, nuclear fireballs, photon-induced blow-off, plasmas, and warm dense matter. These

environments are challenging not only due to the temperatures, pressures, and energies involved, but also the rapid evolution of the environments and the need to model across multiple time, energy, and physical time scales. Limited experimental testing opportunities and diagnostics adds to the challenge of understanding material responses in these extreme environments. A comprehensive integrated and collaborative approach is required to make progress on these challenges.

The four research areas for the MSEE-URA are as follows and include possible desired research outcomes within those four research areas. • Material Properties and Failure – (a) Produce materials constitutive models and failure models applicable at fast rates ($10^2 - 10^6 \text{ s}^{-1}$) for hard rock and cementitious materials; (b) Experimentally identify material properties contributing to sensitivity of energetics and composite materials (including reactives and additively manufactured materials); (c) Identify material property/numerical sources of uncertainty and sensitivities for nuclear models. • Materials Development and Manufacturing for Synergistic Effects - (a) Develop structure-function-property relationships of additively manufactured reactive materials, additive manufacturing of multifunctional nanocomposites, ignition/combustion, dynamic imaging of post combustion fields; (b) Fabricate multifunctional shielding materials that incorporate electromagnetic pulse (EMP) shielding while maintaining other requirements such as weight, cost, ballistic protection, ionizing radiation protection; (c) Identify combinations of energetics/non-energetic materials that produce synergistic effects and/or identify material properties that may lend well to tailored performance. • Chemistry in Extreme Environments - (a) Construct validation models that predict nuclear fireball behavior in complex urban environments and identify fundamental experimental measurements that could improve models. (b) Develop high temperature/high heating rate chemical mechanisms and associated Arrhenius kinetic models for low vapor pressure organophosphorous species. • Photon-Material Interactions - (a) Improve understanding and predictive models of X-ray energy deposition, material blow-off, and plasma generation and evolution for ensuring the survivability of space solar arrays and strategic systems; (b) Improve models, materials, and approaches for utilizing direct laser impulse testing to simulate blow-off impulse of strategic systems.

Awards: The CA may range from \$5M to \$7M annually (total, including both direct and indirect costs) depending on the nature and the scope of work.

Proposal Deadline: Applicants must submit a Letter of Intent (LoI) no later than 21 June 2019 to be considered eligible to submit a Phase I pre-proposal. Phase I pre-proposal submissions are due on 17 July 2019

Contact Information: Questions regarding the content of this BAA must be addressed to the following email address: DTRA-URA-Program@mail.mil

Grant Program: DoD Psychological Health and Traumatic Brain Injury, Federal Interagency Traumatic Brain Injury Research Analysis Award

Agency: Department of Defense Dept. of the Army – USAMRAA W81XWH-19-PHTBIRP-FITBIRA

Website: <https://ebrap.org/eBRAP/public/index.htm>

Brief Description: FITBIR is an informatics system created through a collaborative effort between the USAMRMC and the National Institute of Neurological Disorders and Stroke (NINDS) of the National Institutes of Health (NIH). Based on the award-winning Biomedical Research Informatics Computing System (BRICS) platform, FITBIR serves as the premier platform to share human subject data across the TBI field. The goal of FITBIR is to accelerate research progress by allowing for re-analysis, aggregation, and rigorous comparison of deidentified data to facilitate new insights in the understanding, diagnosis, and treatment of TBI. FITBIR's usefulness is facilitated by the use of Global Unique Identifiers (GUIDs) and common data elements (CDEs). GUIDs are unique alpha-numeric identifiers for study participants that facilitate deidentified data sharing and tracking across multiple research sites and studies. A GUID is

generated from a subject's personally identifiable information (PII) using a complex algorithm; the PII cannot be reverse engineered from the GUID. Only a subject's GUID is shared with FITBIR and the subject's PII remains protected. CDEs, developed as part of an initiative led by NINDS, are a set of data collection standards within the neuroscience research community. CDEs are identified and defined by subject matter experts. CDE development is an ongoing process that evolves with the needs of the field. Currently, FITBIR contains over 3.7 million (M) data records for over 70,000 subjects from studies funded by the DoD and NINDS. This comprehensive dataset includes demographics, outcome assessments, imaging, and biomarkers. During an award's period of performance, the study data are in a sequestered state. However, after the period of performance ends, the data are shared publicly to all researchers with active FITBIR data access accounts. As of May 2019, data from 15 completed studies and over 4,500 research subjects are shared publicly. Please visit the FITBIR website at <https://fitbir.nih.gov/> for more information on FITBIR, currently available data, and policies for accessing shared data.

Proposed research must analyze existing FITBIR data. Funding from the FITBIR Analysis Award will not support animal research or prospective (active) enrollment of human subjects. Applications may supplement FITBIR data with other public or private data sources. Applicants are expected to demonstrate access to shared data or restricted data within FITBIR at the time of application submission. Proof of an approved FITBIR Data Access Request is required at the time of application submission (Attachment 7). The FITBIR Data Access Request form can be found at <https://fitbir.nih.gov/content/get-account>.

Awards: The anticipated total costs budgeted for the entire period of performance for an FY19 JPC-6/CCCRP PH/TBI FITBIR Analysis Award will not exceed \$750,000.

Proposal Deadline: Pre-Application Submission Deadline: 5:00 p.m. Eastern time (ET), July 10, 2019 • Application Submission Deadline: 11:59 p.m. ET, August 1, 2019

Contact Information: CDMRP Help Desk Phone: 301-682-5507 Email: help@eBRAP.org

Grant Program: DoD Vision, Investigator- Initiated Research Award

Agency: Department of Defense Dept. of the Army – USAMRAA W81XWJ-19-VRP-IIRA W81XWH-19-VRP-TRA : DoD Vision, Translational Research Award

Website: <https://ebrap.org/eBRAP/public/index.htm>

Brief Description: To meet the intent of the award mechanism, applications to the FY19 VRP Investigator-Initiated Research Award (IIRA) must address research in one or more of the following Focus Areas: • Eye injury or visual dysfunction as related to a military-relevant traumatic event. Examples of military-relevant trauma may include, but are not limited to: ○ Blast, blunt, thermal, or chemical trauma ○ Trauma caused by directed energy weapons such as laser, microwaves, and particle beams • Diagnosis and treatment of eye injuries in austere environments and prolonged field care settings.

The FY19 VRP IIRA is intended to support studies that will yield highly impactful discoveries or major advancements in the research and/or patient care of eye injury and/or visual dysfunction as related to military-relevant trauma. Research projects may focus on any phase of research (e.g., basic, translational, applied, clinical, observational), excluding clinical trials. The research idea or solution should be innovative or novel, or a significant advancement over existing ideas or solutions, as applicable.

Awards: Funding Level 1 supports exploratory, innovative, high-risk/high-reward research that is in the earliest stages of idea development.

Funding Level 2 supports the advancement of more mature research toward clinical translation. The proposed research must be innovative or novel or offer significant refinements, improvements, or new applications of existing ideas or solutions.

Estimated Total Program Funding: \$6,080,000

Proposal Deadline: Pre-Application Submission Deadline: 5:00 p.m. Eastern time (ET), August 6, 2019
• Invitation to Submit an Application: September 2019 • Application Submission Deadline: 11:59 p.m. ET, December 6, 2019
Contact Information: CDMRP Help Desk Phone: 301-682-5507 Email: help@eBRAP.org

Grant Program: DoD Duchenne Muscular Dystrophy, Idea Development Award
Agency: Department of Defense Dept. of the Army – USAMRAA W81XWH-19-DMDRP-IDA
Website: <https://ebrap.org/eBRAP/public/index.htm>

Brief Description: All applications for the FY19 DMDRP Idea Development Award must address opportunities and challenges in the development of safe and effective macromolecular and cellular therapies that address primary pathology of DMD. Eligible therapeutic strategies include: gene therapy, genome editing, oligonucleotide therapies, exon skipping, protein therapeutics, and cell therapies. Studies proposed under this award may include: • Delivery to skeletal muscle and heart (e.g., ligand assisted, nanoparticles, identification of biological barriers to delivery, and alternative vectors) • Immunosuppression, vector modification, and other strategies to facilitate repeat administration of biologic therapies • Targeting muscle stem cells • Cell-based therapies, including but not limited to: selection of novel cell types, expansion, cell delivery and homing, differentiation, and integration

The DMDRP Idea Development Award supports the development of innovative, high-risk/highreward research that could lead to critical discoveries or major advancements that will accelerate progress in improving outcomes for individuals with DMD. This award mechanism is designed to support innovative ideas with the potential to yield impactful data and new avenues of investigation.

Awards: The anticipated direct costs budgeted for the entire period of performance for an FY19 DMDRP Idea Development Award will not exceed \$350,000.

The FY19 appropriation is \$2.8M.

Proposal Deadline: Pre-Application Submission Deadline: 5:00 p.m. Eastern time (ET), August 21, 2019
• Invitation to Submit an Application: September 27, 2019 • Application Submission Deadline: 11:59 p.m. ET, December 4, 2019

Contact Information: CDMRP Help Desk Phone: 301-682-5507 Email: help@eBRAP.org

Grant Program: DoD Peer Reviewed Alzheimer's, Convergence Science Research Award
Agency: Department of Defense W81XWH-19-PRARP-CSRA
W81XWH-19-PRARP-RPA DoD Peer Reviewed Alzheimer's, Research Partnership Award

Website: <https://ebrap.org/eBRAP/public/index.htm>
<https://www.grants.gov/web/grants/search-grants.html>

Brief Description: The FY19 PRARP seeks applications for the following Focus Areas. The Focus Areas are mechanism specific. Applicants are encouraged to review Section II.B, Award Information, for guidance on which Focus Areas an application should address in support of the FY19 PRARP Overarching Challenges. An application that proposes research outside of these FY19 PRARP Focus Areas is acceptable for all mechanisms, as long as the applicant provides a strong rationale. These should be carefully considered as part of the application process. • Mechanisms of Pathogenesis: Identification of contributing mechanisms to include circuit dysfunction associated with TBI and subsequent AD/ADRD. • Biomarkers: Development of methods to diagnose, prognose, or characterize neurological changes or risk/resiliency factors associated with TBI and subsequent AD/ADRD. • Quality of Life: Research intended to alleviate, stabilize, or characterize the symptoms, or deficits, common to TBI and AD/ADRD. • Family and Caregiver Support: Research intended to reduce the burden of care on the caregivers or families of individuals living with the common symptoms or deficits of TBI and AD/ADRD.

- **Epidemiology:** Utilize new and existing studies and datasets to examine the relationships between risk and resiliency factors for TBI and subsequent AD/ADRD.
- **Novel Target Identification:** Basic research (non-human) directly leading to identification of new targets for the development of existing or new investigational medicines, drugs, or agents for TBI and subsequent AD/ADRD.
- **Nonpharmacological Interventions and Devices:** Research into non-medication-based interventions and devices to improve quality of life or caregiving for those living with the common symptoms of TBI and AD/ADRD.
- **Bioinformatics:** Tools, including machine learning, to access, annotate, curate, store, and visualize large existing or novel datasets, e.g., multimodal magnetic resonance imaging (MRI), other imaging techniques, surveys, questionnaires, and diagnostics for TBI and subsequent AD/ADRD.

Awards: The FY19 PRARP CSRA offers two levels of funding. Funding Level I is intended to support early-career investigators within 3 years of their first independent faculty position, from any field or discipline.

For Funding Level I: The anticipated direct costs budgeted for the entire period of performance for a Funding Level I FY19 PRARP CSRA will not exceed \$225,000. The maximum period of performance is 3 years. For Funding Level II: The anticipated direct costs budgeted for the entire period of performance for a Funding Level II FY19 PRARP CSRA will not exceed \$500,000. The maximum period of performance is 3 years.

Proposal Deadline: Pre-Application Submission Deadline: 5:00 p.m. Eastern time (ET), June 26, 2019 • Application Submission Deadline: 11:59 p.m. ET, July 17, 2019

Contact Information: CDMRP Help Desk Phone: 301-682-5507 Email: help@eBRAP.org

Grant Program: DoD Peer Reviewed Orthopedic, Applied Research Award

Agency: Department of Defense Dept. of the Army – USAMRAA W81XWH-19-PRORP-ARA

Website: <https://ebrap.org/eBRAP/public/index.htm>

Brief Description: An estimated 3,700 civilian amputations occur annually as a result of traumatic injury. In the military, extremity battle wounds comprise approximately 50% of injuries reported in the Joint Theater Trauma Registry. Additionally, orthopaedic injuries and conditions that occur outside of combat (during training, leisure activities, resultant from old injuries, etc.) present one of the greatest threats to the readiness of our Service members and military. Early stabilization and treatment of orthopaedic injuries in both civilian and military populations have led to better outcomes, particularly in the prevention of secondary complications and in minimizing morbidity. Availability of orthopaedic care and treatment as early as possible, or as close to the point of injury as possible, also minimizes limb loss and loss of military readiness. All applications must address one of the following FY19 PRORP ARA Focus Areas. Selection of the appropriate Focus Area is the responsibility of the applicant. Studies that propose nominal or iterative advancements are not encouraged.

Awards: Appropriations for the PRORP from FY09 through FY18 totaled \$368.5 million (M). The FY19 appropriation is \$30M.

Proposal Deadline: Pre-Application Submission Deadline: June 26, 2019 • Invitation to Submit an Application: July 29, 2019 • Application Submission Deadline: September 18, 2019

Contact Information: CDMRP Help Desk Phone: 301-682-5507 Email: help@eBRAP.org

Grant Program: DoD Hearing Restoration Focused Program Award

Agency: Department of Defense Dept. of the Army – USAMRAA W81XWH-19-HRRP-FRA

Website: <https://ebrap.org/eBRAP/public/index.htm>

Brief Description: The HRRP will fund innovative research that has the potential to maximize operational performance, medical readiness, and quality of life for Service members, Veterans, and others living with significant auditory system injuries. II.A.1. FY19 HRRP Focused Research Award (FRA) Focus Areas To meet the intent of the award mechanism, all applications to the FY19 HRRP FRA must address research in one or more of the following Focus Areas: • Develop or validate techniques/methods to assess, diagnose, or treat auditory dysfunction as related to synaptopathy, hidden hearing loss, and central auditory processing disorders. Examples include, but are not limited to: ○ Diagnostic tests that help differentiate sensory, neural, synaptic, and central processing disorders ○ Diagnostic tools for use in forward or remote deployed settings to assess hidden hearing loss and to inform whether the individual’s hearing capability is sufficient to perform the duties of the job or work assignment ○ Treatments for the various types of damage that result in the auditory dysfunction leading to decreased ability to adequately perform the duties of the job or work assignment • Accelerate translation of biological regeneration/repair mechanisms into therapies that restore auditory function. Examples include, but are not limited to: ○ Treatments to enhance synaptic plasticity ○ Hair cell regeneration/repair/recovery; Neural regeneration/repair/recovery • Develop reliable in-vitro human models for evaluating hearing restoration therapies

Awards: Appropriations for the HRRP from FY17 through FY18 totaled \$20 million (M). The FY19 appropriation is \$10M.

Proposal Deadline: Pre-Application Submission Deadline: July 16, 2019 • Invitation to Submit an Application: August, 2019 • Application Submission Deadline: 11:59 p.m. ET, November 14, 2019

Contact Information: CDMRP Help Desk Phone: 301-682-5507 Email: help@eBRAP.org

Grant Program: DoD Epilepsy, Idea Development Award

Agency: Department of Defense Dept. of the Army – USAMRAA W81XWH-19-ERP-IDA

Website: <https://ebrap.org/eBRAP/public/index.htm>

Brief Description: The FY19 ERP seeks applications for the following Focus Areas. The Focus Areas are mechanism-specific. Applicants are encouraged to review Section II.B, Award Information, for guidance on which Focus Areas an application should address. An application that proposes research outside of these FY19 ERP Focus Areas is acceptable for all mechanisms, as long as the applicant provides a strong rationale. These should be carefully considered as part of the application process. • Innovative Research: Tools intended to better inform or improve upon how PTE research can be performed: ○ Hardware and/or software platforms that will improve seizure detection, characterization, or diagnosis ○ Bioinformatics strategies, to include machine learning, that will improve access, annotation, curation and visualization of large and novel datasets from single or multiple sources ○ Development of new models or better characterization of existing etiologically relevant models for PTE * Improved characterization of the circuits involved in PTE • Markers and Mechanisms: Identifying markers or mechanisms via preclinical models that address PTE, which may include the following: ○ Biomarkers ○ Therapeutic targets for epilepsy prevention ○ Early detection ○ Diagnosis ○ Prognosis ○ Comorbidity ○ Mortality ○ Risk stratification • Epidemiology: Epidemiological characterization of PTE following TBI, which may include the following: ○ Risk factors such as demographics, genetics, anatomy, pathology, or type of injury ○ Differentiation of PTE and psychogenic non-epileptic seizures (PNES) ○ Outcomes including latency to epilepsy, comorbidities, and mortality ○ Pre-existing conditions including psychological and psychiatric risk factors ○ Treatment and healthcare outcomes research.

Awards: Appropriations for the ERP from FY15 through FY18 totaled \$30 million (M). The FY19 appropriation is \$7.5M.

Proposal Deadline: Pre-Application Submission Deadline: 5:00 p.m. Eastern time (ET), June 26, 2019 • Application Submission Deadline: 11:59 p.m. ET, July 17, 2019

Contact Information: CDMRP Help Desk Phone: 301-682-5507 Email: help@eBRAP.org

Grant Program: Robust and Efficient Computing Architectures, Algorithms and Applications for Embedded Deep Learning

Agency: Department of Defense Department of the Air Force FA875019S7007

Website:

<https://www.fbo.gov/index.php?s=opportunity&mode=form&id=c7fb258377187a7bb851bcb73a2c747a&tab=core&cvview=0>

Brief Description: AFRL's intent is to develop and demonstrate innovative modular computing system architectures and applications to meet the Air Force's need for future real-time embedded plug-and-play capabilities. Technologies and applications may include, but are not limited to, artificial intelligence and machine learning models and algorithms for big data analytics for multi-source and multi-modal sensor data, data fusion algorithms for situation understanding and sense-making, and autonomous decision making techniques. Modular designs should support interchangeable sensors and other devices, with automatic software reconfiguration based on the available resources. Data bandwidth requirements of future systems can be expected to significantly increase. Compute and interface methods should be selected that will be scalable accordingly. Optimizations for size weight and power (SWaP) will be a priority.

AFRL also requires technologies and methods that validate, verify, and improve the scalability, robustness and security of AI/ML technology, particularly deep learning models and algorithms. The research topics may include developing methods for power-aware and energy -optimized deep learning models and algorithms when deployed in embedded computing environments with dynamic data. The research topics may also include exploitation approaches and robustness enhancement techniques for deep learning systems. Areas related to developing robust and secure ML systems should be addressed such as exploring and quantifying design optimization, and performance-robustness tradeoff analysis methods. The need exists to investigate methods for quantifying the impact of various acceleration and efficient learning techniques on the robustness of deep learning systems. The vulnerability impact of deep learning systems implemented on different hardware platforms should be considered.

Awards: Individual awards will not normally exceed 36 months with dollar values normally ranging from \$1M to \$3M. There is also the potential to make awards up to any dollar value as long as the value does not exceed the available BAA ceiling amount.

Proposal Deadline: White Papers: FY20 by 31 July 2019

FY21 by 29 May 2020

FY22 by 28 May 2021

FY23 by 27 May 2022

Contact Information: Albert Frantz, AFRL/RITB Telephone: (315) 330-4713

Email: albert.frantz@us.af.mil

Department of Education

Grant Program: Fulbright-Hays Group Projects Abroad (GPA) Short-Term Project

Agency: Department of Education CFDA Number 84.021A

Website: <https://www.govinfo.gov/content/pkg/FR-2019-01-24/pdf/2019-00107.pdf>

Brief Description: The purpose of the Fulbright-Hays GPA Program is to promote, improve, and develop modern foreign languages and area studies at varying levels of education. The program provides opportunities for faculty, teachers, and undergraduate and graduate students to conduct individual and

group projects overseas to carry out research and study in the fields of modern foreign languages and area studies. This notice relates to the approved information collection under OMB control number 1840-0792.

This competition invites applicants to submit an application to request support for either a Fulbright-Hays GPA short-term project (GPA short-term projects 84.021A) or a Fulbright-Hays GPA long-term project (GPA long-term projects 84.021B). Applicants must clearly indicate on the SF 424, Application for Federal Assistance cover sheet whether they are applying for a GPA short-term project (84.021A) or a GPA long-term project (84.021B). Additional submission details are included in the application package.

There are three types of GPA short-term projects: (1) Short-term seminar projects of four to six weeks in length designed to help integrate international studies into an institution's or school system's general curriculum by focusing on a particular aspect of area study, such as the culture of an area or country of study (34 CFR 664.11); (2) curriculum development projects of four to eight weeks in length that provide participants an opportunity to acquire resource materials for curriculum development in modern foreign language and area studies for use and dissemination in the United States (34 CFR 664.12); and (3) group research or study projects of three to twelve months in duration designed to give participants the opportunity to undertake research or study in a foreign country (34 CFR 664.13).

Awards: Up to \$100,000. Estimated total funding: \$1,000,000

Proposal Deadline: March 25, 2019; Applications available: January 24, 2019. Deadline for transmittal of applications: March 25, 2019.

Contact Information: Julius C Cotton ED Grants.gov FIND Systems Admin. Phone 202-245-6288 julius.cotton@ed.gov

Program Manager: Cory Neal, U.S. Department of Education, 400 Maryland Avenue SW, Room 258-42, Washington, DC 20202. Telephone: (202) 453-6137. Email: GPA@ed.gov .

EPA

Grant Program: Green Infrastructure to Reduce Stormwater Runoff

Early Career: Chemical Mechanisms to Address New Challenges in Air Quality Modeling

Agency: Environmental Protection Agency EPA-G2019-STAR-C1 EPA-G2019-STAR-C2

Website: <https://www.epa.gov/great-lakes-funding/great-lakes-restoration-initiative-2019-request-applications>

Brief Description: This Request for Applications (RFA) solicits applications from eligible entities for grants and/or cooperative agreements to be awarded pursuant to the Great Lakes Restoration Initiative Action Plan II (<https://www.glri.us/documents>). This RFA is EPA's major competitive grant funding opportunity under the Great Lakes Restoration Initiative ("GLRI" or "Initiative") for FY 2019 and FY 2020 and is one of several funding opportunities available through federal agencies and their funding recipients under the GLRI. EPA is seeking applications for funding to implement projects within five funding opportunities, each of which has a separate Funding Opportunity Number (FON) and is separately posted on www.grants.gov. Applicants must apply for the specific funding opportunity they are interested in. This funding opportunity is for Green Infrastructure to Reduce Stormwater Runoff.

Awards: Under this RFA, EPA expects to award a total of approximately \$14 million for about 30 nonpoint source projects in 5 categories addressing agricultural nutrients and stormwater runoff. Specifically, EPA is requesting grant applications under the following funding opportunities:

Submission Deadline: Thursday, June 6, 2019 - Webinar to discuss the RFA.

1-3 pm Central / 2-4 pm Eastern

[Register for the webinar](#) (webinar ID: 722-964-899)

Audio - Participants can use their telephone or computer mic & speakers (VoIP)

United States: 914-614-3221 , access code: 835-127-044

- **Friday, July 12, 2019** - Application deadline. Applications must be submitted to EPA through [grants.gov](https://www.epa.gov/grants) by 10:59 pm Central / 11:59 pm, Eastern.

Contact: Technical Contact: Serena Chung; phone: 202-564-6069; email: chung.serena@epa.gov
Eligibility Contact: Ron Josephson; phone: 202-564-7823; email: josephson.ron@epa.gov

Grant Program: Chemical Mechanisms to Address New Challenges in Air Quality Modeling

Early Career: Chemical Mechanisms to Address New Challenges in Air Quality Modeling

Agency: Environmental Protection Agency EPA-G2019-STAR-C1 EPA-G2019-STAR-C2

Website: <https://www.epa.gov/research-grants/chemical-mechanisms-address-new-challenges-air-quality-modeling>

Brief Description: The U.S. Environmental Protection Agency (EPA), as part of its Science to Achieve Results (STAR) program, is seeking applications proposing research to improve air quality models relevant to ozone, particulate matter (PM), regional haze, air toxics, and emerging pollutants. Specifically, this Request for Applications (RFA) is seeking research on the development of the component of an air quality model that represents the relevant atmospheric chemical reactions, which is known in this field of modeling as “the chemical mechanism.” The RFA seeks research on:

1. Development of data, methods, and software tools for generating explicit chemical mechanisms that a) have a coherent and integrated treatment of gas, aerosol, aqueous, and heterogenous chemistry, b) can be easily updated to reflect evolving kinetic, mechanistic, and theoretical knowledge and understanding, and c) are applicable to a wide range of atmospheric concentration regimes and environmental conditions;
2. Development and evaluation of algorithms, numerical techniques and software tools to reduce (i.e., simplify) detailed, integrated chemical mechanisms into application-specific condensed mechanisms appropriate for use in global and regional air quality models; and
3. Applications of new condensed mechanisms generated for broad applications or for specific conditions in global and regional air quality models to investigate air quality research topics relevant to air quality management in the United States.

The focus of this solicitation is on the development of chemical mechanisms relevant over multiple regimes (a wide range of concentrations, oxidant ratios, and temperatures, and multiple phases) and spatiotemporal scales within a framework that can generate mechanisms for current air quality assessments and have the flexibility to generate updated mechanisms as understanding of atmospheric chemistry evolves and new concerns emerge.

Awards: Potential Funding per Award: Up to a total of \$800,000 for regular awards, and up to a total of \$400,000 for early career awards, including direct and indirect costs, with a maximum duration of three years.

Submission Deadline: June 24, 2019: 11:59:59 pm Eastern Time

Contact: Technical Contact: Serena Chung; phone: 202-564-6069; email: chung.serena@epa.gov
Eligibility Contact: Ron Josephson; phone: 202-564-7823; email: josephson.ron@epa.gov Electronic Submissions Contact: Debra M. Jones; phone: 202-564-7839; email: jones.debram@epa.gov

Grant Program: 2019 Healthy Communities Grant Program

Agency: Environmental Protection Agency EPA-R1-HC-2019

Website: <https://www3.epa.gov/region1/eco/uep/pdfs/2019-hcgp-rfa.pdf>

Brief Description: The Healthy Communities Grant Program is the U.S. Environmental Protection Agency, Region 1’s (EPA New England) main competitive grant program to work directly with communities to support EPA’s “Back-to- Basics” agenda to reduce environmental risks, protect and

improve human health and improve the quality of life. The Healthy Communities Grant Program will achieve these goals through identifying and funding projects that:

- Target resources to benefit communities at risk [areas needing to create community resilience, environmental justice areas of potential concern, sensitive populations (e.g., children, elderly, tribes, urban and rural residents, and others at increased risk)].
- Assess, understand, and reduce environmental and human health risks.
- Increase collaboration through partnerships and community-based projects.
- Build institutional and community capacity to understand and solve environmental and human health problems.
- Advance emergency preparedness and ecosystem resilience.
- Achieve measurable environmental and human health benefits.

To qualify as eligible projects under the Healthy Communities Grant Program, proposed projects must: (1) be located in and/or directly benefit one or more of the Target Investment Areas; and (2) identify how the proposed project will achieve measurable environmental and/or public health results in one or more of the Target Program Areas. Please see Section III for further information on eligibility requirements.

Awards: Proposals may be submitted for amounts up to \$25,000. The project period will start no earlier than October 1, 2019 and can last for a one or two-year period.

Letter of Intent Deadline: Your organization's AOR must submit your complete application package electronically to EPA through Grants.gov no later than May 28, 2019, 11:59 PM ET.

Contact: Katie Marrese EPA New England 5 Post Office Square, Suite 100 (OEP06-2) Boston, MA 02109-3912 Phone: 617-918-1658 Fax: 617-918-0658

Marrese.Katie@epa.gov

Grant Program: 16th Annual P3 Awards: A National Student Design Competition Focusing on People, Prosperity and the Planet - Safe and Sustainable Water Resources

EPA-G2019-P3-Q1 – Air Quality

EPA-G2019-P3-Q2 – Safe and Sustainable Water Resources

EPA-G2019-P3-Q3 – Sustainable and Healthy Communities

EPA-G2019-P3-Q4 – Chemical Safety

Agency: Environmental Protection Agency

Website: <https://www.epa.gov/research-grants/16th-annual-p3-awards-national-student-design-competition-focusing-people-prosperity>

Brief Description: The U.S. Environmental Protection Agency (EPA) – as part of its People, Prosperity and the Planet (P3) Award Program – is seeking applications proposing to research, develop, design, and demonstrate solutions to real world challenges. The P3 competition highlights the use of scientific principles in creating innovative technology-based projects that achieve the mutual goals of improved quality of life, economic prosperity, and protection of the planet – people, prosperity, and the planet. The EPA offers the P3 competition to respond to the needs of people in the United States (U.S.)—e.g., those in small, rural, tribal, and disadvantaged communities. Please see the People, Prosperity and the Planet (P3) Student Design Competition website for more details about this program. Proposed projects must embody the P3 approach, which is that they have the intention and capability to simultaneously improve the quality of people's lives, provide economic benefits, and protect the environment.

This solicitation provides the opportunity for the submission of applications for projects that may involve human subjects research. Human subjects research supported by the EPA is governed by EPA Regulation 40 CFR Part 26 (Protection of Human Subjects). This includes the Common Rule at subpart A and prohibitions and additional protections for pregnant women and fetuses, nursing women, and children at subparts B, C, and D. Research meeting the regulatory definition of intentional exposure research found in subpart B is prohibited by that subpart in pregnant women, nursing women, and children. Research meeting the regulatory definition of observational research found in subparts C and D is subject to the additional protections found in those subparts for pregnant women and fetuses (subpart

C) and children (subpart D). All applications must include a Human Subjects Research Statement (HSRS, as described in Section IV.C.5.b of this solicitation), and if the project involves human subjects research, it will be subject to an additional level of review prior to funding decisions being made as described in Sections V.C and V.D of this solicitation.

Awards; The first phase is a competition for one-year grants of up to \$25,000 to test, research, and develop innovative scientific projects or engineering designs that use the P3 approach. In the spring of 2020, the Phase I grantees awarded from this solicitation are required to present their projects/designs at the National Student Design Expo. EPA will provide teams with information about the Expo during the award year. At the end of Phase I, teams will submit a *Project Report* that will serve as an application for a Phase II grant award of up to \$100,000. The Phase II grant awards are intended to support the further development and demonstration of the projects/designs created in Phase I. The competitors for 2020 P3 Phase II grants are limited to recipients of Phase I grant awards from this solicitation.

Submission Deadline: December 11, 2018, 11:59:59 pm Eastern Time

Contact Information: Technical Contact: Angela Page (page.angelad@epa.gov), Phone: 202-564-7957; Eligibility Contact: Ron Josephson (josephson.ron@epa.gov), Phone: 202-564-7823; Electronic Submissions: Debra M. Jones (jones.debram@epa.gov), Phone: 202-564-7839

Department of Energy

Grant Program: Request for Information (RFI): Marine Sciences Laboratory

Agency: Department of Energy DE-FOA-0002123

Website: <https://eere-exchange.energy.gov/>

Brief Description: The purpose of this RFI is to solicit feedback from industry, academia, research laboratories, government agencies, and other stakeholders on issues related to the growing Research and Development (R&D) interest in the use of the Pacific Northwest National Laboratory's (PNNL's) Marine Sciences Laboratory (MSL) facilities for renewable energy, maritime markets, and energy storage research, technology development and testing. This information will help DOE and PNNL prioritize resources and investments. This is solely a request for information and not a Funding Opportunity Announcement (FOA). EERE is not accepting applications.

Responses to this RFI must be submitted electronically to WPTORFI@ee.doe.gov no later than 5:00 p.m. on August 8, 2019. Responses must be provided as attachments to an email. Only electronic responses will be accepted.

This is a Request for Information (RFI) only. EERE will not pay for information provided under this RFI and no project will be supported as a result of this RFI. This RFI is not accepting applications for financial assistance or financial incentives.

Awards: TBD

Proposal Submission Deadline: WPTORFI@ee.doe.gov

Responses to this RFI must be submitted electronically to this inbox

Contact: EERE_ExchangeSupport@hq.doe.gov Contact information for technical issues

Grant Program: Low Cost, Efficient Treatment Technologies for Produced Water

Agency: Department of Energy DE-FOA-0002004

Website:

https://www.fedconnect.net/FedConnect/PublicPages/PublicSearch/Public_OpportunitySummary.aspx

Brief Description: There are a number of water treatment technologies that include chemical, electrostatic, flotation, filtration and thermal methods. Often, combinations of these methods are incorporated into a range of proprietary commercial systems. Such systems typically produce an output

stream of relatively clean water suitable for reuse, plus a second lower volume output stream of highly concentrated brine that cannot be reused and that must be disposed.

DOE understands that produced water characteristics reflect the chemistry of the geologic formation in which it resides. **Accordingly, DOE expects applications in response to this FOA to be basin-specific, reflecting produced water constituents, volumes, and the supply/ demand water-balance of the region.** DOE recognizes that the techno-economic relationship among these variables will determine the potential for a technology application's economic success in any specific location.

Developing such efficiency improvements and technologies would serve to reduce the need for deep well injection and help to support the water supply needs of both oilfield and non-oilfield industries, while simultaneously advancing the economic benefits of continued conventional and unconventional oil and natural gas development activities and U.S. energy independence.

The objective of this Oil and Gas FOA is to accelerate the development of potential process modifications, combinations or enhancements, or altogether new alternative processes and technologies-- including techno-economic analyses--that could achieve significant reduction in the quantity of produced water going to deep, underground injection well facilities. Commercialization of treatment technologies that reduce waste water and, create fit for purpose water supplies support the Produced Water Research and Development program, is another objective of this work. DOE's objective is to publish these detailed process enhancement design analyses to encourage private funding of their development and to stimulate additional public and private research which includes a university or nonprofit performer / subperformer. In addition, DOE seeks to accelerate technology advancement of these technology solutions through funding continued laboratory scale research and development. This FOA solicits applications for the completion of such analytical products and continued technology development at the laboratory scale.

Awards: 4 awards; Available funding: \$5,000,000

Proposal Submission Deadline: July 10, 2019

Contact: Jodi.Collins@netl.doe.gov

Grant Program: Buildings Energy Efficiency Frontiers & Innovation Technologies (BENEFIT) – 2019

Agency: Department of Energy DE-FOA-0002090

Website: <https://eere-exchange.energy.gov/#FoaId621e495c-6186-48da-8308-3f8f3841ba37>

Brief Description: This Funding Opportunity Announcement (FOA) is being issued by the U.S. Department of Energy's (DOE) Office of Energy Efficiency and Renewable Energy (EERE) Building Technologies Office (BTO). BTO's overall goal is to improve the energy productivity of buildings without sacrificing occupant comfort or product performance. The goal is to use energy more productively and efficiently, not simply to use less energy. Progress towards achieving this goal will make building energy costs more affordable to the benefit of American families and businesses.

BTO research is focused on reducing energy intensity for major segments of the sector with the most opportunity for energy savings, while balancing the need to maintain occupant comfort and productivity, and product performance. This includes both new and existing buildings, both residential and commercial, including their energy-consuming and labor-saving equipment. The development of next-generation building technologies, including building materials, components, equipment, energy models and systems, is critical to increasing energy productivity in a cost-effective manner.

BTO's Emerging Technologies (ET) program invests in the research and development to create the next-generation building technologies, tools and systems to enhance energy efficiency. The program focuses on the most energy-intensive technologies for residential buildings and in commercial buildings, where the opportunity for cost-effective energy savings is greatest. These technologies include air conditioning, space heating, water heating, lighting and sensors & controls, all of which are addressed in this FOA.

Achieving BTO's priorities across the building technology landscape requires sustained, multifaceted innovation. With this FOA, BTO intends to fund high-impact, early-stage research in the following areas:

Topic 1: Flexible Building Technologies

Topic 2: Heating, Ventilation and Air Conditioning (HVAC) Technologies

Topic 3: Solid-State Lighting (SSL) Technologies

Awards: Available Funding \$47,000,000

Proposal Submission Deadline: Concept Paper Submission Deadline: 5/21/2019 5:00 PM ET

- Full Application Submission Deadline: 7/15/2019 5:00 PM ET

Contact: EEERE-ExchangeSupport@hq.doe.gov EEERE eXCHANGE

- BENEFIT-FOA0002090@netl.doe.gov FOA Questions

NASA

Grant Program: University Leadership Initiative (ULI2)

Agency: NASA NNH18ZEA001N-ULI2

Website: <https://nspires.nasaprs.com/external/solicitations/summary.do?solId=%7B0C9DAA3D-D086-0E16-55FD-E73B0015E0B9%7D&path=open&method=init>

Brief Description: ARMD created ULI for universities to take the lead, build their own teams, and set their own research path. ULI seeks new, innovative ideas that can complement the NASA ARMD portfolio and support the U.S. aviation community. ULI's strategic goals are: • Assist in achieving aviation outcomes defined in the ARMD Strategic Implementation Plan ("Strategic Plan") [1] through NASA-complementary research; • Transition research results to an appropriate range of stakeholders that leads to a continuation of the research. Transition can occur in a number of ways, including the following: o Creates a new product line in U.S. industry or a new ARMD project, o Whole ULI concept is transitioned to U.S. industry/ARMD project, o Part of the ULI concept is transitioned to U.S. industry/ARMD project, o ULI findings impact direction of U.S. industry/ARMD. • Provide broad opportunities for students at different levels, including undergraduate and graduate, to participate in aeronautics research; • Promote greater diversity in aeronautics through increased participation of minority-serving institutions and underrepresented university faculties in ULI activities. ULI provides the opportunity for university teams to exercise technical and organizational leadership in proposing unique technical challenges, defining interdisciplinary solutions, establishing peer review mechanisms, and applying innovative teaming strategies to strengthen the research impact.

Awards: Various

Notice of Intent: August 27, 2019

Proposal Deadline: Step 1 Proposals Due Aug 27, 2019

Contact: Koushik Datta Koushik Datta Koushik Datta

[Written responses will be posted on the solicitation website](#)

Grant Program: ROSES 2019: B.7 Space Weather Science Applications Operations 2 Research

Agency: NASA NNH19ZDA001N-SWO2R

Website: <https://nspires.nasaprs.com/external/solicitations/summary.do?solId={BD18A167-6DE8-1A35-A0ED-96F16AC6DE49}&path=&method=init>

Brief Description: In October 2015, the National Science and Technology Council (NSTC) in the Executive Office of the President released the National Space Weather Strategy and the National Space Weather Action Plan (SWAP). In March 2019, these were updated with the release of the National Space Weather Strategy and Action Plan (NSW-SAP). The objectives of the actions described in the SWAP and

NSW-SAP are to improve the understanding of, forecasting of, and preparedness for space weather events, recognizing the need for close cooperation among the federal agencies. The SWAP and NSW-SAP call for NASA, National Science Foundation (NSF), and Department of Defense (DOD) to identify and support basic research on space weather. They also direct NASA, Department of Commerce (DOC), and DOD to identify and support research opportunities that address targeted operational space-weather needs. Furthermore, they direct NASA, NSF, DOC, and DOD to facilitate the transition of space weather information and prediction capabilities to the Nation's space weather service providers (research-to-operations and operations-to-research). In response to the need to advance and coordinate the Nation's space weather research and operations capabilities, NASA has established the Heliophysics Space Weather Science Applications program, of which this operations-to-research (O2R) call is a part. NASA is supporting this funding opportunity in coordination with DOC/National Oceanic and Atmospheric Administration (NOAA) to promote O2R activities. For this call, the objective of O2R efforts is broadly defined as the joint pursuit of improvements of operational capabilities and advancements in related fundamental research.

The primary goal of this funding is to support research by the grant recipient to improve numerical models and/or data utilization techniques that could advance specification and/or forecasting capabilities and which could also lead to improved scientific understanding. Effective utilization of available data is encouraged. Employing data assimilation and/or machine-learning techniques is also encouraged.

Awards: Various

Proposal Deadline: Step-1 Proposal: December 16, 2019

Contact: James Spann Heliophysics Division Science mission Directorate NASA Headquarters Washington, DC 20546-0001 Telephone: 202-358-0574 Email: jim.spann@nasa.gov

Grant Program: Heliophysics Theory, Modeling, and Simulations: due dates TBD

Agency: NASA NNH19ZDA001N-HTMS

Website: <https://nspires.nasaprs.com/external/solicitations/summary.do?solId=%7B97F8C4AD-A0D1-7593-92DD-0418FE347186%7D&path=&method=init>

Brief Description: The Heliophysics Theory, Modeling, Simulations (H-TMS) program is a component of the Heliophysics Research Program. Proposers interested in this program element are encouraged to see the overview of the Heliophysics Research Program in Appendix B.1 of this ROSES NRA. The H-TMS program was previously one element of the Heliophysics Grand Challenges Research (H-GCR) program (H-GCR-TMS, last competed in ROSES-2016 as program element B.5). Before that it was called "Heliophysics Theory Program" (HTP, last competed in ROSES-2013). For simplification, this program is now referred to as the Theory, Modeling, and Simulations (TMS) element in the Heliophysics program. The former Heliophysics Theory Program provides the foundation of the TMS element. Increasingly, as computing power becomes more affordable and more available, numerical simulations and modeling become tools that can and have been used synergistically with data analyses and rigorous theory development to solve the fundamental problems of Heliophysics. They lead the way to new understanding and drive science concepts for future strategic missions. The ultimate goal of TMS investigations is to provide a complete chain of reasoning extending from the basic laws of nature to comparison with observation to the identification of future quantitative tests of the behavior of the environment. NASA acknowledges this and renames the element "Theory, Modeling, and Simulations."

Awards: Various

Notice of Intent: Not Required

Proposal Deadline: TBD; Program Close date: Feb 14, 2020

Contact: Ekaterina Verner Heliophysics Division Science Mission Directorate NASA Headquarters Washington, DC 20546-0001 Telephone: (202) 358-1213 Email: ekaterina.m.verner@nasa.gov

Grant Program: Astrophysics Research and Analysis: due dates TBD

Agency: NASA NNH19ZDA001N-APRA

Website: <https://nspires.nasaprs.com/external/solicitations/summary.do?solId=%7B90F8A275-496D-A0FA-82A0-0BF6E9ABBA67%7D&path=&method=init>

Brief Description: The Astrophysics Research and Analysis Program (APRA) program solicits basic research proposals for investigations that are relevant to NASA's programs in astronomy and astrophysics and includes research over the entire range of photons, gravitational waves, and particle astrophysics. Awards may be for up to four years' duration (up to five years for suborbital investigations), but shorter-term proposals are typical; four-year or five-year proposals must be well justified. Proposals for suborbital investigations are particularly encouraged. APRA investigations may advance technologies anywhere along the full line of readiness levels, from Technology Readiness Level (TRL) 1 through TRL 9. The emphasis of this program element is on technologies and investigations that advance NASA astrophysics missions and goals.

Awards: Various

Notice of Intent: Not Required

Proposal Deadline: TBD; Program Close date: Feb 14, 2020

Contact: Dominic J. Benford Astrophysics Division Science Mission Directorate NASA Headquarters Washington, DC 20546-0001 Telephone: (202) 358-1261 Email: Dominic.Benford@nasa.gov

Grant Program: Heliophysics Data Environment Emphasis

Agency: NASA NNH19ZDA001N-HDEE

Website: <https://nspires.nasaprs.com/external/solicitations/summary.do?solId=%7BC2FBD0C9-081B-8A0E-B883-CF137C591C5D%7D&path=&method=init>

Brief Description: The Heliophysics Data Environment Enhancements (HDEE) program is a component of the Heliophysics Research Program and proposers interested in this program element are encouraged to see the overview of the Heliophysics Research Program in B.1 of this ROSES NRA. The work carried out for this program should be in support of the Heliophysics strategic goals and objectives in NASA's 2018 Strategic Plan and Chapter 4.1 of the NASA 2014 Science Plan (both at <https://science.nasa.gov/about-us/science-strategy>). The recommended priorities of the Heliophysics community are also discussed in the National Research Council Decadal Strategy for Solar and Space Physics report, Solar and Space Physics: A Science for a Technological Society (<http://www.nap.edu/catalog/13060/solar-and-space-physics-a-science-for-a-technological-society>). Note particularly the sections of the Decadal report dealing with the "DRIVE" initiative, more specifically "R" and "I," and the discussion in Appendix B. The specific context of this call is provided by the NASA Heliophysics Science Data Management Policy (https://hpde.gsfc.nasa.gov/Heliophysics_Data_Policy_v1.2_2016Oct04.html).

Awards: Various

Notice of Intent: Not Required

Proposal Deadline: TBD; Program Close date: Feb 14, 2020

Contact: Jeffrey J. E. Hayes Heliophysics Division Science Mission Directorate NASA Headquarters Washington, DC 20546-0001 Telephone: (202) 358-0353 Email: jhayes@nasa.gov

National Endowment of Humanities

Grant Program: Summer Stipends

Agency: National Endowment for the Humanities 20190925-FT

Website: <https://www.neh.gov/grants/research/summer-stipends>

Brief Description: The National Endowment for the Humanities' Summer Stipends program aims to stimulate new research in the humanities and its publication. The program works to accomplish this goal by:

- Providing small awards to individuals pursuing advanced research that is of value to humanities scholars, general audiences, or both.
- Supporting projects at any stage of development, but most especially early-stage research and late-stage writing in which small awards are most effective
- Furthering the NEH's commitment to diversity and inclusion in the humanities by encouraging applications from independent scholars and faculty at Hispanic Serving Institutions, Historically Black Colleges and Universities, tribal colleges and universities, and community colleges

Summer Stipends support continuous full-time work on a humanities project for a period of two consecutive months. NEH funds may support recipients' compensation, travel, and other costs related to the proposed scholarly research.

Summer Stipends are awarded to individual scholars. Organizations are not eligible to apply.

Awards: Up to \$6,000

Deadlines: Application due: September 25, 2019

Contact: If you have questions about the program, Contact the Division of Research Programs Team 202-606-8200 fpiri@neh.gov

Grant Program: Fellowship Programs at Independent Research Institutions

Agency: National Endowment for the Humanities

Website: <https://www.neh.gov/grants/research/fellowship-programs-independent-research-institutions>

Brief Description: The Fellowship Programs at Independent Research Institutions (FPIRI) program supports institutions that provide fellowships for advanced humanities research in the United States and abroad, foster communities of intellectual exchange among participating scholars, and provide access to resources that might otherwise not be available to the participating scholars.

Fellowship programs may be administered by independent centers for advanced study, libraries, and museums in the United States; American overseas research centers; and American organizations that have expertise in promoting humanities research in foreign countries. Individual scholars apply directly to the institutions for fellowships. In evaluating applications, consideration is given to the library holdings, archives, special collections, and other resources—either on site or nearby—that institutions make available to fellows.

Awards: Up to \$375,000

Deadlines:

Optional Draft due: July 10, 2019

Application due: August 21, 2019

Contact: If you have questions about the program, Contact the Division of Research Programs Team 202-606-8200 fpiri@neh.gov

Grant Program: Digital Humanities Advancement Grants

Agency: National Endowment for the Humanities

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

Brief Description: Digital Humanities Advancement Grants (DHAG) support digital projects at different stages throughout their lifecycles, from early start-up phases through implementation and sustainability. Experimentation, reuse, and extensibility are hallmarks of this program, leading to innovative work that can scale to enhance scholarly research, teaching, and public programming in the humanities. This

program is offered twice per year. Proposals are welcome for digital initiatives in any area of the humanities. Through a special partnership with NEH and pending the availability of appropriated funds, the Institute of Museum and Library Services (IMLS) anticipates providing additional funding to this program to encourage innovative collaborations between museum or library professionals and humanities professionals to advance preservation of, access to, use of, and engagement with digital collections and services. IMLS and NEH may jointly fund some DHAG projects that involve collaborations with museums and/or libraries. Digital Humanities Advancement Grants may involve • creating or enhancing experimental, computationally-based methods, techniques, or infrastructure that contribute to the humanities; • pursuing scholarship that examines the history, criticism, and philosophy of digital culture and its impact on society; or • conducting evaluative studies that investigate the practices and the impact of digital scholarship on research, pedagogy, scholarly communication, and public engagement.

Awards: Up to \$375,000

Deadlines: Optional Draft due: May 8, 2019; Application due: June 19, 2019

Contact: If you have questions about the program, contact the Office of Digital Humanities staff at odh@neh.gov. Applicants wishing to speak to a staff member by telephone should provide in an e-mail message a telephone number and a preferred time to call. odh@neh.gov

Grant Program: Research and Development Program

Agency: National Endowment for the Humanities

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 recognizes that finding solutions to complex problems often requires forming interdisciplinary project teams, bringing together participants with expertise in the humanities; in preservation; and in information, computer, and natural science. The exact mix of specialists will depend on the particular nature of the project. Your project team should embody a well-defined humanities perspective that can frame your objectives and guide the project to successful completion. Such a perspective may be provided by members of an advisory committee, consultant(s), a project co-director, or another participant.

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

Deadlines: Optional Draft due: April 3, 2019

Application due: May 15, 2019

Contact: 202-606-8570 preservation@neh.gov

Simon Foundation

Grant Program: Autism Research

Agency: Simon Foundation

Website: <https://www.sfari.org/grant/bridge-to-independence-award-request-for-applications/?tab=overview>

Brief Description: The foundation is inviting applications to its annual Bridge to Independence Award Program. Created in 2015, the program promotes talented early-career scientists by facilitating their

transition to research independence and providing grant funding at the start of their professorships. Through the program, grants of \$495,000 over three years will be awarded to senior postdoctoral fellows who intend to seek a tenure-track faculty position during the upcoming academic year. The award will be activated upon assumption of a tenure-track professorship at a U.S. or Canadian research institution.

Although eligible applicants currently must be in a postdoc training position, the award itself is not a training fellowship but instead is a research grant to newly appointed faculty. The program's selection process is uniquely designed to enhance a BTI awardee's job prospects by providing a letter that specifies SFARI financial commitment to the research project once the awardee has secured a suitable faculty position. Applications are encouraged from postdoctoral fellows working on autism-related projects, but the award is also open to researchers who are not currently working on autism but are interested in starting research projects in this area and who have expertise that could positively impact research on this complex disorder.

Proposal Deadline: Letters of Intent and recommendation are due August 8. Upon review, selected applicants will be invited to submit a full proposal on a rolling basis between December 1, 2019, and December 1, 2020.

William T. Grant Foundation

Grant Program: Scholars Program

Agency: William T. Grant Foundation

Website: <http://wtgrantfoundation.org/grants/william-t-grant-scholars-program#overview>

Brief Description: The New York City-based William T. Grant Foundation supports research aimed at improving the lives of young people between the ages of 5 and 25 in the United States.

To that end, the foundation is inviting applications for its Scholars Program. Through the program, teams of four to six scholars in any discipline will be awarded up to \$350,000 over five years in support of research and mentoring plans with the potential to significantly expand researchers' expertise in new disciplines, methods, and content areas. Scholars also will receive career development opportunities, including summer retreats and foundation-sponsored workshops on topics relevant to their work (e.g., mixed methods, reducing inequality, and the use of research evidence in policy and practice). Research must be conducted within one of two focus areas:

Reducing Inequality — Research to build, test, and increase understanding of approaches to reducing inequality in youth outcomes, especially on the basis of race, ethnicity, economic standing, language minority status, or immigrant origins. The foundation seeks descriptive studies that clarify mechanisms for reducing inequality or elucidate how or why a specific program, policy, or practice operates to reduce inequality; intervention studies that examine attempts to reduce inequality; and studies with the potential to improve the measurement of inequality in ways that can enhance the work of researchers, practitioners, or policy makers.

Improving the Use of Research Evidence — Research to identify, build, and test strategies to ensure that research evidence is used in ways that benefit youth. The foundation is particularly interested in research on improving the use of research evidence by state and local decision makers, mid-level managers, and intermediaries. Research within this focus area must identify or test strategies aimed at improving the use of existing research; identify or test strategies for producing more useful research evidence; or test the assumption that using high-quality research improves decision making and youth outcomes.

Awards: Various

Proposal Deadline: June 25, 2019 (09:00 A.M. Korea Standard Time, UTC+9)

Mozilla

Grant Program: Mozilla Open Source Support (MOSS) Awards

Agency: Mozilla

Website: <https://www.mozilla.org/en-US/moss/>

Brief Description: Mozilla was born out of and remains part of the open source and free software movement. Through the Mozilla Open Source Support (MOSS) awards program, we recognize, celebrate, and support open source projects that contribute to Mozilla's work and to the health of the Internet. MOSS awards are available in the following tracks: Foundational Technology; Global Mission Partners; Secure Open Source Fund.

Track I: Foundational Technology

The Foundational Technology track supports open source projects that Mozilla relies on, either as an embedded part of our products or as part of our everyday work.

Tracks II & IV: Global Mission Partners

The Mission Partners track supports open source projects that significantly advance Mozilla's mission.

Track III: Secure Open Source Fund

The Secure Open Source ("SOS") track supports security audits for widely used open source software projects as well as the remedial work needed to rectify the problems found.

Proposal Deadline: MOSS applications are accepted on a rolling basis and are reviewed monthly by an expert selection panel. Reviewers include current Mozilla staff, senior Mozilla alumni, and other respected open source experts.

Contact: If interested, please send an email to Atam Dhawan (dhawan@njit.edu) or Richard Rosenberg at rmmr@njit.edu

John D. And Catherine T. MacArthur Foundation

Grant Program: 2020 Scientific Innovation Award

Agency: John D. And Catherine T. MacArthur Foundation

Website: <https://www.100andchange.org/#home>

Brief Description: Through its 100&Change competition, the John D. And Catherine T. MacArthur Foundation awards a single \$100 million grant in support of a bold proposal that will deliver measurable progress toward solving a significant critical problem of our time. Proposals from any sector are encouraged, and any organization or legal entity (with the exception of government agencies) may apply. Individuals are ineligible to apply. The foundation suggests that applicants use an organizational readiness tool to investigate how well-suited both the organization and its proposal are for the competition prior to applying.

Awards: \$100 million grant

Proposal Deadline: To be eligible, applicants must register by July 16, 2019. Applications will be accepted through August 6, 2019, with the top hundred proposals to be selected in February 2020 and finalists selected in the spring of 2020. During the spring and summer of 2020, finalists will work with an expert team to strengthen their proposals, present a preliminary plan for monitoring and evaluation and learning, and demonstrate authentic engagement with communities of interest before submitting their revised project plans. The MacArthur Foundation's board of directors will select the final award recipient in the fall of 2020.

Streamlyne Question of the Week

Question: How can I update my eRA Commons ID for all future NIH proposals?

Answer: Go to Main Menu>Setting>Person Extended Attributes, click "Edit", enter it under "eRA Commons User Name" and submit the change/update.

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

Streamlyne Information

Streamlyne User Manuals: <http://www.njit.edu/research/streamlyne/>

Streamlyne_NewUserManual_CommonElements.docx : This manual provides a reference to all the common elements of Streamlyne Research. This user manual is a good document to review each module's functionality.

Streamlyne_NewUserManual_PD&PDBudget.docx: This is a user manual on proposal and budget development in Streamlyne. The content herein explain the use and functionality of this module. This is the most useful Streamlyne document for PIs and users new to Streamlyne.

New "How to Do" videos have been posted on the research website <http://www5.njit.edu/research/streamlyne/>.

Faculty and staff having any questions on proposal submission, may contact their college representatives, and also follow up with **Justin Samolewicz, Associate Director (Pre Award)** 973-596-3145; justin.m.samolewicz@njit.edu; and **Eric Hetherington, Director, Sponsored Research Programs Administration** 973-596-3631; eric.d.hetherington@njit.edu. The college representatives to help PIs on proposal submissions are

John McCarthy, NCE Director of Research; (973) 596-3247; john.p.mccarthy@njit.edu

Cristo Leon, CSLA Director of Research; (973) 596-6426; cristo.e.yanezleon@njit.edu

Sean Andrews, YWCC Director of Research; (973) 596-5352; sean.t.andrews@njit.edu

Iris Pantoja, NCE, CoAD and MTSM Project Manager; 973-596-4483; irp3@njit.edu

Need Information about Funding?

Finding Research Opportunities and Collaborations (FROC) **Walk-In Open-Hour Discussion with SVPR Over Tea**

Every Thursday: 3.00 PM-4.00 PM; 340 Fenster Hall

The Office of Research has started a new service to help all faculty and staff explore collaborative research opportunities and currently active RFPs (Request for Proposals) for potential proposal development and submission. Faculty and research staff members are welcome to meet with Senior Vice Provost for Research Atam Dhawan at the open-hour every Thursday from 3.00 PM to 4.00 PM to discuss research opportunities related issues including the following but not limited to:

- Research opportunities and potential collaborations

- Currently active RFPs and developing collaborative teams for proposal submission
- Proposal review criterion for specific RFP/program/agency
- Proposal concept and draft review in the context of review criterion
- Future plans for proposal development and submission
- Invention disclosures, patent applications and processing of intellectual property
- External faculty research awards including fellowships

Though *walk-ins* are welcome during the open-hour, faculty members are encouraged to email SVPR Atam Dhawan (dhawan@njit.edu) about specific questions on research opportunities and needs to be discussed in advance for more detailed discussion.

The open-hour session with individuals or small groups of faculty and research staff members is expected to focus on finding research opportunities, developing collaborative teams, exploring the review criterion and reviewing program requirements. Specific proposal submission and grant management issues can be discussed with Office of Research staff separately.

Enjoy coffee/tea and cookies with SVPR over the discussion.

For any questions and additional information, please send an email to SVPR at dhawan@njit.edu.
