

NJIT Research Newsletter

Issue: ORN-2019-13

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 4
Recent Awards: Page 5
In the News (Related to research funding): Page 6
Webinars and Events: Page 8
Grant Opportunities: Page 9
Streamlyne Question of the Week: Page 52
Streamlyne Information: Page 52
Meet with SVP: Open Hour: 53

Special Announcements

NJIT 7th Annual Innovation Day 2019

Monday, April 8, 2019
Ballroom A, Campus Center

Agenda

- 9.00 AM – 9:15 AM: Welcome Remarks and Speaker Introduction
Fadi Deek, Provost and Senior Executive Vice President
Atam Dhawan, Senior Vice Provost for Research
- 9.15 AM - 10.10 AM: **Panel Discussion:** Research, Innovation and Entrepreneurship
Moderator: Govi Rao, Co-Founder & Managing partner, Carbon Group Global
Panelists:
- Paul Doll, Lead Technical Scientist, Advanced Materials Division, The Dow Chemical Company
 - Melinda Einsla, Research Scientist, The Dow Chemical Company
 - Lucas Dorazio, Team Leader- Gasoil Technologies, Refinery Catalyst R&D, BASF Corporation
- 10.10 AM - 10.15 AM: **Announcement of Winners** of TechQuest Innovation Competition
Jim Stevenson
- 10.15 AM - 12.00 PM: Student Project e-Poster Presentations

Speakers Bios:

Paul Doll: Paul Doll is a senior scientist in the Advanced Material division at the Dow Chemical Company. For the past 25 years Paul Doll has been developing high end innovative inks and coatings that deliver valuable market solutions. He holds several patents and is the author / technical contributor of numerous scientific publications and two reference books. He has received the coating industries prestigious Shelby F. Thames award and the Dow Chemical Company's Responsible Care Award.

Since obtaining his degree in Imaging Science from the Rochester Institute of Technology, he has gone on to grow 2 start-up companies, lead numerous coating projects focused on efficiently and selectively lowering VOCs and functional coatings that improving indoor air quality. His strong interest in innovating a better tomorrow has also led him to become an LCA practitioner and serve on the American Coatings Industry Sustainability committee. These skills and platforms allow him to drive sustainable innovations into the coatings industry as the Lead Technical Scientist for Specialty Architectural Binders for Dow Coating Materials.

Melinda Einsla: Melinda Einsla is a research scientist at the Dow Chemical Company. She holds a B.S. in Chemistry from Bloomsburg University and a Ph.D. in Macromolecular Science and Engineering from Virginia Tech. Einsla joined Dow in 2008, and since then she has worked in the areas of Plastics Additives, Photovoltaic Encapsulants, Paper Coatings, Pressure Sensitive Adhesives, and Architectural Coatings. Einsla's passion and motivation lies in development of technology that solves real-world sustainability challenges. Before joining Dow, Melinda completed a post-doctoral fellowship at Los Alamos National Laboratory where she studied inorganic and polymeric proton conductors for proton exchange membrane fuel cells.

Lucas Dorazio: Lucas Dorazio is a practicing chemical engineer, with experience in several engineering and research positions for over 20 years. He received his doctorate from Columbia University in New York City where his research was in the field of heterogeneous catalysis working in the group of Marco Castaldi. He started working as a product development engineer in the Specialty Chemicals business in BASF in 2000, later leading a team of engineers and chemists in the scaleup and commercialization of new products. In 2008, he moved to BASF's catalyst research center in Iselin NJ where he has worked in several areas of heterogeneous catalysis. Lucas currently leads a team of scientists developing fluid catalytic cracking catalysts to support the refining industry. In addition to his work in Industrial Research, Lucas is an adjunct professor at NJIT where he teaches two courses in the field of catalysis. In April 2019 Lucas received the NCE Excellence in Teaching Award based on student recommendations and evaluations.

Lucas has authored several journal articles and has been granted several patents in the field of catalysis. Lucas recently co-authored a textbook on the topic of industrial catalysis. Lucas is an active member of the local catalysis community where he serves as a Director for the New York Metropolitan Catalysis Society and organizing committee co-Chair for the North American Catalysis Society conference to be held in New York City in year 2021.

Govi Rao: Govi has over 25 years of experience globally, across several industries, including specialty chemicals, coatings, building materials, lighting, energy and the rapidly evolving IoT space. As co-founder and Managing Partner of Carbon Group Global (CGG), Govi is currently leading CGG's vision to scale transformational solutions, specifically to address education, total resiliency of women and resource efficiency. Prior to CGG, Govi was the President and Chief Executive Officer of Noveda Technologies, a pioneer in water and energy management solutions, based in Bridgewater, NJ. In 2007, Govi was instrumental in envisioning and pioneering one of the earliest LED lighting solutions providers, Lighting Science Group Corporation as the Chairman & CEO.

Previously, Govi was Vice President and General Manager of the Philips Solid State Lighting business in North America. He also held several leadership roles at Philips, including Vice President of

Business Creation & Brand, where he was responsible for product management, strategic marketing, branding and sustainability. Prior to joining Philips, Govi spent over a decade with specialty chemicals leader Rohm and Haas Company (now part of Dow Chemicals) in various leadership roles across a range of businesses and geographies. In addition to his experience with a wide business portfolio, Govi has extensive functional expertise that includes strategic planning, business innovation, product management, marketing, operations, leadership development and general management. Widely traveled across Asia, Europe and the Americas, Govi has a keen sense of value creation in emerging markets and technologies, grounded on the principles of sustainability. Govi has built winning teams that achieved extraordinary goals in start-ups as well as mature businesses – pioneering and inspiring profitable and sustainable growth.

Govi serves on several boards including the Undergraduate Research and Innovation at NJIT and the department of Chemistry and Chemical Biology at Rutgers University. Govi also serves as an advisor to Hellothinkster, an AI based educational technology company. Govi is active in discussions with various Governments, NGOs and investment groups to drive market adoption of social impact solutions and is a contributing author of the Sustainable Enterprise Fieldbook (AMACOM 2008). Govi has testified to the U.S House of Representatives on IP and Innovation.

James Stevenson: Jim Stevenson has more than 35 years of experience in processing rubber and plastics. His work on rubber extrusion includes extruder operation, die design, feeding and takeaway operations, instrumentation and process control. He has experience with equipment ranging from 2-inch extruders for vinyl gaskets, to 3.5-inch extruders for industrial rubber products, to dual hot feed and triplex cold feed pin barrel extruders for tire components. His work on dynamic head technology resulted in a head capable of forming curved weatherstrip and of quick die changes. Other areas of expertise include process simulation, injection (polymers and metals), transfer, compression molding, modeling reaction kinetics, measurement of flow properties, and foam technology. His work at GenCorp formed the basis for the three-day Rubber Extrusion Technology short course which he and co-workers have presented more than 40 times to at companies, university and technical symposia.

Stevenson has written book chapters on extrusion of rubber and plastic and of composite materials. His edited book, *Innovation in Polymer Processing: Molding*, was published in 1996. He has published more than 60 papers on polymer processing and flow, and holds more than 20 patents. Jim retired in 2011 as a Fellow (Senior Scientist) at Honeywell Aerospace where he worked on composite materials and novel processes and applications for polymers and metal powder compounds. He then founded a consulting company, Stevenson PolyTech LLC, which specializes in plastics and rubber processing. Prior to joining Honeywell in 1996, he was director of research at Trexel, a start-up company, where he initiated work on microcellular injection molding.

For the previous 18 years, Stevenson held several technical and management positions and headed the Rubber Extrusion Laboratory at GenCorp (previously General Tire) in Akron, Ohio. Before joining GenCorp, he was an associate professor in the Chemical Engineering Department at Cornell University where he was a founding member of the Cornell Injection Molding Project and conducted research on polymer flow. Stevenson earned his B.S. in chemical engineering from Rensselaer Polytechnic Institute and M.S. and Ph.D. degrees from the University of Wisconsin, Madison. He serves on the boards of the Undergraduate Research and Innovation program at the New Jersey Institute of Technology and the Honeywell Retiree's Association. Stevenson received the NJIT Special Friend of the University Award in 2017.

Call For Proposals

NJIT Faculty Seed Grant Awards – FY2019-20

Proposal Submission Deadline to College/School Dean: April 10, 2019

Project Funding Period: July 1, 2019 – June 30, 2020

Purpose:

NJIT “2020 Vision” strategic plan targets on substantial increase in academic research and external funding with faculty and student professional development. The purpose of the NJIT Faculty Seed Grant (FSG) initiative is to promote academic research in the core and interdisciplinary areas by providing seed funding to obtain preliminary results or establish hypotheses for developing future grant proposals for submission to external funding agencies. The FSG initiative specifically seeks seed funding proposals from faculty to launch new initiatives in core and interdisciplinary emerging areas aligned with NJIT strategic tactics to develop critical research mass.

Eligibility and Type of Awards:

NJIT full-time faculty with specific research initiative to enhance the critical mass in key and emerging areas may apply to FSG program for internal funding with a budget of \$7500 per project over the project period. Multidisciplinary collaborative projects with 2 or more PIs are strongly encouraged and will receive priority consideration at the funding level of \$10,000 per project. It is expected that about 25 FSG awards will be made this year. Funding is arranged through the Offices of Research and College/School Deans. Recipients of FSG as lead faculty are not eligible to receive another FSG award as lead faculty within three years from the last FSG award. Projects funded by FSG are not eligible to receive another FSG as the intent of internal seed funding is to facilitate initial research towards obtaining external funds to pursue research. Allowable Expenses include Project supplies and small equipment, travel to conferences and/or funding agencies, travel expenses for funding agency people to visit NJIT, student hourly wages. Faculty summer salary, AY release and any stipend are not permitted in the budget.

Deadlines:

FSG Proposal Due in the Office of College/School Dean: April 10, 2019

College/School Dean Recommendations to Office of Research Due: April 25, 2019

Institutional Review and Announcement of Awards: May 3, 2019

Period of Award: **July 1, 2019 – June 30, 2020 (no extension will be available)**

Grant Opportunity Alerts

Keywords and Areas Included in the Grant Opportunity Alert Section Below

NSF: Secure and Trustworthy Cyberspace Frontiers (SaTC Frontiers); NSF Program on Fairness in Artificial Intelligence in Collaboration with Amazon (FAI); Broadening Participation in Engineering (BPE); Sustained Availability of Biological Infrastructure (SABI) Core Program; Science and Technology Centers; Real-Time Machine Learning (RTML); Smart and Connected Communities (S&CC); Next Generation Networks for Neuroscience; Planning Grants for Engineering Research Centers (ERC); Quantum Leap Challenge Institutes (QLCI); Faculty Development in the Space Sciences; EHR Core Research: Production Engineering Education and Research (ECR: PEER); Signals in the Soil (SitS);

Cyber-Physical Systems (CPS); ADVANCE: Organizational Change for Gender Equity in STEM Academic Professions (ADVANCE); Growing Convergence Research (GCR); Harnessing the Data Revolution (HDR): Transdisciplinary Research in Principles of Data Science Phase I (HDR TRIPODS Phase I); Harnessing the Data Revolution (HDR)

NIH: NIH Director's Pioneer Award Program (DP1); NIH Director's Transformative Research Awards (R01); Institutional Translational Research Training Program (T32); Undergraduate Research Training Initiative for Student Enhancement (U-RISE) (T34); NINDS Institutional Research Training Program (T32); Team-Based Design in Biomedical Engineering Education (R25); Summer Research Education Experience Program (R25); Clinical and Biological Measures of TBI-related dementia including Chronic Traumatic Encephalopathy (CTE) (R01); Ruth L. Kirschstein National Research Service Award (NRSA) Individual Predoctoral Fellowship (Parent F31); Shared Instrumentation Grant (SIG) Program (S10); Shared Instrumentation for Animal Research (SIFAR) Grant Program (S10); High-End Instrumentation (HEI) Grant Program (S10); NHLBI Emerging Investigator Award (EIA) (R35); Bioengineering Research Grants (BRG) (R01)

Department of Transportation: Pipeline Safety Research Competitive Academic Agreement Program (CAAP); Innovative Technology Deployment (HP-ITD); Dwight David Eisenhower Transportation Fellowship Program (DDETFP) Graduate Fellowship

Department of Defense/US Army/DARPA/ONR: DoD Parkinson's Investigator-Initiated Research Award; DoD Autism Idea Development Award; Real Time Machine Learning (RTML); Science of Artificial Intelligence and Learning for Open-world Novelty (SAIL-ON); Air Force Fiscal Year 2020 Young Investigator Research Program (YIP); Multidisciplinary Research Program of the University Research Initiative (FY20 ARMY and FY AFOSR); Multidisciplinary Research Program of the University Research Initiative (ONR); Department of Defense Advanced Computing Initiative (ACI); Bioelectronics for Tissue Regeneration (BETR); Army Research Laboratory Broad Agency Announcement for Basic and Applied Scientific Research; ERDC Broad Agency Announcement

Department of Education: Fulbright-Hays Group Projects Abroad (GPA) Short-Term Project)

EPA: A National Student Design Competition Focusing on People, Prosperity and the Planet - Safe and Sustainable Water Resources

Department of Energy: Solar Energy Technologies Office FY19 Funding Program; 2019 Wind Energy Technologies Office Funding Opportunity Announcement; Data Science for Discovery in Chemical and Materials Sciences; Notice of Intent to Issue Funding Opportunity Announcement No. DE-FOA-0002022; FY 2019 Bioenergy Technologies Office (BETO) Multi-topic Request for Information (RFI)

NASA: ROSES 2019: B.7 Space Weather Science Applications Operations 2 Research; Heliophysics Theory, Modeling, and Simulations; Astrophysics Research and Analysis; Heliophysics Data Environment Emphasis; ROSES 2018: Planetary Protection Research

National Endowment of Humanities: Research and Development Program

Environment Research and Education Foundation: Research on Sustainable Solid Waste Management

Brain Research Foundation: 2020 Scientific Innovation Award

Recent Research Grant and Contract Awards

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

PI: Eric Fortune (PI)

Department: Biological Sciences

Grant/Contract Project Title: Collaborative Research: Neural Mechanisms of Active Sensing

Funding Agency: NSF

Duration: 04/15/16-03/30/20

PI: Michel Boufadel (PI)

Department: Center for Natural Resources

Grant/Contract Project Title: Bench Scale Treatability Study

Funding Agency: Langan Engineering and Environmental Services, Inc.

Duration: 03/05/19-09/30/20

In the News...

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

ASEE BACKS \$9 BILLION FOR NSF: The American Society for Engineering Education (ASEE) submitted a written testimony to the House Subcommittee on Commerce, Justice, Science, and Related Agencies for the official record. ASEE appreciates the Committee's support for the National Science Foundation (NSF) in fiscal year (FY) 2019 and asks you to robustly fund the agency in FY 2020, including the Research and Related Activities and the Education and Human Resources accounts. ASEE joins the academic and scientific community in requesting support of at least \$9 billion for NSF in FY 2020 to help alleviate impacts of historical underinvestment at NSF and advance both core research and education activities and NSF's Big Ideas for Future Investment. Additionally, ASEE supports continuation of funding at the National Aeronautics and Space Administration (NASA) dedicated to the Space Technology Mission Directorate (STMD), which supports engineers and scientists in developing technology to advance science and space missions in the national interest, and the Office of STEM Engagement, which supports and coordinates NASA educational efforts in engineering and STEM. The complete testimony is posted on the website <https://drive.google.com/file/d/1T7Yd78mHnSILkGDIYww6BLjIN-HREY-h/view>

Semiconductor Industry and STEM Education: The [Semiconductor Industry Association](#) wants the government to "Triple U.S. investments in semiconductor-specific research across federal scientific agencies from approximately \$1.5 billion to \$5 billion annually to advance new materials, designs, and architectures that will exponentially increase chip performance; double U.S. research investments in semiconductor-related fields such as materials science, computer science, engineering, and applied mathematics across federal scientific agencies to spur leap-ahead innovations . . . "; and "increase U.S. investments in STEM education by 50 percent and implement a national STEM education initiative to double the number of American STEM graduates by 2029." The SIA says that although U.S. companies still lead the world with nearly half of global market share, "state-backed competition from abroad seeks to displace U.S. leadership."

Photonics and Military Medicine: The Air Force Office of Scientific Research (AFOSR) plans to offer "a small number of individual awards" for research and development aimed at using lasers and other light source technology applications in military medicine and combat casualty care, including photobiology, surgery, and closely related materials sciences. The efforts proposed may be basic or applied research, and "must offer unique capabilities, not substantially funded by other DOD or other agency programs." [Learn more](#) (FA9550-19-S-0002).

NSF, AMAZON TEAM UP ON AI 'FAIRNESS': NSF and Amazon are partnering to jointly support computational research focused on fairness in AI, with the goal of contributing to trustworthy AI systems that are readily accepted and deployed to tackle grand challenges facing society. Specific topics of interest include, but are not limited to transparency, explainability, accountability, potential adverse biases and

effects, mitigation strategies, validation of fairness, and considerations of inclusivity. Funded projects will enable broadened acceptance of AI systems, helping the U.S. further capitalize on the potential of AI technologies. Although Amazon provides partial funding for this program, it will not play a role in the selection of proposals for award. The RFP and more information is posted on the website https://www.nsf.gov/pubs/2019/nsf19571/nsf19571.htm?WT.mc_id=USNSF_179 More details are included in the grant opportunity section below.

\$36 MILLION FOR SOLAR-GRID RESILIENCE: Seven universities and several companies will share research money intended to "advance solar energy's role in strengthening the resilience of the nation's electricity grid," the Department of Energy says. "With more and more solar being added to the U.S. electricity generation portfolio, these projects will enable grid operators to rapidly detect physical and cyber-based abnormalities in the power system and utilize solar generation to recover quickly from power outages, in many cases without human control." [See the winning projects.](#)

NSF REPORT on AMERICA'S WORKFORCE: According to the recent National Science Board publication, our Nation's Future Competitiveness Relies on Building a STEM-Capable Workforce: A Policy Companion to Science and Engineering Indicators 2018, the number of U.S. jobs requiring "substantial science, technology, engineering, and mathematics (STEM) expertise" has increased 34 percent over the past decade. A workshop by the Business Higher Education Forum and National Science Foundation concluded that the nation needs "a STEM-capable U.S. workforce that leverages the hard work, creativity, and ingenuity of women and men of all ages, all education levels, and all backgrounds." Participants, including ASEE representatives, recommended:

- Support creation of education ecosystems, pathways, and workforce partnership models that result in dissemination and wide-spread take-up of research findings by the broader community.
- Plan and implement new federal programs and activities focused on STEM-capable workforce development, diversification, and reskilling.
- Facilitate coordination both internally within each federal agency and externally across all agencies on workforce development.
- Create a clearinghouse of policies, best practices, and recommendations for state and local governments to align and leverage federal legislation related to STEM, STEMcapable, and broader workforce-related topics. [Read the full report.](#)

QUANTUM LEAP: NSF Director France Córdova [tells Nextgov](#) the field of quantum information sciences could be on the verge of a significant breakthrough in the coming years. NSF played a critical role in the "first quantum revolution," which helped create lasers and computer chips, the publication reports, "and today she said the field 'is ready for its second revolution' in the information sciences. 'If I've had any surprises in the time I've been [NSF director], it's how advanced that particular branch of the field is,' she said. 'The research is at hand and just needs a little more investment. I think that something very exciting will happen' in the next three to five years." Chief among those industries is artificial intelligence, a technology the White House sees as increasingly critical to the country's national and economic security. In the [national AI strategy](#) released last month, the Trump administration called on agencies to double down on efforts to advance AI and help the U.S. workforce navigate an increasingly tech-heavy job market. More information is on the website <https://www.nextgov.com/emerging-tech/2019/03/nsf-director-approaching-uncertain-tech-landscape-confidence/155724/>

NSF Convergence Acceleration: NSF's [Convergence Accelerator Pilot](#) has two goals: "to accelerate use-inspired convergence research in areas of national importance, and initiate convergence team-building capacity around exploratory, potentially high-risk proposals in three convergence topics (tracks). . . . NSF is planning to fund approximately 50 Phase 1 awards (up to 9 months and up to \$1 million each). Additional funds will be available for a smaller number of Phase 2 awards. The first-step to become part

of the NSF C-Accel Pilot is to submit a 2-page Research Concept Outline (RCO), aligned with one of the tracks described below, with a target submission date of April 15, 2019." The NSF C-Accel Pilot consists of three tracks, with each track aligned with one of [NSF's 10 Big Ideas](#), namely [Harnessing the Data Revolution \(HDR\)](#) (track A1) and the [Future of Work at the Human-Technology Frontier \(FW-HTF\)](#) (tracks B1 and B2). These tracks also align with Administration R&D Priorities including leadership in artificial intelligence (see [July 2018 memo M-18-22](#)), the President's Management Agenda (see [Cross Agency Priority Goals](#)), and the U.S. [5-Year STEM Education Strategic Plan](#). The NSF C-Accel Pilot's tracks focus on use-inspired research with relatively short timeframes for deliverables and are intended to leverage partnerships. The tracks build upon existing convergence research with the intention of accelerating discovery and innovation, leading to deliverable research products. More information is on the website <https://www.nsf.gov/pubs/2019/nsf19050/nsf19050.jsp?org=NSF>

Webinar and Events

Event: NSF Electronic Research Administration (ERA) Forum Webinar

Sponsor: NSF

When: April 10, 2019; 1.00 PM – 2.15 PM

Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=298039&org=NSF

Brief Description: The purpose of this Forum is to gather individual opinions and perspectives around NSF ERA activities. This open Forum is also used to present proposed solutions, collect feedback, understand how solutions may impact the research community, and solicit volunteers for testing. As a reminder, space is limited for the webinar. If you are co-located with colleagues, we strongly encourage you to view the WebEx session as a group, to allow for maximum participation by the research community. The topic for this forum will be Separately Submitted Collaborative Proposals from Multiple Organizations on Research.gov.

To join the webinar: [Register Here Now](#)

Event: Webcast: Presidential Awards for Excellence in Mathematics and Science Teaching Events

Sponsor: NSF

When: April 15, 2019; 7.00 PM – 8.00 PM

Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=298106&org=NSF

Brief Description: The Presidential Awards for Excellence in Mathematics and Science Teaching (PAEMST) are the highest honors bestowed by the United States government for K-12 science, technology, engineering, mathematics, and/or computer science teaching, with up to 108 teachers awarded each year. Awardees receive \$10,000 from NSF, attend an awards ceremony in Washington, D.C., and receive a certificate signed by the President of the United States.

This year, the program is recognizing 7-12 grade teachers and is currently accepting nominations. To nominate an excellent science, technology, engineering, mathematics, and/or computer science teacher, visit <https://www.paemst.org/nomination/nominate>. Deadline for nominations is April 1st.

Applicant webinars will be held throughout the cycle to provide PAEMST nominees and applicants an in-depth look at the application, feature tips from alumni, and answer all questions. Please consider joining the team for an upcoming applicant webinar **between March 27 and April 30** to learn more about the program and application process.

To register for a webinar: Register at www.paemst.org/webinar. The full schedule is as follows:

- Monday, April 15 at 7:00pm EDT
- Saturday, April 20 at 2:00pm EDT
- Tuesday, April 23 at 7:00pm EDT
- Thursday, April 25 at 8:00pm EDT
- Tuesday, April 30 at 6:00pm EDT

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

Event: NSF Distinguished Lecture Series in Mathematical and Physical Sciences

Sponsor: NSF

When: April 15, 2019 from 2.00 PM

Website: http://sites.nationalacademies.org/deps/bmsa/deps_183972

Brief Description:

Prof. Vicky Kalogera (Northwestern University)

April 15, 2019, 2:00 p.m., Room E3410

"Life Crystals"

Prof. Pupa Gilbert (University of Wisconsin)

May 20, 2019, 2:00 p.m., Room E2020

"Quantum Chemistry: Present and Future Directions"

Prof. Garnet Chan (California Institute of Technology)

To join the webinar: All Distinguished Lectures in Mathematical and Physical Sciences from 2014 through 2017 can be viewed on the web (please [click here](#)).

Event: I-Corps Bio-Entrepreneurship Workshop

Sponsor: UNH ICorps

When: June 2-5, 2019; Applications are due Monday, April 15 at 5 PM eastern time

Website: <https://innovation.unh.edu/icorps/i-corps-bio-entrepreneurship-workshop>

Brief Description: The United Negro College Fund, the National Science Foundation, the Biotechnology Innovation Organization (BIO), the Ernest E. Just Institute for the Life Sciences, University of New Hampshire I-Corps, CSU I-Corps, MIT I-Corps, and Penn I-Corps have partnered to offer a Bio-Entrepreneurship Workshop during the Biotechnology International Conference (BIO 2019; convention.bio.org) in Philadelphia, Pennsylvania June 2-5, 2019. A 3-day I-Corps Bio-Entrepreneurship Workshop, including BIO International Convention exhibition access. Work on teams with industry mentors to learn about biotechnology commercialization, grow your professional network, and explore entrepreneurial opportunities that build on basic research.

Early-career life science researchers from groups underrepresented in biotechnology research organizations. Research-active undergraduate and graduate students, postdoctoral fellows, and assistant professors from universities and colleges nationwide are eligible to participate. Researchers from Historically Black Colleges and Universities, Hispanic Serving Institutions, Tribal Colleges and Universities, and minority-serving institutions are especially encouraged to apply.

Grant Opportunities

National Science Foundation

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. Please see [SaTC program solicitation](#) for more details.

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

Grant Program: Fairness in Artificial Intelligence in Collaboration with Amazon (FAI)

Agency: National Science Foundation NSF 19-571

RFP Website: https://www.nsf.gov/pubs/2019/nsf19571/nsf19571.htm?WT.mc_id=USNSF_179

Brief Description: NSF has long supported transformative research in artificial intelligence (AI) and machine learning (ML). The resulting innovations offer new levels of economic opportunity and growth, safety and security, and health and wellness. At the same time, broad acceptance of large-scale deployments of AI systems relies critically on their trustworthiness which, in turn, depends upon the collective ability to ensure, assess, and ultimately demonstrate the fairness, transparency, explainability, and accountability of such systems. Importantly, the beneficial effects of AI systems should be broadly available across all segments of society.

NSF and Amazon are partnering to jointly support computational research focused on fairness in AI, with the goal of contributing to trustworthy AI systems that are readily accepted and deployed to tackle grand challenges facing society. Specific topics of interest include, but are not limited to transparency, explainability, accountability, potential adverse biases and effects, mitigation strategies, validation of fairness, and considerations of inclusivity. Funded projects will enable broadened acceptance of AI systems, helping the U.S. further capitalize on the potential of AI technologies. Although Amazon provides partial funding for this program, it will not play a role in the selection of proposals for award.

Advancing AI is a highly interdisciplinary endeavor drawing on fields such as computer science, information science, engineering, statistics, mathematics, cognitive science, and psychology. As such, NSF and Amazon expect these varied perspectives to be critical for the study of fairness in AI. NSF's ability to bring together multiple scientific disciplines uniquely positions the agency in this collaboration, while building AI that is fair and unbiased is an important aspect of Amazon's AI initiatives. This program supports the conduct of fundamental computer science research into theories, techniques, and methodologies that go well beyond today's capabilities and are motivated by challenges and requirements in real systems.

Awards: Standard and Continuing Grants. \$750,000 - up to a maximum of \$1,250,000 for periods of up to 3 years. Anticipated Funding: \$7,600,000.

Letter of Intent: May 10, 2019

Proposal Submission Deadline: June 25, 2019

Contacts: Todd Leen, Program Director, CISE/IIS, telephone: (703) 292-8930, email: tleen@nsf.gov

- Sylvia Spengler, Program Director, CISE/IIS, telephone: (703) 292-8930, email: sspengle@nsf.gov
- Steven Breckler, Program Director, SBE/BCS, telephone: (703) 292-7369, email: sbreckle@nsf.gov

Grant Program: Broadening Participation in Engineering (BPE)

Agency: National Science Foundation PD 19-7680

RFP Website:

https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505632&org=NSF&sel_org=NSF&from=fund

Brief Description: NSF seeks to strengthen the future U.S. Engineering workforce by enabling the participation of all citizens through the support of research in the science of Broadening Participation in Engineering (BPE). The BPE program is a dedicated to supporting the development of a diverse and well-prepared engineering workforce. BPE focuses on enhancing the diversity and inclusion of all underrepresented populations in engineering, including gender identity and expression, race and ethnicity (African Americans/Blacks, Hispanic Americans, American Indians, Alaska Natives, Native Hawaiians, and Native Pacific Islanders), disability, LGBTQ+, first generation college and socio-economic status.

BPE funds research to

- Understand and analyze the systemic barriers that prevent underrepresented groups from pursuing and succeeding in engineering, for example, understand the problem of insufficient interest and poorly sustained participation in engineering across underrepresented demographic groups; insignificant preparation and scarce opportunities for members of underrepresented groups to learn meaningful, relevant engineering content.
- Understand and analyze factors that enhance our ability to increase access to engineering by creating support systems and social networks that raise career awareness about different engineering pathways.
- Develop innovative methods and projects to significantly impact the recruitment and retention of engineering students from underrepresented groups. Activities must be supported by relevant data and have the capability to produce a model that can be replicated in other contexts.
- Develop innovative methods and projects to aggressively recruit and retain tenure track faculty from underrepresented groups.
- Design and transform culture to make diversity, equity, and inclusion a priority in the engineering enterprise.

BPE research activities will provide scientific evidence that engineering educators, employers, and policy makers need to make informed decisions to design effective programs that broaden the participation of persons from historically underrepresented groups in the engineering workforce. BPE is interested in funding research that spans K-12 to workforce and offers the greatest return on investment. BPE funded research should produce outcomes that are scalable, sustainable, and applicable to various contexts, settings, and demographics within the engineering enterprise. BPE is particularly interested in research that employs intersectional approaches in recognition that gender, race and ethnicity do not exist in isolation from each other and from other categories of social identity.

Awards: Average award is \$350,000 for 36 months

Letter of Intent: Not required

Proposal Submission Deadline: No deadline

Contacts: Paige E. Smith psmith@nsf.gov 703-292-7107

Grant Program: Sustained Availability of Biological Infrastructure (SABI) Core Program**Agency: National Science Foundation NSF 19-569****RFP Website:** <https://www.nsf.gov/pubs/2019/nsf19569/nsf19569.htm>

Brief Description: The Sustained Availability of Biological Infrastructure program (SABI) supports the continued operation of extant infrastructure that will advance basic biological research. Infrastructure supported under this program may include cyberinfrastructure, instrumentation, experimental or observational facilities, biological living stocks which have ongoing costs of operation and maintenance that exceed the reasonable capacity of the host institution. Proposals must make a compelling case that sustained availability of the proposed infrastructure will advance or transform research in biological sciences as supported by the National Science Foundation.

While other programs in the Division of Biological Infrastructure focus on research leading to future infrastructure or on the development or implementation of shared infrastructure, this program focuses on awards that ensure the continued availability of mature infrastructure resources critical to sustain the ability of today's scientific community to conduct leading edge research. Awards made through this program are expected to lead to novel, impactful, and transformative science outcomes through research activities enabled by their use. Infrastructure that demonstrates substantial impact on research supported by the Directorate for Biological Sciences and its collaborating organizations is eligible for support under this program.

Awards: Standard and Continuing Grants. Anticipated Funding: \$5,000,000.

Letter of Intent: Not required

Proposal Submission Deadline: Proposals Accepted Anytime

Contacts: Peter H. McCartney, telephone: (703) 292-8470, email: pmccartn@nsf.gov

- Roland P. Roberts, telephone: (703) 292-7884, email: rolrober@nsf.gov
- Reed S. Beaman, telephone: (703) 292-7163, email: rsbeaman@nsf.gov

Grant Program: Science and Technology Centers: Integrative Partnerships**Agency: National Science Foundation NSF 19-567****RFP Website:** <https://www.nsf.gov/pubs/2019/nsf19567/nsf19567.htm>

Brief Description: The Science and Technology Centers (STC): Integrative Partnerships program supports exceptionally innovative, complex research and education projects that require large-scale, long-term awards. STCs focus on creating new scientific paradigms, establishing entirely new scientific disciplines and developing transformative technologies which have the potential for broad scientific or societal impact. STCs conduct world-class research through partnerships among institutions of higher education, national laboratories, industrial organizations, other public or private entities, and via international collaborations, as appropriate. They provide a means to undertake potentially groundbreaking investigations at the interfaces of disciplines and/or highly innovative approaches within disciplines. STCs may involve any area of science and engineering that NSF supports. STC investments support the NSF vision of creating and exploiting new concepts in science and engineering and providing global leadership in research and education.

Centers provide a rich environment for encouraging future scientists, engineers, and educators to take risks in pursuing discoveries and new knowledge. STCs foster excellence in education by integrating education and research, and by creating bonds between learning and inquiry so that discovery and creativity fully support the learning process.

NSF expects STCs to demonstrate leadership in the involvement of groups traditionally underrepresented in science and engineering at all levels (faculty, students, and postdoctoral researchers) within the Center. Centers use either proven or innovative mechanisms to address issues such as recruitment, retention and mentorship of participants from underrepresented groups.

Centers must undertake activities that facilitate knowledge transfer, i.e., the exchange of scientific and technical information with the objective of disseminating and utilizing knowledge broadly in multiple

sectors. Examples of knowledge transfer include technology transfer, providing key information to public policy-makers, or dissemination of knowledge from one field of science to another.

The STC program supports potentially groundbreaking investigations at the interfaces of disciplines or highly innovative approaches within disciplines. STCs may involve any area of science and engineering that NSF supports. STCs exploit opportunities in science, engineering and technology where the complexity of the research agenda requires the duration, scope, scale, flexibility, and facilities that center support can provide. They help enable U.S. leadership in research in a world in which discovery, learning, and innovation enterprises are increasingly interconnected and increasingly global. Centers offer the science and engineering community a venue for developing effective mechanisms to integrate scientific and technological research and education activities; to explore better and more effective ways to educate students; to broaden participation of underrepresented groups; and to ensure the timely transfer of research and education advances made in service to society. STC partner organizations work together with the lead institution as an integrated whole to achieve the shared research, education, broadening participation, and knowledge-transfer goals of the Center.

Awards: Cooperative Agreements. Anticipated Funding: \$25,000,000; Up to 5 awards in FY2021

Letter of Intent: Not required

Preliminary Proposals: Submission of Preliminary Proposals is required by June 25, 2019

Proposal Submission Deadline: January 27, 2020

Limit on Number of Proposals per Organization: 3

A single organization may submit a maximum of three preliminary proposals as the lead institution. Full proposals are to be submitted only when invited by NSF. There is no limit on the number of proposals in which an organization participates as a partner institution. The STC program will not support more than one Center from any one lead institution in this competition.

Contacts: Dragana Brzakovic, telephone: (703) 292-8040, email: dbrzakov@nsf.gov

Grant Program: Real-Time Machine Learning (RTML)

Agency: National Science Foundation NSF 19-566

RFP Website: <https://www.nsf.gov/pubs/2019/nsf19566/nsf19566.htm>

Brief Description: A grand challenge in computing is the creation of machines that can proactively interpret and learn from data in real time, solve unfamiliar problems using what they have learned, and operate with the energy efficiency of the human brain. While complex machine-learning algorithms and advanced electronic hardware (henceforth referred to as 'hardware') that can support large-scale learning have been realized in recent years and support applications such as speech recognition and computer vision, emerging computing challenges require real-time learning, prediction, and automated decision-making in diverse domains such as autonomous vehicles, military applications, healthcare informatics and business analytics.

A salient feature of these emerging domains is the large and continuously streaming data sets that these applications generate, which must be processed efficiently enough to support real-time learning and decision making based on these data. This challenge requires novel hardware techniques and machine-learning architectures. This solicitation seeks to lay the foundation for next-generation co-design of RTML algorithms and hardware, with the principal focus on developing novel hardware architectures and learning algorithms in which all stages of training (including incremental training, hyperparameter estimation, and deployment) can be performed in real time.

The National Science Foundation (NSF) and the Defense Advanced Research Projects Agency (DARPA) are teaming up through this Real-Time Machine Learning (RTML) program to explore high-performance, energy-efficient hardware and machine-learning architectures that can learn from a continuous stream of new data in real time, through opportunities for post-award collaboration between researchers supported by DARPA and NSF.

Awards: Continuing Grants. Anticipated Funding: \$10,000,000.

Letter of Intent: Not required

Proposal Submission Deadline: June 6, 2019

Contacts: Sankar Basu, telephone: (703) 292-7843, email: sabasu@nsf.gov

- Jenshan Lin, telephone: (703) 292-7950, email: jenlin@nsf.gov
-

Grant Program: Smart and Connected Communities (S&CC)

Agency: National Science Foundation NSF 19-564

RFP Website: <https://www.nsf.gov/pubs/2019/nsf19564/nsf19564.htm>

Brief Description: Communities in the United States (US) and around the world are entering a new era of transformation in which residents and their surrounding environments are increasingly connected through rapidly-changing intelligent technologies. This transformation offers great promise for improved wellbeing and prosperity but poses significant challenges at the complex intersection of technology and society. The goal of the NSF Smart and Connected Communities (S&CC) program solicitation is to accelerate the creation of the scientific and engineering foundations that will enable smart and connected communities to bring about new levels of economic opportunity and growth, safety and security, health and wellness, and overall quality of life.

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

The S&CC program encourages researchers to work with communities and residents to identify and define challenges they are facing, enabling those challenges to motivate use-inspired research questions. The S&CC program **supports integrative research that addresses fundamental technological and social science dimensions of smart and connected communities** and pilots solutions together with communities. Importantly, the program is interested in projects that consider the sustainability of the research outcomes beyond the life of the project, including the scalability and transferability of the proposed solutions.

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

- **S&CC Integrative Research Grants (SCC-IRGs) Tracks 1 and 2.** Awards in this category will support fundamental integrative research that addresses technological and social science dimensions of smart and connected communities and pilots solutions together with communities. Track 1 is for budgets greater than \$1,500,000 with no recommended budget limit, and for up to four years of support. Track 2 is for budgets not to exceed \$1,500,000, and for up to three years of support.
- **S&CC Planning Grants (SCC-PGs).** Awards in this category are for capacity building to prepare project teams to propose future well-developed SCC-IRG proposals. Each of these awards will provide support for a period of one year and may be requested at a level not to exceed \$150,000 for the total budget.

S&CC is a cross-directorate program supported by NSF’s Directorates for Computer and Information Science and Engineering (CISE), Education and Human Resources (EHR), Engineering (ENG), and Social, Behavioral, and Economic Sciences (SBE).

Awards: 35 to 40 Standard Grants. Anticipated Funding: \$43,000,000. The planning grant is for one year and the proposed budget for each planning grant should not exceed \$150,000.

Letter of Intent: August 6, 2019

Proposal Submission Deadline: September 6, 2019

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

- Radhakishan Baheti, Program Director, ENG/ECCS, telephone: (703) 292-8339, email: rbaheti@nsf.gov
 - Wendy Nilsen, Program Director, CISE/IIS, telephone: (703) 292-2568, email: wnilsen@nsf.gov
-

Grant Program: Next Generation Networks for Neuroscience (NeuroNex): Technology-enabled, Team-based Neuroscience

Agency: National Science Foundation NSF 19-563

RFP Website: <https://www.nsf.gov/pubs/2019/nsf19563/nsf19563.htm>

Brief Description: Understanding how behavior emerges from the dynamic patterns of electrical and chemical activity of brain circuits is universally recognized as one of the great, unsolved mysteries of science. Advances in recent decades have elucidated how individual elements of the nervous system and brain relate to specific behaviors and cognitive processes. However, there remains much to discover to attain a comprehensive understanding of how the healthy brain functions, specifically, the general principles underlying how cognition and behavior relate to the brain's structural organization and dynamic activities, how the brain interacts with its environment, and how brains maintain their functionality over time.

Achieving an understanding of brain structure and function that spans levels of organization, spatial and temporal scales, and the diversity of species requires an international, transdisciplinary collaborative effort to not only integrate discipline-specific ideas and approaches but also extend them to stimulate new discoveries, and innovative concepts, theories, and methodologies.

The objective of this phase of the NeuroNex Program is the establishment of distributed, international research networks that build on existing global investments in neurotechnologies to address overarching questions in neuroscience. The creation of such global research networks of excellence will foster international cooperation by seeding close interactions between a wide array of organizations across the world, as well as creating links and articulating alliances between multiple recently launched international brain projects. The potential transformative advances in neuroscience stemming from this activity will have profound scientific and societal impacts.

The goal of this solicitation is to support collaborative networks (approximately 15 to 20 investigators in each network) comprised of international teams of disciplinarily diverse experimentalists, theorists, and research resource (including technology and cyberinfrastructure) developers working on a common foundational question in neuroscience. It is anticipated that these international networks will enable experimentation, analysis, and discovery in neuroscience at scales much larger than currently possible.

This interdisciplinary, international program is one element of NSF's broader effort directed at Understanding the Brain, a multi-year activity that includes NSF's participation in the Brain Research through Advancing Innovative Neurotechnologies (BRAIN) Initiative (<https://www.nsf.gov/brain/>) and the phased approach to develop a research infrastructure for neuroscience as outlined in the Dear Colleague Letter [NSF 16-047](#). The need for a program that helps neuroscientists collect, standardize, manage, and analyze the large amounts of data that result from research attempting to understand how the brain functions has been recognized by stakeholders in the scientific community and by the U.S. Congress in the American Innovation and Competitiveness Act (AICA) of 2017. The NSF and international partner agencies envision a connected portfolio of transformative, integrative projects that leverage existing global investments in neurotechnologies and create synergistic links across domestic and international investigators and communities, yielding novel ways of tackling the challenges of understanding the brain in action and in context.

Awards: 3 to 5 Standard Grants. Anticipated Funding: \$10,000,000.

Preliminary Proposal: June 14, 2019

Proposal Submission Deadline: December 13, 2019

Contacts: Reed S. Beaman, telephone: (703) 292-7163, email: rsbeaman@nsf.gov

- Krastan B. Blagoev, telephone: (703) 292-4666, email: kblagoev@nsf.gov
 - Shubhra Gangopadhyay, telephone: (703) 292-2485, email: sgangopa@nsf.gov
 - Claire A. Hemingway, telephone: (703) 292-7135, email: chemingw@nsf.gov
-

Grant Program: Planning Grants for Engineering Research Centers (ERC)

Agency: National Science Foundation NSF 19-562

RFP Website: <https://www.nsf.gov/pubs/2019/nsf19562/nsf19562.htm>

Brief Description: The ERC program is placing greater emphasis on research that leads to societal impact, including convergent approaches, engaging stakeholder communities, and strengthening team formation, in response to the NASEM study recommendations. The ERC program intends to support planning activities leading to convergent research team formation and capacity-building within the engineering community. This planning grant solicitation is designed to foster and facilitate the engineering community's thinking about how to form convergent research collaborations. To participate in a forthcoming ERC competition, one is not required to submit a planning grant proposal nor to receive a planning grant.

Awards: 30 to 40 Standard Grants. Anticipated Funding: \$4,000,000. The planning grant is for one year and the proposed budget for each planning grant should not exceed \$100,000.

Letter of Intent: Not required

Proposal Submission Deadline: June 3, 2019

Contacts: Junhong Chen, telephone: (703) 292-4623, email: junchen@nsf.gov

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

Grant Program: Quantum Leap Challenge Institutes (QLCI)

Agency: National Science Foundation NSF 19-559

RFP Website: <https://www.nsf.gov/pubs/2019/nsf19559/nsf19559.htm>

Brief Description: Quantum Leap Challenge Institutes are large-scale interdisciplinary research projects that aim to advance the frontiers of quantum information science and engineering. Research at these Institutes will span the focus areas of quantum computation, quantum communication, quantum simulation and/or quantum sensing. The institutes are expected to foster multidisciplinary approaches to specific scientific, technological, educational workforce development goals in these fields. Two types of awards will be supported under this program: (i) 12-month Conceptualization Grants (CGs) to support teams envisioning subsequent Institute proposals and (ii) 5-year Challenge Institute (CI) awards to establish and operate Quantum Leap Challenge Institutes. This activity is part of the Quantum Leap, one of the research Big Ideas promoted by the National Science Foundation (NSF). The NSF Quantum Leap Challenge Institutes program is consistent with the scope of *NSF multidisciplinary centers for quantum research and education* as described in the National Quantum Initiative Act ¹.

In 2016, the NSF unveiled a set of "Big Ideas," ten bold, long-term research and process ideas that identify areas for future investment at the frontiers of science and engineering (see https://www.nsf.gov/news/special_reports/big_ideas/index.jsp). The Big Ideas represent unique opportunities to position our nation at the cutting edge of global science and engineering leadership by bringing together diverse disciplinary perspectives to support convergence research. Although proposals responding to this solicitation must be submitted to the Office of Multidisciplinary Activities (OMA) in the Directorate of Mathematical and Physical Sciences (MPS), they will subsequently be managed by a cross-disciplinary team of NSF Program Directors.

Awards: Standard Grants. Anticipated Funding: \$94,000,000; **Estimated Number of Awards:** 1 to 28

Letter of Intent: Required

Proposal Submission Deadline:

Proposal Due Dates:

Round I (CG and CI proposals):	
Letters of Intent for CG proposals due	Apr 1, 2019
CG proposals due	June 3, 2019
Letters of Intent for CI preliminary proposals (Round I) due	June 3, 2019
CI preliminary proposals (Round I) due	Aug 1, 2019
CI full proposals (by invitation only) due	Jan 2, 2020
Round II (CI proposals only):	
Letters of Intent for CI preliminary proposals (Round II) due	Aug 3, 2020
CI preliminary proposals (Round II) due	Sep 1, 2020
CI full proposals (by invitation only) due	Feb 1, 2021

Any proposal submitted in response to this solicitation should be submitted in accordance with the revised *NSF Proposal & Award Policies & Procedures Guide* (PAPPG) ([NSF 19-1](#)).

Contacts: Quantum Leap Challenge Institutes, telephone: (703) 292-4861, email: QLCI@nsf.gov

Grant Program: Faculty Development in the Space Sciences

Agency: National Science Foundation NSF 19-558

RFP Website: <https://www.nsf.gov/pubs/2019/nsf19558/nsf19558.htm>

Brief Description: The Geospace Section of the Division of Atmospheric and Geospace Sciences is pleased to offer awards for the creation of new tenure-track faculty positions within the intellectual disciplines which comprise the space sciences to ensure the health and vitality of solar and space sciences on university teaching faculties. The aim of these awards is to integrate research topics in solar and space physics into basic physics, astronomy, electrical engineering, geoscience, meteorology, computer science, and applied mathematics programs, and to develop space physics graduate programs capable of training the next generation of leaders in this field. Space Science is interdisciplinary in nature and the Faculty Development in the Space Sciences awardees will be expected to establish partnerships within the university community. NSF funding will support the entire academic year salary and benefits of the newly recruited tenure-track faculty member for a duration of up to five years with a total award amount not to exceed \$1,500,000.

Awards: Continuing Grants. Anticipated Funding: \$4,500,000.

Letter of Intent: Not required

Proposal Submission Deadline: May 24, 2019

Contacts: S. Irfan Azeem, telephone: (703) 292-8518, email: sazeem@nsf.gov

Grant Program: EHR Core Research: Production Engineering Education and Research (ECR: PEER)

Agency: National Science Foundation NSF 19-557

RFP Website: <https://www.nsf.gov/pubs/2019/nsf19557/nsf19557.htm>

Brief Description: The National Science Foundation (NSF) and The Boeing Company are supporting a new initiative, managed and administered by NSF through its EHR Core Research (ECR) program, to accelerate training in critical skill areas for the Nation's engineering and advanced manufacturing workforce. The *EHR Core Research: Production Engineering Education and Research* (ECR: PEER) initiative supports foundational research arising from the design, development, and deployment of creative online curricula that provide learners at various levels with skills in five focal areas: model-based systems engineering, software engineering, mechatronics, data science, and artificial intelligence. ECR: PEER invites proposals to design, develop, deploy, and study the effectiveness of online courses in any one of these focal areas using the theories and tools of the learning sciences. Proposals for these ECR: PEER *Course, Curriculum, and Evaluation* projects may request a maximum of \$2,000,000 support for a duration of up to three years.

Additionally, ECR: PEER welcomes proposals to convene experts in the academic, for-profit, and non-profit sectors to imagine the future of production engineering education for one of the five focal areas. Proposals for these ECR: PEER *Workforce Development Workshops* may request a maximum of \$100,000 support for a duration of up to one year.

Awards: Standard Grants. Anticipated Funding: \$10,000,000.

Letter of Intent: Not required

Proposal Submission Deadline: May 15, 2019

Contacts: Radhakishan Baheti, telephone: (703) 292-8339, email: rbaheti@nsf.gov

- John C. Cherniavsky, telephone: (703) 292-5136, email: jchernia@nsf.gov
- David L. Haury, telephone: (703) 292-8614, email: dhaury@nsf.gov

Grant Program: Signals in the Soil (SitS)

Agency: National Science Foundation NSF 19-556

RFP Website: <https://www.nsf.gov/pubs/2019/nsf19556/nsf19556.htm>

Brief Description: The National Science Foundation (NSF) Directorates for Engineering (ENG) and Geosciences (GEO), the Division of Integrative Organismal Systems in the Directorate for Biological Sciences (BIO/IOS), and the Division of Computer and Network Systems in the Directorate Computer and Information Science and Engineering (CISE/CNS), in collaboration with the US Department of Agriculture National Institute of Food and Agriculture (USDA NIFA) and the Natural Environment Research Council (NERC), the Engineering and Physical Sciences Research Council (EPSRC), the Biotechnology and Biological Sciences Research Council (BBSRC), and the Science and Technology Facilities Council (STFC) of United Kingdom Research and Innovation (UKRI) encourage convergent research that transforms existing capabilities in understanding dynamic, near-surface soil processes through advances in sensor systems and modeling. To accomplish this research, multiple disciplines must converge to produce novel sensors and/or sensing systems of multiple modalities that are adaptable to different environments and collect data and report on a wide range of chemical, biological and physical parameters. This type of approach will also be necessary to develop next generation soil models, wireless communication and cyber systems capabilities, and to grow a scientific community that is able to address complex problems through education and outreach. This program fosters collaboration among the partner agencies and the researchers they support by combining resources and funding for the most innovative and high-impact projects that address their respective missions.

Awards: Standard Grants. Anticipated Funding: \$5,600,000.

Letter of Intent: Not required

Proposal Submission Deadline: May 15, 2019

Contacts: Brandi L. Schottel, National Science Foundation Directorate for Engineering / Division of Chemical, Bioengineering, Environmental, and Transport Systems, telephone: (703) 292-4798, email: bschotte@nsf.gov

James W. Jones, National Science Foundation Directorate for Engineering / Division of Chemical, Bioengineering, Environmental, and Transport Systems, telephone: (703) 292-4458, email: jwjones@nsf.gov

Grant Program: Cyber-Physical Systems (CPS)

Agency: National Science Foundation NSF 19-553

RFP Website: <https://www.nsf.gov/pubs/2019/nsf19553/nsf19553.htm>

Brief Description: Cyber-physical systems (CPS) are engineered systems that are built from, and depend upon, the seamless integration of computation and physical components. Advances in CPS will enable capability, adaptability, scalability, resiliency, safety, security, and usability that will expand the horizons of these critical systems. CPS technologies are transforming the way people interact with engineered systems, just as the Internet has transformed the way people interact with information. New, smart CPS drive innovation and competition in a range of application domains including agriculture, aeronautics, building design, civil infrastructure, energy, environmental quality, healthcare and personalized medicine, manufacturing, and transportation. Moreover, the integration of artificial intelligence with CPS creates new research opportunities with major societal implications.

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

The CPS program aims to develop the core research needed to engineer these complex CPS, some of which may also require dependable, high-confidence, or provable behaviors. Core research areas of the program include control, data analytics, autonomy, design, information management, internet of things (IoT), mixed initiatives including human-in- or on-the-loop, networking, privacy, real-time systems, safety, security, and verification. By abstracting from the particulars of specific systems and application domains, the CPS program seeks to reveal cross-cutting, fundamental scientific and engineering principles that underpin the integration of cyber and physical elements across all application domains. The program additionally supports the development of methods, tools, and hardware and software components based upon these cross-cutting principles, along with validation of the principles via prototypes and testbeds. This program also fosters a research community that is committed to advancing education and outreach in CPS and accelerating the transition of CPS research into the real world.

Awards: Standard Grants. Anticipated Funding: \$51,500,000.

Letter of Intent: Not required

Proposal Submission Deadline:

April 01, 2019 - April 12, 2019: Small and Medium

September 12, 2019 - September 26, 2019: Frontier

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

- Radhakisan Baheti, Program Director, ENG/ECCS, telephone: (703) 292-8339, email: rbaheti@nsf.gov

- Anindya Banerjee, Program Director CISE /CCF, telephone: (703) 292-7885, email: abanerje@nsf.gov

Grant Program: ADVANCE: Organizational Change for Gender Equity in STEM Academic Professions (ADVANCE)

Agency: National Science Foundation NSF 19-552

RFP Website: <https://www.nsf.gov/pubs/2019/nsf19552/nsf19552.htm>

Brief Description: The NSF ADVANCE program contributes to the National Science Foundation's goal of a more diverse and capable science and engineering workforce.¹ In this solicitation, the NSF ADVANCE program seeks to build on prior NSF ADVANCE work and other research and literature concerning gender, racial, and ethnic equity. The NSF ADVANCE program goal is to broaden the implementation of evidence-based systemic change strategies that promote equity for STEM² faculty in academic workplaces and the academic profession. The NSF ADVANCE program provides grants to enhance the systemic factors that support equity and inclusion and to mitigate the systemic factors that create inequities in the academic profession and workplaces. Systemic (or organizational) inequities may exist in areas such as policy and practice as well as in organizational culture and climate. For example, practices in academic departments that result in the inequitable allocation of service or teaching assignments may impede research productivity, delay advancement, and create a culture of differential treatment and rewards. Similarly, policies and procedures that do not mitigate implicit bias in hiring, tenure, and promotion decisions could lead to women and racial and ethnic minorities being evaluated less favorably, perpetuating historical under-participation in STEM academic careers and contributing to an academic climate that is not inclusive.

All NSF ADVANCE proposals are expected to use intersectional approaches in the design of systemic change strategies for STEM faculty in recognition that gender, race and ethnicity do not exist in isolation from each other and from other categories of social identity. The solicitation includes four funding tracks *Institutional Transformation (IT)*, *Adaptation, Partnership*, and *Catalyst*, in support of the NSF ADVANCE program goal to broaden the implementation of systemic strategies that promote equity for STEM faculty.

Please note that NSF ADVANCE does not provide fellowships, research, or travel grants to individual students, postdoctoral researchers, or faculty to pursue STEM degrees or research. Undergraduate STEM opportunities can be found at stemundergrads.science.gov and graduate STEM opportunities at stemgradstudents.science.gov.

Awards: Standard Grants. Anticipated Funding: \$30,000,000.

Letter of Intent: Required

Proposal Submission Deadline:

Letter of Intent Due Date(s) (required) (due by 5 p.m. submitter's local time):

May 15, 2019

Letter of Intent due for May 2019 Adaptation and Partnership competition

November 01, 2019

Letter of Intent for January 2020 Adaptation and Partnership competition

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

October 01, 2019

Target Date for IT-Preliminary proposals - preliminary proposals are only required for IHEs that want a chance to submit a full Institutional Transformation proposal

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

May 22, 2019

Adaptation and Partnership (FY 2019 competition)

January 15, 2020

Adaptation and Partnership (FY 2020 competition)

Full Proposal Target Date(s):

June 03, 2019

Catalyst proposals

March 02, 2020

Institutional Transformation proposals - only IHEs invited as a result of an IT-Preliminary proposal may submit a full IT proposal

Contacts: Minerva Cordero, Program Director, telephone: (703) 292-7377, email: ADVANCE@nsf.gov

- Jessie DeAro, Program Officer, telephone: (703) 292-5350, email: ADVANCE@nsf.gov

Grant Program: Growing Convergence Research (GCR)

Agency: National Science Foundation NSF 19-551

RFP Website: <https://www.nsf.gov/pubs/2019/nsf19551/nsf19551.htm>

Brief Description: Growing Convergence Research (GCR) at the National Science Foundation was identified as one of 10 Big Ideas. Convergence research is a means for solving vexing research problems, in particular, complex problems focusing on societal needs. It entails integrating knowledge, methods, and expertise from different disciplines and forming novel frameworks to catalyze scientific discovery and innovation.

GCR identifies [Convergence Research](#) as having two primary characteristics:

- *Research driven by a specific and compelling problem.* Convergence Research is generally inspired by the need to address a specific challenge or opportunity, whether it arises from deep scientific questions or pressing societal needs.
- *Deep integration across disciplines.* As experts from different disciplines pursue common research challenges, their knowledge, theories, methods, data, research communities and languages become increasingly intermingled or integrated. New frameworks, paradigms or even disciplines can form sustained interactions across multiple communities.

A distinct characteristic of convergence research, in contrast to other forms of multidisciplinary research, is that from the inception, the convergence paradigm *intentionally* brings together intellectually diverse researchers and stakeholders to frame the research questions, develop effective ways of communicating across disciplines and sectors, adopt common frameworks for their solution, and, when appropriate, develop a new scientific vocabulary. Research teams practicing convergence aim at developing sustainable relationships that may not only create solutions to the problem that engendered the collaboration, but also develop novel ways of framing related research questions and open new research vistas.

This GCR solicitation targets multi-disciplinary team research that crosses directorate or division boundaries and is currently not supported by NSF programs, initiatives and research-focused Big Ideas. Proposers must make a convincing case that the research to be conducted is within NSF's purview and cannot be supported by existing NSF programs and multidisciplinary initiatives. Proposals involving convergence in areas covered by existing programs and solicitations will be returned without review.

Awards: Cooperative Agreement. Anticipated Funding: \$12,000,000.

Letter of Intent: Not required

Proposal Submission Deadline: May 08, 2019

Contacts: Dragana Brzakovic, telephone: (703) 292-8040, email: dbrzakov@nsf.gov

Grant Program: Harnessing the Data Revolution (HDR): Transdisciplinary Research in Principles of Data Science Phase I (HDR TRIPODS Phase I)

Agency: National Science Foundation NSF 19-550

RFP Website: <https://www.nsf.gov/pubs/2019/nsf19550/nsf19550.htm>

Brief Description: NSF's [Harnessing the Data Revolution \(HDR\) Big Idea](#) is a national-scale activity to enable new modes of data-driven discovery that will allow fundamental questions to be asked and answered at the frontiers of science and engineering. Through this NSF-wide activity, HDR will generate new knowledge and understanding, and accelerate discovery and innovation. The HDR vision is realized through an interrelated set of efforts in:

- Foundations of data science;
- Algorithms and systems for data science;
- Data-intensive science and engineering;
- Data cyberinfrastructure; and
- Education and workforce development.

Each of these efforts is designed to amplify the intrinsically multidisciplinary nature of the emerging field of data science. The HDR Big Idea will establish theoretical, technical, and ethical frameworks that will be applied to tackle data-intensive problems in science and engineering, contributing to data-driven decision-making that impacts society.

Harnessing the Data Revolution: Transdisciplinary Research In Principles Of Data Science (HDR TRIPODS) aims to bring together the electrical engineering, mathematics, statistics, and theoretical computer science communities to develop the theoretical foundations of data science through integrated research and training activities. Phase I, described in this solicitation, will support the development of small collaborative Institutes. Phase II (to be described in an anticipated future solicitation, subject to availability of funds) will support a smaller number of larger Institutes, selected from the Phase I Institutes via a second competitive proposal process. All HDR TRIPODS Institutes must involve significant and integral participation by researchers representing at least three of the four aforementioned communities. Please note that the ordering of the four communities is alphabetical and is not meant to emphasize any one discipline over another.

Awards: Continuing Grant. Anticipated Funding: \$22,000,000.

Letter of Intent: Required

Proposal Submission Deadline:

- **Letter of Intent Due Date(s) (required)** (due by 5 p.m. submitter's local time):

March 25, 2019

- **Submission Window Date(s)** (due by 5 p.m. submitter's local time):

April 24, 2019 - May 08, 2019

Contacts: Nandini Kannan, Program Director, Division of Mathematical Sciences, telephone: (703) 292-8104, email: nakannan@nsf.gov

- Tracy Kimbrel, Program Director, Division of Computing and Communication Foundations, telephone: (703) 292-7924, email: tkimbrel@nsf.gov
- Anthony Kuh, Program Director, Division of Electrical, Communications, and Cyber Systems, telephone: (703) 292-2210, email: akuh@nsf.gov

Grant Program: Harnessing the Data Revolution (HDR): Institutes for Data-Intensive Research in Science and Engineering - Frameworks (I-DIRSE-FW)

Agency: National Science Foundation NSF 19-549

RFP Website:

https://www.nsf.gov/pubs/2019/nsf19549/nsf19549.htm?WT.mc_id=USNSF_25&WT.mc_ev=click

Brief Description: NSF's *Harnessing the Data Revolution (HDR) Big Idea* is a national-scale activity to enable new modes of data-driven discovery that will allow fundamental questions to be asked and answered at the frontiers of science and engineering. Through this NSF-wide activity, HDR will generate new knowledge and understanding, and accelerate discovery and innovation. The HDR vision is realized through an interrelated set of efforts in:

- Foundations of data science;
- Algorithms and systems for data science;
- Data-intensive science and engineering;
- Data cyberinfrastructure; and
- Education and workforce development.

Each of these efforts is designed to amplify the intrinsically multidisciplinary nature of the emerging field of data science. The HDR Big Idea will establish theoretical, technical, and ethical frameworks that will be applied to tackle data-intensive problems in science and engineering, contributing to data-driven decision-making that impacts society.

This solicitation is for Frameworks for Data-Intensive Research in Science and Engineering (DIRSE) as part of the HDR Institutes activity. These Frameworks represent one path of a

conceptualization phase aimed at developing Institutes as part of the NSF investment in the HDR Big Idea.

The HDR Institutes activity seeks to create an integrated fabric of interrelated institutes that can accelerate discovery and innovation in multiple areas of data-intensive science and engineering. The HDR Institutes will achieve this by harnessing diverse data sources and developing and applying new methodologies, technologies, and infrastructure for data management and analysis. The HDR Institutes will support convergence between science and engineering research communities as well as expertise in data science foundations, systems, applications, and cyberinfrastructure. In addition, the HDR Institutes will enable breakthroughs in science and engineering through collaborative, co-designed programs to formulate innovative data-intensive approaches to address critical national challenges.

HDR Institutes will be developed through a two-phase process involving conceptualization followed by convergence. The conceptualization phase will be implemented in FY 2019 via two complementary funding opportunities. The first opportunity in FY 2019 will encourage individuals with compelling data-intensive science and engineering problems and/or technical expertise to self-organize into teams with the aim of developing innovative, collaborative research proposals through an Ideas Lab process. The second opportunity in FY 2019, described in this solicitation, will encourage applications from teams of researchers proposing frameworks for integrated sets of science and engineering problems and data science solutions. The conceptualization phase will result in two-year awards aimed at building communities, defining research priorities, and developing interdisciplinary prototype solutions. NSF anticipates implementing the subsequent convergence and co-design phase in the 2021 timeframe with awards that integrate and scale successful prototypes and new ideas into larger, more comprehensive HDR Institutes that bring together multiple science and engineering communities with computer and computational scientists, mathematicians, statisticians, and information scientists around common data science approaches.

The overarching goal of the HDR Institutes DIRSE Frameworks solicitation is to foster convergent approaches to data-driven research in science and engineering. Frameworks will consist of interdisciplinary teams to conceptualize and pilot new modalities for collaboration and convergence that go beyond institutional walls and traditional disciplinary boundaries, to build innovative connections between scientific groups and data scientists and engineers, to integrate research infrastructure and education infrastructure. The Frameworks should focus on science and engineering areas that: (1) are at a "tipping point" where a timely investment in data-intensive approaches has the maximum potential for a transformative effect, (2) have needs that can benefit from interdisciplinary investments in data analytics infrastructure, and (3) represent investment priorities for the participating NSF directorates during, and beyond, the lifetime of the HDR Big Idea. Specific outcomes expected from the Frameworks include identification of frontier science and engineering challenge problems and the associated data and data-science barriers or tipping points, as well as development of new strategies and innovative approaches to foster scientific breakthroughs involving researchers from diverse scientific backgrounds.

Awards: Standard Grants. Anticipated Funding: \$21,000,000.

Letter of Intent: Not required

Proposal Submission Deadline: May 07, 2019

Contacts: Amy Walton, telephone: (703) 292-4538, email: HDR-DIRSE@nsf.gov

- Nandini Kannan, telephone: (703) 292-8104, email: HDR-DIRSE@nsf.gov
- John C. Cherniavsky, telephone: (703) 292-5136, email: HDR-DIRSE@nsf.gov

National Institutes of Health

Grant Program: NIH Director's Pioneer Award Program (DP1 Clinical Trial Optional)

Agency: National Institutes of Health RFA-RM-19-005

RFP Website: <https://grants.nih.gov/grants/guide/rfa-files/RFA-RM-19-005.html>

Brief Description: The [NIH Director's Pioneer Award](#) supports individual scientists of exceptional creativity who propose highly innovative and broadly impactful research towards the ultimate goal of enhancing human health. In order to support the most innovative and impactful research, the NIH recognizes the need to promote a diverse research workforce. Applications to this award program should reflect the full diversity of potential applicants, applicant institutions, and research topic areas. Applications from talented researchers with diverse backgrounds underrepresented in research, including underrepresented racial and ethnic groups, persons with disabilities, and women are strongly encouraged to apply to this Funding Opportunity Announcement. Outstanding research is conducted at a broad spectrum of institutions. In seeking to support the highest quality research, this Funding Opportunity Announcement encourages applications from the full range of eligible institutions, including those that may serve primarily underrepresented groups, those that may be less research-intensive, and from all domestic geographic locations. Applications are welcome in all research topics that have the potential ultimately to have a substantial impact on human health. In addition to the nominal biomedical sciences, these include, but are not limited to, relevant research topics in the behavioral, social, applied, and formal sciences. The potential for impact on human health may be near term (clinical or translational research) or long term (basic research). The paramount features of the research proposed must be innovation and magnitude of potential impact.

In the Pioneer Award program, emphases are on the qualities of the investigator, the innovativeness, and potential impact of the proposed research. Preliminary data and detailed experimental plans are not requested. To be considered pioneering, the proposed research must reflect substantially different ideas from those being pursued in the investigator's current research program or elsewhere. The Pioneer Award is not intended to expand a current research program into the area of the proposed project. While the research direction may rely on the applicant's prior work and expertise as its foundation, it cannot be an obvious extension or scale-up of a current research enterprise which may be competitive as a new or renewal R01 application. Rather, the proposed project must reflect a fundamental new insight, and which may involve exceptionally innovative approaches and/or radically unconventional hypotheses. Applications for projects that are extensions of ongoing research should not be submitted.

Award: Awards will be for \$700,000 in direct costs per year, plus applicable Facilities and Administrative (F&A) costs.

Letter of Intent: Not required

Deadline: September 9, 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: NIH Director's Transformative Research Awards (R01 Clinical Trial Optional)

Agency: National Institutes of Health RFA-RM-19-007

RFP Website: <https://grants.nih.gov/grants/guide/rfa-files/RFA-RM-19-007.html>

Brief Description: The [NIH Director's Transformative Research Award](#) Program supports collaborative investigative teams or individual scientists who propose unusually innovative research projects, which, if successful, would have a major impact in a broad area of relevance to the NIH. To be considered transformative, projects must have the potential to create or overturn fundamental scientific paradigms through novel approaches, transform the way research is conducted through the development of novel tools or technologies, or lead to major improvements in health through the development of highly innovative therapies, diagnostic tools, or preventive strategies. Consistent with this focus, Transformative Research Award applications should reflect ideas substantially different from mainstream concepts.

Several key features of this FOA are designed to emphasize to applicants and peer reviewers that Transformative Research applications are very different from conventional, investigator-initiated research applications. The Transformative Research application focuses on the importance of the problem, the novelty of the hypothesis and/or the proposed methodology, and the magnitude of the potential impact

rather than on preliminary data or experimental details. Reviewers will be instructed to emphasize the significance and innovation of the application in their evaluations. Applicants and reviewers should keep the goal of the Transformative Research Award in mind throughout the process– to solicit and fund unusually innovative and potentially transformative research.

In order to support the most innovative and impactful research, the NIH recognizes the need to promote a diverse research workforce. Applications to this award program should reflect the full diversity of potential applicants, applicant institutions, and research topic areas. Applications from talented researchers with diverse backgrounds underrepresented in research, including underrepresented racial and ethnic groups, persons with disabilities, and women are strongly encouraged to apply to this Funding Opportunity Announcement. Outstanding research is conducted at a broad spectrum of institutions. In seeking to support the highest quality research, this Funding Opportunity Announcement encourages applications from the full range of eligible institutions, including those that may serve primarily underrepresented groups, those that may be less research-intensive, and from all domestic geographic locations. Applications are welcome in all research topics that have the potential ultimately to have a substantial impact on human health. In addition to the nominal biomedical sciences, these include, but are not limited to, relevant research topics in the behavioral, social, applied, and formal sciences. The potential for impact on human health may be near term (clinical or translational research) or long term (basic research). The paramount features of the research proposed must be innovation and magnitude of potential impact.

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

Letter of Intent: Not required

Deadline: September 20, 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: Institutional Translational Research Training Program (T32)

Agency: National Institutes of Health PAR-19-228

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PA-19-228.html>

Brief Description: The purpose of the Institutional Translational Research Training Program is to equip trainees with the knowledge and skills needed to advance basic research toward clinical application. These programs will support, students and/or postdocs conducting basic, disease-relevant research in an environment that includes 1) basic scientists and clinicians who are actively engaged in collaborative research projects, 2) neuroscience researchers with expertise in translational processes who are conducting research designed to move basic discoveries toward clinical application and 3) relationships with industry and government regulatory agencies. Programs will have a cohesive educational approach to translational training in areas relevant to the NINDS and NIA missions, and in which students and postdocs learn the processes involved in translational research in the context of their individual projects. Programs supported by this FOA must include activities that ensure a thorough understanding of experimental design, strong statistical and analytical skills, and skills for communicating science with a wide variety of audiences. These programs are intended to be 2 years in duration and support training of one or more of the following groups: advanced predoctoral students, postdoctoral fellows and fellowship-stage clinicians. Upon completion of the program, trainees will be prepared to address basic research problems with an understanding of the requirements for translating discoveries into viable therapies.

This Funding Opportunity Announcement (FOA) does not allow appointed Trainees to lead an independent clinical trial but does allow them to obtain research experience in a clinical trial led by a mentor or co-mentor.

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: May 29, 2019; May 27, 2020; May 26, 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: Undergraduate Research Training Initiative for Student Enhancement (U-RISE) (T34)

Agency: National Institutes of Health PAR-19-218

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-19-218.html>

Brief Description: The **Overarching Objective** of this Undergraduate Research Training Initiative for Student Enhancement program is to develop a diverse pool of undergraduates who complete their baccalaureate degree and transition into and complete biomedical, research-focused higher degree programs (e.g., Ph.D. or M.D./Ph.D.). The long-term goal is to develop a diverse pool of well-trained biomedical scientists, who have the following technical, operational, and professional skills:

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

Diversity at all levels—from the kinds of science to the regions in which it is conducted to the backgrounds of the people conducting it—contributes to excellence in research training environments and strengthens the research enterprise. This FOA is intended to support outstanding research training programs that will enhance diversity at all levels. As part of a larger initiative to enhance diversity, the U-RISE program will support trainees who are earning a baccalaureate degree at research-active institutions and who intend to complete a biomedical research higher degree program (e.g., Ph.D., or M.D./Ph.D.).

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

Letter of Intent: Not required.

Deadline: May 21, 2019; May 21, 2020; May 21, 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: NINDS Institutional Research Training Program (T32)

Agency: National Institutes of Health PAR-19-211

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-19-211.html>

Brief Description: The objective of the NINDS Institutional Research Training Program is to support outstanding training with the breadth and depth to prepare advanced predoctoral and postdoctoral trainees to become successful scientists in a rapidly evolving research enterprise that is increasingly complex and multidisciplinary. Neuroscience research requires investigators who can draw on knowledge and approaches from multiple disciplines and levels of analysis, and apply this broad knowledge in novel ways to yield new discoveries about the nervous system. Moreover, impactful neuroscience research requires investigators with strong foundational skills in experimental design, statistical methodology and quantitative reasoning.

Summary of key points. It is expected that the programs supported under this funding opportunity announcement will provide:

- training and activities with a defined goal and within a thematic area that will add depth and breadth to the trainees' scientific development
- an emphasis on sound experimental design, the proper use of statistical methodology and a theoretical understanding by each trainee of the quantitative limits and capabilities of his or her experimental system (quantitative literacy)
- effective oversight of trainee mentoring and progression to the next career stage
- an environment that promotes the success of individuals with a wide variety of backgrounds and perspectives
- direct access to an appropriate diversity of role models, both within the institution and through activities such as invited seminars.
- activities for trainees to develop oral and written skills for communicating their science to a wide variety of audiences
- access to structured career development advising and opportunities to learn about career options in various sectors

Moreover, NINDS T32 support should only be provided to trainees in labs of mentors who proactively ensure the opportunity to lead and be first author on a significant project.

The proposed institutional research training program may complement other ongoing research training and career development programs at the applicant institution, but the proposed program must be clearly distinct from related programs currently receiving Federal support.

Award: Application budgets are not limited, but need to reflect the actual needs of the proposed project up to 5 years.

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

Deadline: May 29, 2019; May 27, 2020; May 26, 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: Team-Based Design in Biomedical Engineering Education (R25 Clinical Trial Not Allowed)

Agency: National Institutes of Health PAR-19-215

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-19-215.html>

Brief Description: The NIH Research Education Program (R25) supports research educational activities that complement other formal training programs in the mission areas of the NIH Institutes and Centers. The over-arching goals of the NIH R25 program are to: (1) complement and/or enhance the training of a workforce to meet the nation's biomedical, behavioral and clinical research needs; (2) encourage individuals from diverse backgrounds, including those from groups underrepresented in the biomedical and behavioral sciences, to pursue further studies or careers in research; (3) help recruit individuals with specific specialty or disciplinary backgrounds to research careers in biomedical, behavioral and clinical sciences; and (4) foster a better understanding of biomedical, behavioral and clinical research and its implications.

The over-arching goal of this NIBIB R25 program is to support educational activities that complement and/or enhance the training of a workforce to meet the nation's biomedical, behavioral and clinical research needs. To accomplish the stated over-arching goal, this FOA will support creative educational activities with a primary focus on:

- **Courses for Skills Development:** For example, courses and programs that, using a team-based design approach, incorporate state-of-the-art best practices (such as multidisciplinary/interdisciplinary education, the regulatory pathway and other issues related to the commercialization of medical devices, and the immersion of engineering students in a clinical environment) and further enhance these with novel creative and/or ground-breaking approaches and activities which will be implemented and evaluated with the goal of disseminating the outcomes for the benefit of the larger biomedical engineering education community.

Research education programs may complement ongoing research training and education occurring at the applicant institution, but the proposed educational experiences must be distinct from those training and education programs currently receiving Federal support. R25 programs may augment institutional research training programs (e.g., T32, T90) but cannot be used to replace or circumvent Ruth L. Kirschstein National Research Service Award (NRSA) programs.

Award: Direct costs of up to \$20,000 per year may be requested. Programs that include a clinical immersion program outside the academic year and lasting 6 to 10 weeks may request an additional \$20,000 to cover participant costs (see Participant Costs section below), yielding a total of \$40,000 in direct costs.

Letter of Intent: April 29, 2019; April 27, 2020; April 26, 2021

Deadline: May 31, 2019; May 28, 2020; May 28, 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: Summer Research Education Experience Program (R25 Clinical Trial Not Allowed)

Agency: National Institutes of Health PAR-19-197

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-19-197.html>

Brief Description: The over-arching goal of this R25 program is to support educational activities that complement and/or enhance the training of a workforce to meet the nation's biomedical, behavioral and clinical research needs. To accomplish the stated over-arching goal, this FOA will support creative educational activities with a primary focus on:

- **Research Experiences:** For example, for high school and undergraduate students: to provide hands-on exposure to research, to reinforce their intent to graduate with a science degree and/or continue to participate in research, and/or to prepare them for college or graduate school admissions and/or careers in research; for high school science teachers: to enhance their science teaching.
- Support for science teachers will be limited to those programs with a clear plan for how teachers will utilize their summer experience in their teaching during the school year, such as enhancing the STEM curriculum or increasing number of STEM courses taught.
- Applications that demonstrate the potential to impact students and teachers from diverse backgrounds are particularly encouraged.
- In addition to hands-on research experiences, programs are expected to include complementary activities that support the participants' scientific development, such as scientific writing and presentation skills and training in rigor and reproducibility.
- The proposed program needs to fit with the mission of the participating IC that the application is being submitted to and should not have a general STEM focus. ICs will not

support projects, regardless of the results of merit review, if they do not fulfill current programmatic priorities. Therefore, we strongly recommend that potential applicants consult Scientific/Research Staff at the intended IC listed in Section VII before preparing an application. For the specific ICs, the following represents mission focus areas (more information can be found on the Table of IC-Specific Information and Contacts page):

- **NIAAA** broadly encourages research that focuses on the following 5 goals: (1) identifying the mechanism of; (2) improve diagnosis and tracking of; (3) develop and improve strategies to prevent; and (4) develop and improve treatments for alcohol misuse, alcohol use disorder and alcohol-related consequences; and (5) enhance the public health impact of NIAAA-supported research.
- **NIBIB** will support applications focusing on summer research experiences broadly in the areas of biomedical imaging, bioengineering, or health informatics. NIBIB will support programs only for high school science teachers and community college faculty from STEM-related departments, and not for students.
- **NIDA**. Four main goals outline the broad scope of NIDA's strategic objectives: (1) identify the biological, environmental, behavioral, and social causes and consequences of drug use and addiction across the lifespan; (2) develop new and improved strategies to prevent drug use and its consequences; (3) develop new and improved treatments to help people with substance use disorders achieve and maintain a meaningful and sustained recovery; (4) increase the public health impact of NIDA research and programs.
- **NIEHS** will support applications focusing on summer research experiences in the environmental health sciences. Applications to NIEHS should provide research experiences that address or seek to understand how exposures to toxic environmental insults impact health, alter biologic processes, are linked to disease initiation, progression or morbidity, or activities that lead to the development of prevention and intervention strategies to reduce environmentally induced diseases.
- **NINDS** will support applications focusing on summer research experiences that address or seek fundamental knowledge about the brain and nervous system by supporting and conducting research on the healthy and diseased brain, spinal cord, and peripheral nerves and to use that knowledge to reduce the burden of neurological disease.

Research education programs may complement ongoing research training and education occurring at the applicant institution, but the proposed educational experiences must be distinct from those training and education programs currently receiving Federal support. R25 programs may augment institutional research training programs (e.g., T32, T90) but cannot be used to replace or circumvent Ruth L. Kirschstein National Research Service Award (NRSA) programs.

Award: Although the size of award may vary with the scope of the Summer Research Program proposed, budgets cannot exceed \$100,000 direct costs per year.

Letter of Intent: 30 days prior to application due date

Deadline: April 23, 2019, March 17, 2020, March 17 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: Clinical and Biological Measures of TBI-related dementia including Chronic Traumatic Encephalopathy (CTE) (R01 Clinical Trial Not Allowed)

Agency: National Institutes of Health RFA-NS-19-026

RFP Website: <https://grants.nih.gov/grants/guide/rfa-files/RFA-NS-19-026.html>

Brief Description: Applications to this FOA will be expected to discover and develop biological and clinical measures of TBI-related progressive neurodegeneration and cognitive decline associated with

increased risk for dementia including traumatic encephalopathy syndrome (TES) (clinicopathologic diagnostic counterpart to the neuropathological diagnosis of Chronic Traumatic Encephalopathy (CTE)). Results are expected to inform dementia risk prognoses for patients with history of TBI, using objective clinical and pathophysiologically relevant biological measures. Addressing this goal will require (1) enhanced, validated methods for assessing individual's lifetime exposure to TBI (across varying levels of frequency, severity, and time since injury), (2) accounting for chronic but non-progressive neurocognitive impairment following TBI, and (3) access to an existing longitudinal cohort with a history of TBI exposure and / or dementia cohort with measures of TBI-exposure history. Applicants to this FOA are expected to assess hypothesis-driven objective biological measures and clinical assessments of progressive neurodegeneration, neurocognitive impairment, and neuropsychiatric dysfunction that, in persons with a history of exposure to TBI, may catalyze pathological pathways associated with AD / ADRD and TES. Biological measures may include but are not limited to neuroimaging (such as CT, MRI and PET imaging), vascular reactivity, assessments of sleep, oculomotor and vestibular function, blood-based biomarkers, proteomics, transcriptomics, metabolomics, biofluid markers from samples of CSF and saliva, and known genetic markers of dementia risk.

To address the heterogeneity of post-TBI clinicopathology and extend the generalizability of results, applications to this FOA are expected to recruit both male and female participants with history of TBI across multiple injury severities. These individuals may include former athletes from a variety of sports but should not be limited to the recruitment of or enrich recruitment primarily with former American-rules Football players. To ensure maximal value of this project, a critical feature of this FOA includes the broad sharing of clinical, neuroimaging, physiological, and biospecimen data through the Federal Interagency TBI Research (FITBIR) database.

Award: Application budgets are not limited, but should rarely exceed \$1,000,000 in direct costs per year, and need to reflect the actual needs of the proposed project.

Letter of Intent: March 15, 2019

Deadline: April 15, 2019, by 5:00 PM local time of applicant organization.

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: Ruth L. Kirschstein National Research Service Award (NRSA) Individual Predoctoral Fellowship (Parent F31)

Agency: National Institutes of Health PA-19-195

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PA-19-195.html>

Brief Description: The purpose of the Ruth L. Kirschstein National Research Service Award (NRSA) Individual Predoctoral Fellowship (Parent F31) is to enable promising predoctoral students to obtain individualized, mentored research training from outstanding faculty sponsors while conducting dissertation research. Applicants for this F31 program are expected to propose a dissertation research project and training plan in scientific health-related fields relevant to the mission of the participating Institutes and Centers. This training plan should reflect the applicant's dissertation research project, and facilitate and clearly enhance the individual's potential to develop into a productive, independent research scientist. The training plan should document the need for, and the anticipated value of, the proposed mentored research and training in relationship to the individual's research career goals. The training plan should also facilitate the fellow's transition to the next stage of his/her research career.

It is expected that the mentored research training experience will provide:

- A strong foundation in research design, methods, and analytic techniques appropriate to the proposed dissertation research;
- The enhancement of the applicant's ability to conceptualize and think through research problems with increasing independence;

- Experience conducting research using appropriate, state-of-the-art methods, as well as presenting and publishing the research findings as first author;
- The opportunity to interact with members of the scientific community at appropriate scientific meetings and workshops;
- Skills needed to transition to the next stage of the applicant's research career; and
- The opportunity to enhance the applicant's understanding of the health-related sciences and the relationship of the proposed research to health and disease.

Applicants for the F31 must be candidates for the PhD degree and have identified a dissertation research project and sponsor(s).

Award: Award budgets are composed of stipends, tuition and fees, and institutional allowance.

Letter of Intent: Not required

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.

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: Shared Instrumentation Grant (SIG) Program (S10 Clinical Trial Not Allowed)

Agency: National Institutes of Health PAR-19-179

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-19-179.html>

Brief Description: The purpose of this funding opportunity is to continue the Shared Instrumentation Grant (SIG) Program administered by ORIP. The objective of the Program is to make available to institutions expensive research instruments that can only be justified on a shared-use basis and that are needed for NIH-supported projects in basic, translational or clinical biomedical and bio-behavioral research. The SIG Program provides funds to purchase or upgrade a single item of expensive, state-of-the-art, specialized, commercially available instrument or an integrated instrumentation system. An integrated instrumentation system is one in which the components, when used in conjunction with one another, perform a function that no single component could provide. The components must be dedicated to the system and not used independently.

Types of supported instruments include, but are not limited to: X-ray diffractometers, mass spectrometers, nuclear magnetic resonance (NMR) spectrometers, DNA and protein sequencers, biosensors, electron and light microscopes, cell sorters, and biomedical imagers. Applications for "stand alone" computer systems (supercomputers, computer clusters and data storage systems) will only be considered if the system is solely dedicated to biomedical research.

All instruments, integrated systems, and computer systems must be dedicated to research only.

Award: Applications will be accepted that request a single, commercially available instrument or an integrated system. The minimum award is \$50,000 of direct costs. There is no upper limit on the cost of the instrument, but the maximum award is \$600,000 of direct costs. Since the cost of the various instruments will vary, it is anticipated that the amount of the award will also vary. S10 awards do not allow indirect costs.

Letter of Intent: Not required

Deadline: May 31, 2019, by 5:00 PM local time at the applicant organization. All types of applications allowed for this funding opportunity 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: Shared Instrumentation for Animal Research (SIFAR) Grant Program (S10 Clinical Trial Not Allowed)

Agency: National Institutes of Health PAR-19-178

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-19-178.html>

Brief Description: The Shared Instrumentation for Animal Research (SIFAR) Grant Program invites groups of NIH-funded investigators engaged in biomedical research using animals to seek support for high-cost, state-of-the art, commercially available scientific instruments. All requested instruments must be used on shared basis and enhance research that uses animals or related materials such as animal tissues, cells, or germplasm.

NIH-funded investigators use many different vertebrate and invertebrate animals in biomedical research, including worms, flies, fish, and rodents. This Funding Opportunity Announcement (FOA) supports instrumentation requests related to all animal species needed for NIH-supported biomedical research. NIH-funded investigators rely on a broad spectrum of technologies including nuclear magnetic resonance (NMR) spectrometers, mass spectrometers, DNA and protein sequencers, biosensors, electron and confocal microscopes, cell-sorters, and biomedical imagers. This FOA supports requests for all available technologies to enhance research using animals or related biological materials such as tissue, cells, or germplasm, for the ultimate benefit of human health.

Applicants may request clusters of instruments configured as specialized integrated systems or as a series of instruments to support a specific thematic area of biomedical research using animals. An integrated instrumentation system is one in which components, when used in conjunction with one other, perform a function that no single component could provide. A series of instruments may support a specialized workflow or provide synergetic functionalities to advance a thematic area of research. Any instrument, requested as a part of a cluster or a series, must be commercially available.

Award: Applications will be accepted for commercially available instruments only. At least one item of the requested instrumentation must cost at least \$50,000, after all applicable discounts. No instrument in a cluster can cost less than \$20,000, after all applicable discounts. There is no upper limit on the cost of each instrument, but the maximum award is \$750,000 of direct costs. Since the cost of the various instruments will vary, it is anticipated that the amount of the award will also vary. S10 awards do not allow indirect costs.

Letter of Intent: Not required

Deadline: May 31, 2019, by 5:00 PM local time at the applicant organization. All types of applications allowed for this funding opportunity 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: High-End Instrumentation (HEI) Grant Program (S10 Clinical Trial Not Allowed)
Agency: National Institutes of Health PAR-19-177

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-19-177.html>

Brief Description: The purpose of this funding opportunity is to continue the High-End Instrumentation (HEI) Grant Program administered by ORIP. The objective of the Program is to make available to institutions expensive research instruments that can only be justified on a shared-use basis and that are needed for NIH-supported projects in basic, translational or clinical areas of biomedical/behavioral research. The HEI Program provides funds to purchase or upgrade a single item of expensive, specialized, commercially available instrument or an integrated instrumentation system. An integrated instrumentation system is one in which the components, when used in conjunction with one another, perform a function that no single component could provide. The components must be dedicated to the system and not used independently.

Types of supported instruments include, but are not limited to: X-ray diffractometers, mass and nuclear magnetic resonance (NMR) spectrometers, DNA and protein sequencers, biosensors, electron and light microscopes, cell sorters, and biomedical imagers. Applications for "stand alone" computer systems (supercomputers, computer clusters and data storage systems) will only be considered if the instrument is solely dedicated to the research needs of NIH-supported investigators.

To facilitate the introduction of advanced cutting-edge instrumentation technologies providing new research capabilities to the biomedical field, a risk-return trade-off is allowed when certain classes

of instruments or integrated systems are requested. Accordingly, the HEI program supports the acquisition of unique instruments or integrated systems developed by reliable commercial vendors, provided the instruments or all components of integrated systems are guaranteed by the manufacturer's one-year warranty. Due to the novelty of the technologies and the uniqueness of their implementation, specialized and technologically savvy groups of investigators will be qualified to lead the adoption of such instruments for biomedical research and the development of innovative biomedical applications. Therefore, if such novel instrument is requested, the applicant should demonstrate special technical expertise, merging physical and biological sciences. For integrated systems, the applicant must provide a detailed description about how the system will be put together and about technical expertise of the individual(s) who will be responsible for assembling of the system. The applicant must also provide a detailed description of training for the investigators listed in the application about the use of the novel technology to advance their research.

All instruments, integrated systems, and computer systems must be dedicated to research only.

Award: Applications will be accepted that request a single, commercially available instrument or integrated system. The minimum award is \$600,001 of direct costs. There is no upper limit on the cost of the instrument, but the maximum award is \$2,000,000 of direct costs. Since the cost of the various instruments will vary, it is anticipated that the size of the award will also vary. S10 awards do not allow indirect costs.

Letter of Intent: Not required

Deadline: May 31, 2019, by 5:00 PM local time at the applicant organization. All types of applications allowed for this funding opportunity 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: NHLBI Emerging Investigator Award (EIA) (R35 Clinical Trial Optional)

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

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

Brief Description: The purpose of the NHLBI Outstanding Investigator Award (OIA) is to promote scientific productivity and innovation by providing long-term support and increased flexibility to experienced Program Directors (PDs)/Principal Investigators (PIs) who are currently PDs/PIs on at least two NHLBI R01-equivalent awards and whose outstanding record of research demonstrate their ability to make major contributions to heart, lung, blood and sleep (HLBS) research. The NHLBI OIA is intended to support a research program, rather than a research project, by providing the primary and most likely sole source of NHLBI funding on individual grant awards.

This FOA is intended for established investigators who have the potential to conduct outstanding, innovative research. For this reason, eligibility is limited. Please refer to [Section III. Eligibility Information](#) for specific details.

It is anticipated that the NHLBI OIA will:

- Provide a stable funding environment, thereby improving productivity and facilitating ambitious, creative research;
- Increase scientific innovation by enabling flexibility in pursuing new research directions as they arise, since PDs/PIs will not be bound to specific aims proposed in advance of the studies;
- Reduce the time researchers spend writing grant applications and managing multiple grant awards, thereby allowing more time to be devoted to conducting research;
- Facilitate PDs/PIs commitment to research through increased stability of funding; and
- Enable PDs/PIs to devote more time and energy to mentoring junior scientists and providing scientific service.

An NHLBI OIA is intended to be the primary, and in most cases, sole support for all of the NHLBI-related research conducted by an investigator. Research supported through the NHLBI OIA should be related to HLB research as described within the scope of the NHLBI mission

(<http://www.nhlbi.nih.gov/about/org/mission>), sleep disorders closely-coupled to HLB outcomes, or basic sleep and circadian regulation. Within these bounds, investigators will have the freedom to explore new avenues of inquiry that arise during the course of their research. Work involving the addition of human subjects, vertebrate animals, stem cells, select agents, or a new foreign component requires prior approval of NHLBI staff according to existing policies and procedures.

Award: Applications may request up to \$600,000 direct costs per year. Investigators are encouraged to request what is well-justified for their research program. In general, the request should be commensurate with the PD/PI's recent NHLBI support.

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

Deadline: March 15, 2016; February 15, 2017; February 15, 2018, 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: Summer Research Education Experience Program (R25 Clinical Trial Not Allowed)

Agency: National Institutes of Health PAR-19-164

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-19-164.html>

Brief Description: The NIH Research Education Program (R25) supports research educational activities that complement other formal training programs in the mission areas of the NIH Institutes and Centers. The over-arching goals of the NIH R25 program are to: (1) complement and/or enhance the training of a workforce to meet the nation's biomedical, behavioral and clinical research needs; (2) encourage individuals from diverse backgrounds, including those from groups underrepresented in the biomedical and behavioral sciences, to pursue further studies or careers in research; (3) help recruit individuals with specific specialty or disciplinary backgrounds to research careers in biomedical, behavioral and clinical sciences; and (4) foster a better understanding of biomedical, behavioral and clinical research and its implications.

The over-arching goal of this R25 program is to support educational activities that foster a better understanding of biomedical, behavioral and clinical research and its implications. To accomplish the stated over-arching goal, this FOA will support creative educational activities with a primary focus on:

- **Research Experiences: Create educational activities** during the summer academic break. For example, for undergraduate students: to provide hands-on exposure to research, to reinforce their intent to graduate with a science degree, and/or to prepare them for graduate school admissions and/or careers in research; for high school and college science teachers: to enhance their science teaching.
- Support for science teachers at the K-12 and college level will be limited to those programs with a clear plan for how teachers will utilize their summer experience in their teaching during the school year.
- Applications that demonstrate the potential to impact students and teachers from diverse backgrounds are particularly encouraged.
- The proposed program needs to fit with the mission of the participating IC that the application is being submitted to and should not have a general STEM focus. For the specific ICs, the following represents mission focus areas (more information can be found on the Table of IC-Specific Information and Contacts page):
- NIAAA broadly encourages research that focuses on the following 5 goals: (1) identifying the mechanism of; (2) improve diagnosis and tracking of; (3) develop and improve strategies to prevent; and (4) develop and improve treatments for alcohol misuse, alcohol

use disorder and alcohol-related consequences; and (5) enhance the public health impact of NIAAA-supported research.

- **NIDA.** Four main goals outline the broad scope of NIDA's strategic objectives: (1) Identify the biological, environmental, behavioral, and social causes and consequences of drug use and addiction across the lifespan; (2) Develop new and improved strategies to prevent drug use and its consequences; (3) Develop new and improved treatments to help people with substance use disorders achieve and maintain a meaningful and sustained recovery; (4) Increase the public health impact of NIDA research and programs.
- **NIEHS** will support applications focusing on summer research experiences in the environmental health sciences. Applications to NIEHS should provide research experiences that address or seek to understand how exposures to toxic environmental insults impact health, alter biologic processes, are linked to disease initiation, progression or morbidity, or activities that lead to the development of prevention and intervention strategies to reduce environmentally induced diseases.
- **NINDS.** The National Institute of Neurological Disorders and Stroke (NINDS) will support applications focusing on summer research experiences that address or seek fundamental knowledge about the brain and nervous system by supporting and conducting research on the healthy and diseased brain, spinal cord, and peripheral nerves and to use that knowledge to reduce the burden of neurological disease. NINDS will support a maximum of two awards per institution (identified by a unique DUNS number): one focused on students and one focused on science teachers.

Research education programs may complement ongoing research training and education occurring at the applicant institution, but the proposed educational experiences must be distinct from those training and education programs currently receiving Federal support. R25 programs may augment institutional research training programs (e.g., T32, T90) but cannot be used to replace or circumvent Ruth L. Kirschstein National Research Service Award (NRSA) programs.

Award: Although the size of award may vary with the scope of the Summer Research Program proposed, budgets cannot exceed \$100,000 direct costs per year.

Letter of Intent: 30 days prior to 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.

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: Bioengineering Research Grants (BRG) (R01 Clinical Trial Not Allowed)

Agency: National Institutes of Health PAR-19-158

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PA-19-158.html>

Brief Description: Many major biomedical research problems are best addressed with a multidisciplinary approach that bridges the life and physical sciences. Principles and techniques in quantitative sciences such as physics, mathematics, chemistry, computer sciences, and engineering are increasingly applied to good effect in biomedical research. Bioengineering approaches integrate principles from diverse technical and biomedical fields, and the resulting multi-disciplinary research provides new understanding, innovative technologies, and new products that improve basic knowledge, human health, and quality of life. This FOA seeks to encourage collaborations of quantitative and physical scientists with biomedical researchers to catalyze the development of innovative bioengineering approaches to the solution of important problems in biomedical research, clinical investigations, and medical practice.

Significant projects may include, but are not limited to: validation and translation of promising tools for prevention, monitoring or intervention; development of quantitative, predictive models of

complex biological systems; integration and optimization of technologies that significantly increase sensitivity, specificity, positive predictive value, negative predictive value, efficiency, or throughput of measurements to address unsolved biological or medical questions; or engineering and testing of delivery systems, tissues, therapeutics, implants, and prosthetics that may improve treatment and healthcare. Innovation in this biomedical engineering FOA has a broad definition that includes development of new methods, ideas, or tools, integration of existing components into new combinations that deliver greater capabilities, new efficiencies, and/or greater effects. Overall impact of these advances may include reducing disparities in care, promoting wellness and independent living, increasing access to and utility of technologies to improve quality of life, reducing cost and complexity of procedures, and increasing throughput, sensitivity and specificity of diagnostic tests.

A project must clearly serve the mission of one or more of the NIH Institutes or Centers participating in this FOA. Investigators are encouraged to contact the designated [Scientific/Research contacts](#) for individual institute focus areas that will be supported. Applicants who seek to establish proof-of-concept are encouraged to respond to the Exploratory Bioengineering Research Grant (EBRG) FOA [<https://grants.nih.gov/grants/guide/pa-files/PA-18-286.html>]. Large team projects with a specific goal that can be addressed in 5-10 years are encouraged to respond to the Bioengineering Research Partnership (BRP) FOA [<https://grants.nih.gov/grants/guide/pa-files/PAR-18-208.html>].

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

Letter of Intent: Not Required

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.

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: Pipeline Safety Research Competitive Academic Agreement Program (CAAP)

Agency: Department of Transportation 693JK319NF0005

Website: <https://www.fedconnect.net/FedConnect/default.htm>

Brief Description: The U.S. Department of Transportation (DOT) Pipeline and Hazardous Materials Safety Administration (PHMSA) hereby requests applications from non-profit institutions of higher education for CAAP funding to research innovative solutions to pipeline corrosion and other known pipeline integrity challenges.

Research Area #1: Anomaly Detection and Characterization Background: Advancements in nondestructive inspection methods have continued to increase in sophistication and capabilities, allowing for the detection of more pipeline anomalies with an array of geometries, depths, severities, and types. However, current technologies are limited in identifying interactive anomalies.

Research Area #2: Develop and Validate ILI Technologies for Circumferential Anomalies and Bending Stresses Collectively, PHMSA and industry have invested heavily in improvements to In Line Inspection (ILI) technology towards a variety of integrity threats. However, some preliminary research was funded on circumferential cracking detection and characterization cracking in dents (particularly on the pipe's bottom side) creating a driver for additional research and development. This project should develop and validate advanced ILI technology in compliance with B31G and Remaining Strength of Corroded Pipe (RSTRENG) to detect circumferential cracking and characterize its severity in dents (particularly bottom side). The project should also quantify bending stresses, including those contributions from geotechnical and environmental conditions.

Research Area #3: Unmanned Aerial Systems (UAS) to Enhance Pipeline Safety Background: Unmanned Aerial Systems (UAS), using both line of sight and beyond line of sight unmanned aerial vehicles, potentially provide the safety regulator the ability to gain visual access to areas that would

otherwise be inaccessible due to rough terrain, inclement weather, or other adverse conditions. Furthermore, UAS-collected information may provide pipeline inspectors the ability to determine regulatory compliance, and enhance incident response following pipeline leaks or natural disasters.

Awards: Subject to the availability of funds, PHMSA anticipates awarding up to \$2,000,000 and the amount of Federal funding may not exceed \$250,000 per award.

Proposal Deadline: May 03, 2019

Contact Information: Agreement Administrator Ben Patterson Ben.Patterson@dot.gov

Grant Program: FY19 High Priority Program – Innovative Technology Deployment (HP-ITD)

Agency: Department of Transportation DOT/Federal Motor Carrier Safety Administration FM-MHP-19-002

Website: <https://www.grantsolutions.gov/gs/preaward/previewPublicAnnouncement.do?id=63372>

Brief Description: As the lead government agency responsible for the regulation and safety oversight of commercial motor vehicles (CMV), FMCSA awards HP-ITD funds to support innovative and impactful projects that advance its mission to reduce crashes, injuries, and fatalities involving large trucks and buses. Funding is available for the support of innovative projects that improve safety and compliance with CMV regulations, are national in scope, demonstrate new technologies, and reduce the number of CMV crashes. These activities are supported in alignment with the U.S. Department of Transportation's strategic goals of: •SAFETY: Reduce transportation-related fatalities and serious injuries across the transportation system. •INFRASTRUCTURE: Invest in infrastructure to ensure safety, mobility and accessibility and to stimulate economic growth, productivity and competitiveness for American workers and businesses. •INNOVATION: Lead in the development and deployment of innovative practices and technologies that improve the safety and performance of the Nation's transportation system. •ACCOUNTABILITY: Serve the Nation with reduced regulatory burden and greater efficiency, effectiveness and accountability.

Awards: Any award for funds to develop or revise an ITD PP/TLD shall not exceed \$150,000 of Federal funding.

Proposal Deadline: April 26, 2019

Contact Information: Administrative and Budgetary Requirements: 202-366-4186 Rikita Jarrett (Grants Management Office) email: rikita.jarrett@dot.gov

Program Requirements or Technical Assistance: Bettina Conroy 518-810-2985 email: bettina.conroy@dot.gov

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

Agency: Department of Transportation 693JJ318NF5227-2019

Website: <https://fhwaapps.fhwa.dot.gov/tficsp/signin.aspx>.

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

Brief Description: The DDETFP Graduate Fellowship provides funding for students to pursue master's or doctoral degrees in transportation-related disciplines. The program objectives are: 1) to attract the Nation's brightest minds to the field of transportation; 2) to enhance the careers of transportation professionals by encouraging them to seek advanced degrees; and 3) to retain top talent in the transportation industry of the United States. The DDETFP is intended to enhance the breadth and scope of knowledge of the entire transportation community in the United States. The DDETFP Graduate Fellowship encompasses all modes of transportation.

Awards: Actual stipend level may vary based upon IHE formal policy and available funding.

Proposal Deadline: April 8, 2019

Contact Information: Contact the FHWA Universities and Grants Programs (U&GP) at 703-235-0538 or transportationedu@dot.gov.

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

Grant Program: DoD Parkinson's Investigator-Initiated Research Award

Agency: Department of Defense Dept. of the Army – USAMRAA W81XWH-19-PRP-IIRA

Co-RFPs: W81XWH-19-PRP-EIRA DoD Parkinson's Early Investigator Research Award

Website: <https://cdmrp.army.mil/funding/prp>

Brief Description: The PRP IIRA supports highly rigorous, multidisciplinary, high-impact research projects that have the potential to make an important contribution to Parkinson's disease research and/or patient care. This award mechanism supports the full spectrum of research from basic science through clinical research that specifically focuses on scientific and clinical Parkinson's disease issues, which, if successfully addressed, have the potential to make a major impact in understanding, preventing, diagnosing, or treating Parkinson's disease or enhancing the wellbeing of individuals experiencing the impact of the disease.

All applications to the FY19 PRP Investigator-Initiated Research Award (IIRA) Program Announcement MUST address at least one of the following FY19 PRP Focus Areas: • Clinical and research application of digital health technology for Parkinson's disease monitoring including early identification • Mechanisms of non-motor symptoms of Parkinson's disease from basic biology to clinical application • Sleep biology in Parkinson's disease • Quantifiable gene - environment interactions and the risk of Parkinson's disease

Awards: The anticipated total costs budgeted for the entire period of performance for an FY19 PRP Investigator-Initiated Research Award will not exceed \$1.5M total costs for a single investigator or \$2.4M combined total costs for the Partnering PI option.

Proposal Deadline: Pre-Application Submission Deadline: 5:00 p.m. Eastern time (ET), July 9, 2019 • Application Submission Deadline: 11:59 p.m. ET, July 24, 2019

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

Grant Program: DoD Autism Idea Development Award

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

Co-RFP: W81XWH-19-ARP-CTRA DoD Autism Clinical Translational Research Award

Website: <https://cdmrp.army.mil/funding/arp>

Brief Description: The ARP 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 ASD. This award mechanism is designed to support innovative ideas with the potential to yield impactful data and new avenues of investigation.

The FY19 ARP Idea Development Award seeks applications from all areas of basic and preclinical research and strongly encourages applications that address the critical needs of the ASD community in one or more of the following areas: • Assessment of novel therapeutics using valid preclinical models • Environmental risk factors • Mechanisms of heterogeneous clinical expression of ASD • Mechanisms underlying conditions co-occurring with ASD (e.g., sleep disturbances, gastrointestinal issues, inflammation, aggression, depression, anxiety, attention deficit, seizures, eating disorders, pharmacologic side effects, gender dysphoria) • Factors promoting success in key transitions to independence for individuals living with ASD • Factors impacting quality of life during geographic relocation, such as military permanent change of station • Development of healthcare provider-focused training or tools to improve healthcare delivery for individuals with ASD across the life span and the continuum of care (i.e., primary care, urgent/emergent care, and disaster relief) • Improve diagnosis and access to services across the life span

Awards: The anticipated direct costs budgeted for the entire period of performance for an FY19 ARP Idea Development Award will not exceed \$500,000.

Proposal Deadline: Pre-Application Submission Deadline: 5:00 p.m. Eastern time (ET), May 1, 2019 • Invitation to Submit an Application: June 10, 2019 • Application Submission Deadline: 11:59 p.m. ET, August 8, 2019

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

Grant Program: Real Time Machine Learning (RTML)

Agency: Department of Defense DARPA - Microsystems Technology Office HR001119S0037

Website:

https://www.fbo.gov/index?s=opportunity&mode=form&id=a32e37cfad63edcba7cfd5d997422d93&tab=core&_cview=1

Brief Description: A grand challenge in computing is the creation of a processor that can proactively interpret and learn from data in real-time, solve unfamiliar problems using what it has learned, and operate with the energy efficiency of the human brain. The National Science Foundation (NSF) and the Defense Advanced Research Projects Agency (DARPA) are teaming up through the Real-Time Machine Learning (RTML) program to develop the foundational breakthroughs in hardware and machine learning needed to build systems that respond and adapt in real time.

The Microsystems Technology Office at DARPA is soliciting innovative research proposals in the area of real time machine learning hardware. The Real Time Machine Learning program will develop machine-learning hardware generators and explore circuit architectures that can proactively interpret and learn from data, solve unfamiliar problems using what it has learned, and operate at power levels on par or better than the human brain. Proposed research should investigate innovative approaches that enable revolutionary advances in science, devices, or systems.

Awards: Multiple awards; Available Funding \$10,000,000

Proposal Deadline: Proposers Day: April 2, 2019 o FAQ Submission Deadline: 1:00 PM on April 15, 2019 o Proposal Due Date: 1:00 PM on May 1, 2019

Contact Information: Andreas Olofsson, Program Manager BAA Coordinator:
HR001119S0037@darpa.mil

Grant Program: Science of Artificial Intelligence and Learning for Open-world Novelty (SAIL-ON)

Agency: Department of Defense DARPA - Defense Sciences Office HR001119S0038

Website:

https://www.fbo.gov/index?s=opportunity&mode=form&id=42d0a9427a1f878b0ce99fcaabb6c645&tab=core&_cview=1

Brief Description: The Defense Sciences Office (DSO) of the Defense Advanced Research Projects Agency (DARPA) is soliciting innovative research proposals for new AI methodologies and techniques that support (1) the principled characterization and generation of novelty in open worlds and (2) the creation of AI systems capable of operating appropriately and effectively in open worlds. Proposed research should investigate innovative approaches that enable revolutionary advances in science, devices, or systems. Specifically excluded is research that primarily results in evolutionary improvements to the existing state of practice.

Awards: Multiple Awards

Proposal Deadline: Proposers Day: March 5, 2019. See Section VIII.C. o Abstract Due Date: April 2, 2019, 4:00 p.m. o FAQ Submission Deadline: April 30, 2019, 4:00 p.m. See Section VIII.A. o Full Proposal Due Date: May 10, 2019, 4:00 p.m.

Contact Information: Ted Senator, Program Manager, DARPA/DSO o BAA Email: SAILON@darpa.mil

Grant Program: Air Force Fiscal Year 2020 Young Investigator Research Program (YIP)

Agency: Department of Defense Air Force Office of Scientific Research FOA-AFRL-AFOSR-2019-0003

Website: <https://www.wpafb.af.mil/Welcome/Fact-Sheets/Display/Article/842100/afosr-funding-opportunities-special-programs/#anchor2>

Brief Description: The Air Force YIP supports scientists and engineers who have received Ph.D. or equivalent degrees within the last seven years and show exceptional ability and promise for conducting basic research. The objectives of this program are:

1. to foster creative basic research in science and engineering;
2. enhance early career development of outstanding young investigators;
3. and increase opportunities for the young investigator to recognize the Air Force mission and related challenges in science and engineering.

Eligibility: Individual awards are made to U.S. institutions of higher education, industrial laboratories, or non-profit research organizations where the principal investigator (PI) is employed on a full-time basis and holds a regular position. YIP PIs must be a U.S. citizen, national, or permanent resident. Researchers working at a Federally Funded Research and Development Center or DoD Laboratory are not eligible for this competition. Research proposals must address Research Interests of the Air Force Office of Scientific Research, FA9550-18-S-0003, found on www.grants.gov.

Awards: Most YIP awards are funded up to \$150,000 per year for three years, for a total of \$450,000. Exceptional proposals will be considered individually for higher funding levels and/or longer duration.

Proposal Deadline: May 31, 2019

Contact Information: Ellen M. Robinson (703) 588-8527 DSN 425-8527 Email: afosryip@us.af.mil

Grant Program: Multidisciplinary Research Program of the University Research Initiative: FY20 ARMY and FY20 AFOSR

Agency: Department of Defense Dept of the Army -- Materiel Command W911NF-19-S-0008

Air Force Office of Scientific Research FOA-AFRL-AFOSR-2019-0002

Website: <https://www.arl.army.mil/www/default.cfm?page=8> for US Army Funding
<https://www.wpafb.af.mil/Welcome/Fact-Sheets/Display/Article/842111/afosr-funding-opportunities-university-research-initiative-uri/#anchor2> for AFOSR

Brief Description: The MURI program supports basic research in science and engineering at U.S. institutions of higher education (hereafter referred to as "universities") that is of potential interest to DoD. The program is focused on multidisciplinary research efforts where more than one traditional discipline interacts to provide rapid advances in scientific areas of interest to the DoD. Basic research is systematic study directed toward greater knowledge or understanding of the fundamental aspects of phenomena and of observable facts without specific applications towards processes or products in mind. It includes all scientific study and experimentation directed toward increasing fundamental knowledge and understanding in those fields of the physical, engineering, environmental, and life sciences related to long-term national security needs. It is farsighted high payoff research that provides the basis for technological progress (DoD 7000.14-R, vol. 2B, chap. 5, para. 050201.B). DoD's basic research program invests broadly in many specific fields to ensure that it has early cognizance of new scientific knowledge. DoD's basic research program invests broadly in many fields to ensure that it has early cognizance of new scientific knowledge.

Awards: Various; Available funding: \$180,000,000. It is anticipated that awards under this topic will be no more than an average of \$1.5M per year for 5 years, supporting no more than 8 funded faculty

researchers. Exceptions warranted by specific proposal approaches should be discussed with the topic chief during the white paper phase of the solicitation.

Proposal Deadline: White Paper Inquiries and Questions 24 May 2019 (Friday) White Papers must be received no later than 03 June 2019 (Monday) at 11:59 PM Eastern Time Application Inquiries and Questions 30 August 2019 (Friday) Applications must be received no later than 13 September 2019 (Friday) at 11:59 PM Eastern Time

Contact Information: Kia S McCormick Procurement Analyst Phone 919-549-4281

Dr. Michael R. Berman, AFOSR, 703-696-7781, michael.berman@us.af.mil Dr. Aura Gimm, AFOSR, 703-696-9542, jung-hwa.gimm.1@us.af.mil

Grant Program: Department of Defense Multidisciplinary Research Program of the University Research Initiative (ONR)

Agency: Department of Defense Office of Naval Research N00014-19-S-F005

Website:

https://www.fbo.gov/index?s=opportunity&mode=form&id=90876d7b71e42be9ba9a2f475bbc782d&tab=core&_cview=1

Brief Description: The MURI program supports basic research in science and engineering at U.S. institutions of higher education (hereafter referred to as "universities") that is of potential interest to DoD. The program is focused on multidisciplinary research efforts where more than one traditional discipline interacts to provide rapid advances in scientific areas of interest to the DoD. As defined in the DoD Financial Management Regulation: Basic research is systematic study directed toward greater knowledge or understanding of the fundamental aspects of phenomena and of observable facts without specific applications towards processes or products in mind. It includes all scientific study and experimentation directed toward increasing fundamental knowledge and understanding in those fields of the physical, engineering, environmental, and life sciences related to long-term national security needs. It is farsighted high payoff research that provides the basis for technological progress (DoD 7000.14-R, vol. 2B, chap. 5, para. 050201.B).

Awards: Various

Proposal Deadline: White Paper Inquiries and Questions 24 May 2019 (Friday) White Papers must be received no later than 03 June 2019 (Monday) at 11:59 PM Eastern Time Application Inquiries and Questions 30 August 2019 (Friday) Applications must be received no later than 13 September 2019 (Friday) at 11:59 PM Eastern Time

Contact Information: David Broadwell Grant Management Specialist Phone 703-588-2866

Grant Program: Department of Defense Advanced Computing Initiative (ACI) Fiscal Year 2019

Agency: Department of Defense Dept of the Army -- Materiel Command W911NF-19-S-0007

Website: <https://www.arl.army.mil/www/default.cfm?page=8>

Brief Description: The ACI is a DoD-sponsored computing systems research program initiated by the NSA and the Combat Capabilities Development Command/Army Research Laboratory/ARO. It focuses on areas of strategic importance to U.S. national security policy. It seeks to increase the Department's intellectual capital in computing systems and improve its ability to address future challenges and build bridges between the Department and the computing research community. ACI brings together universities, research institutions, companies, and individual scholars and supports multidisciplinary and cross-institutional projects addressing specific topic areas determined by the Department of Defense. The ACI aims to promote research in specific areas of computing systems and to promote a candid and constructive relationship between DoD and the computing research community.

Awards: Various

Proposal Deadline: May 31, 2019

Contact Information: Kevin J Bassler kevin.j.bassler.civ@mail.mil

Grant Program: Bioelectronics for Tissue Regeneration (BETR)

Agency: Department of Defense DARPA - Biological Technologies Office HR001119S0027

Website:

<https://www.fbo.gov/index?s=opportunity&mode=form&id=90876d7b71e42be9ba9a2f475bbc782d&tab=core&cvview=1>

Brief Description: DARPA believes that recent advances in biosensors, actuators, and artificial intelligence could be extended and integrated to dramatically improve tissue regeneration. To achieve this, the new Bioelectronics for Tissue Regeneration (BETR) program asks researchers to develop bioelectronics that closely track the progress of the wound and then stimulate healing processes in real time to optimize tissue repair and regeneration.

Awards: Various

Proposal Deadline: April 18, 2019

Contact Information: BAA Coordinator BETR@darpa.mil

Grant Program: Army Research Laboratory Broad Agency Announcement for Basic and Applied Scientific Research

Agency: Department of Defense Dept of the Army -- Materiel Command W911NF-17-S-0003

Also Army Research Office Broad Agency Announcement for Basic and Applied Scientific Research W911NF-17-S-0002

Website:

<https://www.fbo.gov/index?s=opportunity&mode=form&tab=core&id=1ff4626a4e06143fe31e4b837e890c6f>

Brief Description: This Broad Agency Announcement (BAA) sets forth research areas of interest of the Army Research Laboratory (ARL). This BAA is issued under FAR 6.102(d)(2), which provides for the competitive selection of basic and applied research proposals, and 10 U.S.C. 2358, 10 U.S.C. 2371, and 10 U.S.C. 2371b, which provide the authorities for issuing awards under this announcement for basic and applied research. The definitions of basic and applied research may be found at 32 CFR 22.105. Proposals submitted in response to this BAA and selected for award are considered to be the result of full and open competition and in full compliance with the provision of Public Law 98-369, "The Competition in Contracting Act of 1984" and subsequent amendments. Eligible applicants under this BAA include institutions of higher education, nonprofit organizations, state and local governments, foreign organizations, foreign public entities, and for-profit organizations (i. large and small businesses) for scientific research in mechanical sciences, mathematical sciences, electronics, computing science, physics, chemistry, life sciences, materials science, network science, and environmental sciences.

Awards: Various.

Proposal Deadline: This BAA is a continuously open announcement valid throughout the period from the date of issuance through March 31, 2022, unless announced otherwise.

Contact Information: ANDREW L. FISKE PROCUREMENT ANALYST Phone: (919) 549-4338

Grant Program: 2019 ERDC Broad Agency Announcement

Agency: Department of Defense; Engineer Research and Development Center W912HZ-19-BAA-01

Website: <https://www.erd.usace.army.mil/>

Brief Description: The U.S. Army Engineer Research and Development Center (ERDC) has issued a Broad Agency Announcement (BAA) for various research and development topic areas. The ERDC consists of the Coastal and Hydraulics Lab (CHL), the Geotechnical and Structures Lab (GSL), the USACE Reachback Operations Center (UROC), the Environmental Lab (EL) and the Information

Technology Lab (ITL) in Vicksburg, Mississippi; the Cold Regions Research and Engineering Lab (CRREL) in Hanover, New Hampshire; the Construction Engineering Research Lab (CERL) in Champaign, Illinois; and the Geospatial Research Laboratory (GRL) in Alexandria, Virginia. The ERDC is responsible for conducting research in the broad fields of hydraulics, dredging, coastal engineering, instrumentation, oceanography, remote sensing, geotechnical engineering, earthquake engineering, soil effects, vehicle mobility, self-contained munitions, military engineering, geophysics, pavements, protective structures, aquatic plants, water quality, dredged material, treatment of hazardous waste, wetlands, physical/mechanical/chemical properties of snow and other frozen precipitation, infrastructure and environmental issues for installations, computer science, telecommunications management, energy, facilities maintenance, materials and structures, engineering processes, environmental processes, land and heritage conservation, and ecological processes.

Awards: Various

Proposal Deadline: All proposals initially submitted in response to this BAA will be considered preproposals. Should ERDC evaluation indicate a need for a full proposal, one will be requested from the offeror. Until January 31, 2020

Contact Information: For questions regarding proposals to CHL, GSL, EL, ITL, CRREL, and UROC submit your question to the following e-mail address: ERDC-BAA@usace.army.mil. You may also contact Reginald Bryant at 601-634-7166.

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

EPA

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: Solar Energy Technologies Office Fiscal Year 2019 Funding Program

Agency: Department of Energy DE-FOA-0002064

Website: <https://eere-exchange.energy.gov/Default.aspx#FoaId45eda43a-e826-4481-ae7a-cc6e8ed4fdae>

Brief Description: The Solar Energy Technologies Office (SETO) works across the solar energy technology spectrum with the goal of improving the affordability, reliability, and performance of solar technologies on the grid. Ensuring that more Americans can benefit from the declining costs of solar is one of SETO's primary goals, which support early-stage research, development, and demonstration of solar technologies. Achieving SETO's priorities across the solar energy technology landscape requires sustained, multifaceted innovation. With this Funding Opportunity Announcement (FOA), the office intends to fund high-impact, early-stage research in the following areas: Topic Area 1: Photovoltaics Research and Development Topic Area 2: Concentrating Solar-Thermal Power Research and Development Topic Area 3: Balance of Systems Soft Costs Reduction Topic Area 4: Innovations in Manufacturing: Hardware Incubator Topic Area 5: Advanced Solar Systems Integration Technologies.

Use the links below to register for the webinars:

[SETO FY 2019 FUNDING OPPORTUNITY - OVERVIEW](#)

April 2, 2019 2:00 pm EST

[Topic Area 1- PHOTOVOLTAICS](#)

April 3, 2019 3:00 pm EST

[Topic Area 2 - CONCENTRATING SOLAR POWER](#)

April 4, 2019 2:00 pm EST

[Topic Area 3 - SOFT COSTS](#)

April 5, 2019 2:00pm EST

[Topic Area 4 - INNOVATIONS IN MANUFACTURING](#)

April 4, 2019 4:00 pm EST

[Topic Area 5 - SYSTEMS INTEGRATION](#)

April 3, 2019 2:00 pm EST

Awards: Various; Available Funding: \$130,000,000

Letter of Intent Deadline: 5/7/2019 5:00 PM ET

Concept Paper Submission Deadline: 5/14/2019 5:00 PM ET

Full Application Submission Deadline: 7/25/2019 5:00 PM ET

Contact: Elizabeth A. Parrish SETO.foa@ee.doe.gov

Grant Program: 2019 Wind Energy Technologies Office Funding Opportunity Announcement

Agency: Department of Energy DE-FOA-0002071

Website: <https://eere-exchange.energy.gov/#FoaIdb3bff091-3531-4356-b234-d079118ccce3>

Brief Description: The Office of Energy Efficiency and Renewable Energy (EERE) is issuing, on behalf of the Wind Energy Technologies Office (WETO), a Funding Opportunity Announcement (FOA) titled "Fiscal Year (FY) 2019 Wind Energy Technologies Office Funding Opportunity Announcement."

This FOA consists of four Areas of Interest and will provide \$28.1M in federal funding for innovative wind energy technologies research and development including land-based, distributed, and offshore applications.

1) *Wind Innovations for Rural Economic Development (WIRED)*

Subtopic 1a: Fully integrated distributed wind research and development (R&D) innovations to enhance resilience and reliability

Subtopic 1b: Balance of system cost reduction through standardization

2) *Utilizing and Upgrading National-Level Facilities for Offshore Wind R&D*

Subtopic 2a: R&D utilizing existing national-level offshore wind testing facilities
Subtopic 2b: R&D requiring upgrades to existing national offshore wind testing facilities
3) *Project Development for Offshore Wind Technology Demonstrations*
4) *Tall Towers for U.S. Wind Power*

Awards: Various; Available Funding: \$130,000,000

Concept Paper Submission Deadline: 4/29/2019 5:00 PM ET

Full Application Submission Deadline: 6/17/2019 5:00 PM ET

Contact: EERE-Exchangesupport@hq.doe.gov

For questions related to the EERE Exchange website.

- FY19WETOFOA@ee.doe.gov

For questions related to this specific Funding Opportunity Announcement.

Grant Program: Data Science for Discovery in Chemical and Materials Sciences

Agency: Department of Energy Office of Science DE-FOA-0002082

Website: <https://science.energy.gov/funding-opportunities/digital-datamanagement/>

Brief Description: The DOE SC program in Basic Energy Sciences (BES) announces its interest in receiving new applications in Data Science for Knowledge Discovery for Chemical and Materials Research with the aim of advancing the use of modern data science approaches (artificial intelligence, machine learning, graph theory, uncertainty quantification, etc.) to accelerate discovery in chemical and materials sciences. This funding opportunity is the first in this topical area sponsored by BES. The program will support Single Investigator/Small Group efforts (up to \$500,000 per year) for research with a focus on applying data science approaches and tools for experimental, theoretical/computational, or synergistic experimental/theoretical/computational research in areas supported by BES. Although the research may involve the development of new data science approaches, the focus of the effort should be on advancing understanding of fundamental properties and processes in chemical and materials systems.

Awards: Ceiling: \$500,000 per year; **Floor:** \$150,000 per year. It is anticipated that up to \$20,000,000 (approximately \$6,667,000 annually for up to 3-years) will be available under this FOA, contingent on satisfactory peer review and the availability of appropriated funds. Up to 15 awards are anticipated for Single Investigator/Small Group awards under this FOA.

Submission Deadline: A pre-application is required. PRE-APPLICATION DUE DATE March 8, 2019 at 5:00 PM Eastern Time ENCOURAGE/DISCOURAGE DATE April, 5, 2019

Contact: Dr. Raul Miranda, Basic Energy Sciences, Chemical Sciences, Geosciences, and Biosciences Division PHONE: (301)-903-8014 Raul.Miranda@science.doe.gov

Grant Program: DE-FOA-0002021: Notice of Intent to Issue Funding Opportunity Announcement No. DE-FOA-0002022

Agency: Department of Energy DE-FOA-0002021

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

Brief Description: The Office of Energy Efficiency and Renewable Energy (EERE) intends to issue, on behalf of the Fuel Cell Technologies Office (FCTO), Funding Opportunity Announcement (FOA) DE-FOA-0002022 entitled “Fiscal Year 2019 H2@Scale Funding Opportunity Announcement.” Hydrogen is one part of DOE’s all-of-the-above energy portfolio, and can offer options for affordable and secure energy for transportation, as well as for stationary and industrial applications. The United States produces over 10 million metric tons of hydrogen per year, used primarily for petroleum refining and fertilizer production, but there are a number of opportunities to increase hydrogen generation and utilization across the country. “H2@Scale” is an initiative to enable affordable and reliable largescale hydrogen generation, transport, storage, and utilization in the United States across sectors. For example, electrolyzers can produce hydrogen by splitting water when power generation exceeds demand. This can reduce or prevent

curtailment of renewables, optimize baseload (e.g., nuclear power) assets, and enable grid stability and resiliency, while also producing hydrogen as a fuel or feedstock for end users. In addition, hydrogen produced from existing baseload assets can be stored, distributed, and used as a fuel for transportation, stationary power, process or building heat, and industrial sectors (e.g. steel manufacturing), creating an additional revenue stream for those assets. FCTO focuses on research, development, and innovation to advance hydrogen and fuel cells for transportation and diverse applications enabling energy security, resiliency, and a strong domestic economy in emerging technologies. This notice of intent (NOI) is issued so that interested parties are aware of the EERE's intention to issue this FOA in the near term. All of the information contained in this NOI is subject to change. EERE will not respond to questions concerning this NOI. Once the FOA has been released, EERE will provide an avenue for potential applicants to submit questions. EERE plans to issue the FOA in January/February of 2019 via the EERE Exchange website <https://eere-exchange.energy.gov/>. If applicants wish to receive official notifications and information from EERE regarding this FOA, they should register in EERE Exchange. When the FOA is released, applications will be accepted only through EERE Exchange.

Awards: TBD

Submission Deadline: TBD

Contact: EERE-ExchangeSupport@hq.doe.gov

Grant Program: FY 2019 Bioenergy Technologies Office (BETO) Multi-topic Request for Information (RFI)

Agency: Department of Energy DE-FOA-0002020

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

Brief Description: The U.S. Department of Energy (DOE) Office of Energy Efficiency and Renewable Energy (EERE) Bioenergy Technologies Office (BETO) is requesting information on research opportunities related to outdoor algae research, biomass characteristics and feedstock performance, and renewable energy from urban and suburban wastes to help inform its research priorities and funding strategies. BETO seeks information to help inform its research priorities, as part of its annual planning process. The purpose of this RFI is to solicit feedback from industry, academia, research laboratories, government agencies, and other stakeholders to help ensure research areas are relevant, timely, appropriate for federal government funding, and aligned with Administration priorities. This is solely a request for information and not a Funding Opportunity Announcement (FOA). No funding applications are being accepted in response to this RFI. Specifically, BETO is seeking information related to the following three topic areas: 1) Outdoor Algae Research; 2) Biomass Characteristics and Feedstock Performance; and 3) Renewable Energy from Urban and Suburban Wastes. Please see the full Request for Information (RFI) DE-FOA-0002020 at <https://eere-exchange.energy.gov/>.

Awards: TBD

Submission Deadline: TBD

Contact: EERE_Bioenergy@ee.doe.gov

Submit RFI Responses to this Inbox

- EEREExchangeSupport@hq.doe.gov

For EERE Exchange questions:

NASA

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?sollId={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-atechnological-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

Grant Program: ROSES 2018: Planetary Protection Research**Agency:** NASA NNH18ZDA001N-PPR**Website:** <https://nspires.nasaprs.com/external/solicitations/summary.do?solId=%7B3C61CFE1-591A-1683-ED8A-047843D6F167%7D&path=open&method=init>

Brief Description: Planetary Protection is the practice of protecting solar system bodies from contamination by Earth life and protecting Earth from possible life forms that may be returned from other solar system bodies. Numerous areas of research in astrobiology/exobiology are improving our understanding of the potential for survival of Earth microbes in extraterrestrial environments, relevant to preventing contamination of other bodies by Earth organisms carried on spacecraft. As we continue to bring extraterrestrial samples back to the Earth system for advanced research and analysis, there is an urgent need to understand and prevent biological contamination of the terrestrial environment. Mission-enabling and capability-driven research is required to improve NASA's understanding of the potential for both forward and backward contamination; and improve methods and technologies for accurate, efficient, and effective minimization of biological contamination for outbound spacecraft and return samples.

Awards: Various**Notice of Intent:** Not Required**Proposal Deadline:** PPR18 NOIs Due Apr 12, 2019

PPR18 Proposals Due May 10, 2019

Contact: Becky McCauley Rench Planetary Science Division Science Mission Directorate NASA Headquarters Washington, DC 20546-0001 Telephone: (202) 358- 0530 Email: HQ-PPR@mail.nasa.gov

National Endowment of Humanities**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 provides awards up to \$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

Environment Research and Education Foundation

Grant Program: Research on Research on Sustainable Solid Waste Management and Recycling

Agency: Environment Research and Education Foundation

Website: <https://erefdn.org/research-grants-projects/how-to-apply-for-grant/>

Brief Description: The sustainability movement has reached the business models of nearly every industry in the United States, and many companies, municipalities and states have set aggressive sustainability goals that include how waste streams are being managed. The EREF Board of Directors has set an initiative to ensure research funded reflects EREF's long-term strategic plan to address all areas of integrated solid waste management, with a strong focus towards research that increased sustainable solid waste management practices.

Pre-proposal topics must relate to sustainable solid waste management practices and pertain to the following topic areas:

1. Waste minimization
2. Recycling
3. Waste conversion to energy, biofuels, chemicals or other useful products. This includes, but is not limited to, the following technologies:
 - o Waste-to-energy
 - o Anaerobic digestion
 - o Composting
 - o Other thermal or biological conversion technologies
4. Strategies to promote diversion to higher and better uses (e.g. organics diversion, market analysis, optimized material management, logistics, etc.)
5. Landfilling

Upon submission, pre-proposals will be examined by a selection committee and successful pre-proposals will be invited to submit a full proposal for consideration. Full proposals will then be subjected to EREF's review process, as described later in this document.

Proposal Deadline: EREF has two deadlines per year for pre-proposals: December 1 and May 1

Contact: If interested, please send an email to Atam Dhawan (dhawan@njit.edu).

Brain Research Foundation

Grant Program: 2020 Scientific Innovation Award

Agency: Brain Research Foundation

Website: <https://www.thebrf.org/for-researchers/scientific-innovations-award-2/>

Brief Description: Brain Research Foundation (BRF) Annual Scientific Innovations Award supports innovative discovery science in both basic and clinical neuroscience. This funding mechanism is designed to support creative, cutting edge research in well-established research laboratories, under the direction of established investigators.

This funding opportunity is for projects that may be too innovative and speculative for traditional funding sources but still have a high likelihood of producing important findings in a very short time frame. It is expected that investigations supported by these grants will yield high impact findings and result in major grant applications and significant publications in high impact journals.

To be eligible, the nominee must be a **full-time associate professor/full professor** working in the area of neuroscience and brain function in health and disease. **Current major NIH or other peer-reviewed funding is preferred but evidence of such funding in the past three years is essential.**

Download a PDF version of the [2020 Guidelines](#).

For additional information, please visit our [Frequently Asked Questions](#) page.

Awards: Each total award is limited to \$150,000 (direct costs) for a two year grant period. Exact dates will be provided by the BRF upon application approval. The first grant payment of \$75,000 will be made

upon completion of the SIA Acceptance Form (January 2020). The final payment of \$75,000 will be made contingent upon receipt of a Preliminary Progress and Financial Report (January 2021).




Proposal Deadline: The deadline to submit the nominated Letter of Intent is Friday, June 25, 2019.

Streamlyne Question of the Week

Question: How do I see the *Action List* of pending items in workflow?

Answer: Streamlyne Research will route you to the Action List. The Action List is the jumping-off page for all Streamlyne functionality. The Action List occupies the center of the page. Each line on the Action List represents a pending workflow item, requiring some sort of action from you. (Page 3 of the New User Manual posted on the Research website <http://www.njit.edu/research/sites/research/files/StreamlyneNewUserManualCommonElements.pdf>).

The Menu Bar remains fixed to your primary Streamlyne Research tab regardless of where you are in the application. This is your primary means of navigation in the application.

- Click the List button  to return to the Portal Page and Action List at any point.
- When you complete an action, the item is moved to the Outbox. Click the Outbox button  to review all items on which you have taken action.
- Click the Magnifying Glass  to access the Document Search function.

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.
