

NJIT Research Newsletter

Issue: ORN-2020-11

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 <https://research.njit.edu/funding-opportunities>.

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Special Announcements

NJIT Research Continuity Plan Update

Due to rapidly growing COVID-19 Pandemic, Governor Murphy has issued stay-at-home orders effective 9.00 PM, March 21, 2020. All non-essential research operations in NJIT research laboratories and facilities are halted temporarily until further notice for the safety of the community and to be in compliance with the state order and associated travel restrictions. Limited continuation of laboratory research is only permitted for essential research operations but must follow the strongest safety protocols including the social distancing while working in the lab. Essential research operations that are critical to maintenance and monitoring of research facility, animal care (with approved contingency plan) or exceptional experiments for which termination will lead to the irreversible loss of data must be approved at the institutional level (<https://research.njit.edu/njit-research-continuity-plan>)

Students and post-docs must not be asked or expected to travel to campus for any non-essential research activity for their safety and to be in compliance with state and institutional regulations with the stay at home order.

As requested earlier, please follow the checklist (posted on the research website <https://research.njit.edu/njit-research-continuity-plan>) to shut-down your research laboratory operations. If not already done, all required shutting down operations for non-essential research must be completed by the close of business on March 23, 2020.

All research activities that can be pursued remotely should be continued.

We hope that this period of unprecedented disruption will be over shortly. Until then please take every precaution to be safe and healthy.

Research Administration and Compliance

The Office of Research will continue to provide assistance on proposal submissions, pre-award and post-award grant management, research compliance and operational protocols to the best of our abilities. It is expected that Streamlyne will remain operational for proposal submissions and the following email addresses will be monitored regularly:

- Pre-Award inquiries: srard@njit.edu
- Post-Award financial management: gca@njit.edu
- Institutional Review Board: irb@njit.edu
- Institutional Biosafety Committee: ibc@njit.edu

All other research-related inquiries during an emergency should be submitted via <https://research.njit.edu/inquiry>

Updates and university wide resources in response to COVID-19 outbreaks are posted on the NJIT website <https://www.njit.edu/coronavirus>

If you have any questions related to research, please contact the Office of Research.

Institutional Review Board (IRB) for Approval of Human Subjects in Research

The NJIT institutional review board (IRB), charged with reviewing and approving all requests for research projects involving human subjects, remains fully functional at this time with our next planned meeting set for April 14, 2020. Researchers are welcome to continue submitting protocols for review. The move to online instruction may present itself with interesting and novel research projects related to education and educational practice. While the vast majority of such projects will be deemed to be exempt by the IRB from further review, it is still necessary that any project involving human subjects be submitted to the IRB for review before the research activity takes place. Any questions concerning research involving human subjects should be sent to irb@njit.edu. More information can be found at <https://research.njit.edu/compliance/review-board>.

Proposal Submission and Streamlyne Information

Internal Timeline for Successful and Timely Proposal Submission

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

The NJIT Proposal Submission Guidelines and Policy posted on the website <https://research.njit.edu/research-policies> provides the expected institutional timeline for proposal

submission. These guidelines are especially important as the current situation, both at NJIT and our sponsors, may result in unforeseen complications.

- **1 month (or earlier) before the due date:** PIs should work with their college director or project manager to initiate the proposal submission process in Streamlyne, which should include the proposal identification number (NSF, NIH) and/or the RFP document. This will allow:
 - preliminary review of needs and sponsor requirements (meeting recommended)
 - set up the timeline in motion and internal checklist/deadlines
 - collaborator outreach and intake requirements (where applicable)
 - set up the budget and Streamlyne document development process
- **1 month - 2 weeks before due date:** The budget should be finalized and the approval process should be initiated. This includes academic approvals, conflict of interest forms, the detailed budget and justification, proposal title, and preliminary specific aims (NIH), proposal summary (NSF), or contract scope of work (SOW). College directors and program managers will provide project-specific checklists to aid PIs in this process.
- **2 weeks - 1 week before the due date:** submit all required internal attachments. College directors or project managers will assist in this process.
- **72 hours before the submission deadline:** We are suggesting that all final proposals be released for submission 72 hours before the deadline so that there is time to account for server delays, system outages, and other technical issues that may be more difficult to troubleshoot in a completely distributed work environment, both at NJIT and our sponsors.

Proposal Submission and Pre-Award Management Contacts

Questions about proposal submission should be directed to their college director or project manager. PIs should follow up with their support person in a timely manner so planning can be managed with respect to proposal complexity, scope of support, special needs, and volume related to multiple submissions with the same due date. The following are the respective college contacts:

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

NCE: Deidra Slough, Grant Management Specialist, (973)-596-3428; deidra.l.slough@njit.edu

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

CSTR: Felicia Margolies, Project Manager, (973)-596-5377 felicia.h.margolies@njit.edu

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

HCoAD and MTSM: Interim POC: Justin Samolewicz, Director (Pre Award); (973)-596-3145;

justin.m.samolewicz@njit.edu; **Iris Pantoja**, Project Manager; 973-596-4483; irp3@njit.edu (on maternity leave)

NJII and T&BD: Bobby J. Vadasserril; (973)-596-2941; bobby.j.vadasserril@njit.edu

Follow up messages or needs for escalation should be directed to:

- **Justin Samolewicz**, Director of Pre-Award Services, (973) 596-3145; justin.m.samolewicz@njit.edu
- **Eric Hetherington**, Executive Director, Sponsored Research Programs Administration, at (973) 596-3631; eric.d.hetherington@njit.edu as needed.

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

- **Steamlyne_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.

- **Steamlyne_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.

Post Award Management Contacts

The Office of Research continues to provide assistance with post-award financial management with all staff working remotely. PIs or administrative staff with questions regarding the budget transfers, PAFs, questions concerning expenses, or other financial matters related to their grants should contact the appropriate person for their department listed below.

NCE, ITS Resource Center, PTAC:

Hattie Yeung, (973) 596-5734; hiumui.yeung@njit.edu

CSLA, CSTR, YWCC, HoAD, MTSM:

Kedeisha Carty, (973) 642-4295; kedeisha.s.carty@njit.edu

NJTPA, EOP, Pre-College, College Bound, Gear UP, McNair Center:

Brenda Garcia, (973) 596-2945; brenda.garcia@njit.edu

NJII and T&BD:

Bobby J. Vadasserril; (973)-596-2941; bobby.j.vadasserril@njit.edu

Follow up messages or needs for escalation should be directed to:

- **Mariel Diaz**, Director of Post-Award Management, (973) 596-2962; mariel.diaz@njit.edu
- **Eric Hetherington**, Executive Director, Sponsored Research Programs Administration, at (973) 596-3631; eric.d.hetherington@njit.edu as needed.

Coronavirus (COVID-19) Information

Guidance on Coronavirus (COVID-19)

- [US Government Response to Coronavirus, COVID-19](#)
- [Centers for Disease Control and Prevention \(CDC\) guidance](#)
- [Department of State \(DOS\) travel information](#)
- [NSF Guidance for Major Facilities and Contracts Regarding COVID-19](#)

NSF Community Guidance

- [Impact on Existing Deadline Dates](#)
- [Frequently Asked Questions \(FAQs\) About the Coronavirus Disease 2019 \(COVID-19\) for NSF Proposers and Awardees - March 16, 2020](#)
- [Frequently Asked Questions \(FAQs\) About the Coronavirus Disease 2019 \(COVID-19\) for NSF Panelists - March 17, 2020](#)

RAPID Research on Coronavirus (COVID-19)

- [Dear Colleague Letter on the Coronavirus Disease 2019 \(COVID-19\)](#)
- [Dear Colleague Letter: Provisioning Advanced Cyberinfrastructure to Further Research on the Coronavirus Disease 2019 \(COVID-19\)](#)
- [Frequently Asked Questions \(FAQs\) regarding the NSF Dear Colleague Letter on the Coronavirus Disease 2019 \(COVID-19\) \(NSF 20-052\) - March 17, 2020](#)
- [NSF Supporting Research to Address Coronavirus Disease blog](#)

Grant Opportunity Alerts

Keywords and Areas Included in the Grant Opportunity Alert Section Below

NSF: Program: PFE: Research Initiation in Engineering Formation (PFE: RIEF); Spectrum Innovation Initiative: National Center for Wireless Spectrum Research (SII-Center); Multimodal Sensor Systems for Precision Health Enabled by Data Harnessing, Artificial Intelligence, and Learning (SenSE); Quantum Algorithm Challenge; NSF Convergence Accelerator Pilot Phase II; ADVANCE: Organizational Change for Gender Equity in STEM Academic Professions (ADVANCE); Gen-4 Engineering Research Centers (ERC); Future Manufacturing (FM)

NIH: Institutional Research Training Grant (Parent T32); NICHD Resource Program Grants in Bioinformatics (P41); Maximizing Investigators' Research Award (MIRA) for Early Stage Investigators (R35); High-End Instrumentation (HEI) Grant Program (S10); Shared Instrumentation Grant (SIG) Program (S10)

Department of Defense/US Army/DARPA/ONR: DoD Spinal Cord Injury, Investigator- Initiated Research Award; Air Force Fiscal Year 2021 Young Investigator Research Program (YIP); 2020 Broad Agency Announcement; Microsystems Technology Office (MTO); Atmosphere as a Sensor (AtmoSense); FY 2021 Multidisciplinary Research Program of the University Research Initiative (MURI); FY 2021 Defense University Research Instrumentation Program (DURIP); Quantum Information Sciences; NRL Long Range BAA for Basic and Applied Research; C4ISR, Information Operations, Cyberspace Operations and Information Technology System Research, Air Superiority Technology Broad Agency Announcement; DSO Broad Agency Announcement

Department of Transportation: FY 2020 National Infrastructure Investments

Department of Agriculture: Scientific and Cooperative Research Program; Biotechnology Risk Assessment Grants Program; Agriculture and Food Research Initiative - Foundational and Applied Science; REAP-Renewable Energy Systems and Energy Efficiency Improvements

Department of Labor: Apprenticeships: Closing the Skills Gap

EPA: Source Reduction Assistance Grant Program; National Environmental Education and Training Program; Community-Scale Air Toxics Ambient Monitoring

Department of Energy: Measurement Innovations for Fusion Energy and Plasmas; Opportunities in Frontier Plasma Science; Scientific Discovery through Advanced Computing: Scientific Machine Learning and Artificial Intelligence for Fusion Energy Sciences

NASA: ROSES 2020: Heliophysics Supporting Research; Astrophysics Data Analysis; HELIOPHYSICS - Early Career Investigator Program; Astrophysics Research and Analysis

National Endowment of Humanities: Research and Development; Advanced Topics in the Digital Humanities; Fellowships

Michael J Fox Foundation: Parkinson's Research

Recent Research Grant and Contract Awards

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

PI: Boris Khusid (PI)

Department: Chemical Material Engineering

Grant/Contract Project Title: Advanced Colloids Experiment-Temperature and Gradient Control

Funding Agency: NASA

Duration: 09/01/19-08/31/21

PI: Pan Xu (PI)

Department: Computer Science

Grant/Contract Project Title: CRII: RI: Fairness and Profitability in Online Matching Markets

Funding Agency: NSF

Duration: 09/01/20-08/31/22

PI: Sergei Adamovich (PI)

Department: Center for Rehabilitation Robotics

Grant/Contract Project Title: Remote Evaluation of Upper Extremity Motor Control

Funding Agency: NIH

Duration: 03/13/20-03/12/21

PI: Sanchoy Das (PI) and Michael Ehrlich (Co-PI)

Department: Mechanical and Industrial Engineering; MT School of Management

Grant/Contract Project Title: SMBC Hospital Project Solution SOW Phase II

Funding Agency: RWJ Saint Barnabas Health Inc.

Duration: 01/15/19-05/31/20

In the News...

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

\$13 Billion in New Research Budget Request in COVID-19 National Rescue Package: As the Senate and White House worked toward a national rescue package worth up to a reported \$1.4 trillion, organizations representing major research institutions urged Congress to increase research spending at federal science agencies by some 15 percent, or \$13 billion, to prevent students and researchers from going broke, to restart closed laboratories once the pandemic eases, and to cover other unanticipated costs to the research enterprise, [Science magazine reports](#). They're likely to get at least some of that. Earlier this week, the White House included new money for a number of science agencies, including the National Institutes of Health, Energy Department's Office of Science, and the National Science Foundation, [in an overall request](#) for \$45.8 billion "to address ongoing preparedness and response efforts." In their appeal to Congress, the university groups suggest that the massive pandemic-related spending bill now being negotiated offers an opportunity to "allow our members to continue to lead in the battle against COVID-19 [coronavirus disease 2019] and ensure that our other research on behalf of the American people will not suffer during these unprecedented times," according to Science.

Research advocates are also hoping the federal stimulus package now being assembled by Congress will go beyond helping academic researchers fight the pandemic. They envision something like the 2009 package aimed at helping the U.S. economy recover from the global financial crisis, which provides tens of billions for “shovel-ready” research projects across many fields. More information is posted at the website https://www.sciencemag.org/news/2020/03/universities-urge-us-leaders-boost-science-budgets-15-ease-rules-cope-pandemic?utm_campaign=news_weekly_2020-03-20&et rid=17773746&et_cid=3253267

PANDEMIC Data Challenge: The White House is joining several several institutions in a call to action to AI experts. They're seeking "new text and data mining techniques that can help the science community answer high-priority scientific questions related to COVID-19. These questions include What do we know about COVID-19 risk factors? What do we know about virus genetics, origin, and evolution? What do we know about non-pharmaceutical interventions? What do we know about vaccines and therapeutics? The [COVID-19 Open Research Dataset](#) contains all COVID-19 and coronavirus-related research from PubMed's PMC open access corpus using this query (COVID-19 and coronavirus research); additional COVID-19 research articles from a corpus maintained by the WHO; and bioRxiv and medRxiv pre-prints using the same query as PMC (COVID-19 and coronavirus research). More information about the challenge is posted at the website <https://www.kaggle.com/allen-institute-for-ai/CORD-19-research-challenge>

New Gen-4 ERCs Expected: The National Science Foundation anticipates spending up to \$130 million for up to five new Engineering Research Centers over the first five years (they usually last 10 years). Issuing its second solicitation under Generation 4 of the venerable program, NSF says: "The Gen-4 ERCs will continue to focus on advancing engineered systems through inclusive cross-disciplinary and cross-sector partnerships, while placing emphasis on basic research with high-risk/high-payoff ideas that will lead to societal impact through convergent approaches, engaging stakeholder communities, and strengthening team formation." Awards are expected in the summer of 2022. The RFP brief is included in the Grant Opportunity section below.

'QUANTUM ALGORITHM CHALLENGE': That's the heading atop an NSF [Dear Colleague letter](#) inviting 3-page Research Concept Outlines (RCOs) "describing research ideas that may lead to EAGER (Early-Concept Grants for Exploratory Research) (EAGER)4 or Research Advanced by Interdisciplinary Science and Engineering (RAISE)5 proposals focused on: QSA: quantum computing simulation algorithms for quantum many-body systems; QIA: quantum information algorithms, which aims to expand the set of known quantum-computing algorithms with application in computer science, mathematics, and statistics; and QCH: quantum computing horizons which explores potentially transformative new paradigms for quantum computation. More information is posted on the website https://www.nsf.gov/pubs/2020/nsf20056/nsf20056.jsp?WT.mc_id=USNSF_25&WT.mc_ev=click And also included in the Grant Opportunity section below.

Webinar and Events

Event: NSF Distinguished Lecture Series in Mathematical and Physical Sciences for 2019-20

Sponsor: NSF

When: Various; Please see below.

Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=299152&org=NSF

Brief Description: These lectures will be held at the National Science Foundation, 2415 Eisenhower Ave., Alexandria, VA 22314. Advance sign-up requests are required for preparation of visitor passes by emailing the contact below. Guidelines for visiting NSF are at <https://www.nsf.gov/about/visit/>
March 23, 2020 2:00 PM to March 23, 2020 3:00 PM
May 4, 2020 2:00 PM to May 4, 2020 3:00 PM
June 11, 2020 2:00 PM to June 11, 2020 3:00 PM
To Join the Webinar: Please register at the above URL.

Event: Meeting of the STEM Education Advisory Panel

Sponsor: NSF

When: April 15, 2020 12:00 PM – 2.00 PM

Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=300205&org=NSF

Brief Description: Members of the public must contact nowens@nsf.gov to listen in to the meeting. Name, title, and organization are required.

10:00 – 10:10 am Introductions/Roll Call

10:10 – 11:30 Update on FC-STEM Activities

11:30 – 11:45 Committee and Subcommittee Deliverables

11:45 – 11:55 Membership Terms, Next Meeting

11:55 – 12:00 pm Closing Remarks

To Join the Webinar: Contact nowens@nsf.gov to listen in to the meeting

Grant Opportunities

National Science Foundation

Grant Program: PFE: Research Initiation in Engineering Formation (PFE: RIEF)

Agency: National Science Foundation NSF 20-558

RFP Website: <https://www.nsf.gov/pubs/2020/nsf20558/nsf20558.htm>

Brief Description: The PFE: Research Initiation in Engineering Formation (PFE: RIEF) program has two goals: 1) Support research in the Professional Formation of Engineers (PFE), and 2) Increase the community of researchers conducting PFE research. PIs are expected to have little or no experience conducting social science or education research. PFE: RIEF is not intended for established researchers in engineering education or other social science fields to initiate new projects. Those researchers should consider the Research in the Formation of Engineers program (https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505681).

The NSF Engineering (ENG) Directorate has launched a multi-year initiative, the Professional Formation of Engineers, to create and support an innovative and inclusive engineering profession for the 21st Century. Professional Formation of Engineers (PFE) refers to the formal and informal education and value systems by which people become engineers. It also includes the ethical responsibility of practicing engineers to sustain and grow the profession. The engineering profession must be responsive to national priorities, grand challenges, and dynamic workforce needs; it must be equally open and accessible to all. Engineering faculty possess both deep technical expertise in their engineering discipline and the primary responsibility for the process of professional formation of future engineers. As such, engineering faculty are in a unique position to help address critical challenges in engineering formation. The Professional Formation of Engineers: Research Initiation in Engineering Formation (PFE: RIEF) program enables

engineering faculty who are renowned for teaching, mentoring, or leading educational reform efforts on their campus to develop expertise in conducting engineering education research.

Awards: Standard grants; Anticipated Funding Amount: \$3,000,000

Letters of Intent: Not Required

Proposal Submission Deadline: November 10, 2020

Contacts: Edward J. Berger, telephone: (703) 292-7708, email: eberger@nsf.gov

Grant Program: Spectrum Innovation Initiative: National Center for Wireless Spectrum Research (SII-Center)

Agency: National Science Foundation NSF 20-557

RFP Website: <https://www.nsf.gov/pubs/2020/nsf20557/nsf20557.htm>

Brief Description: The focus of a spectrum research SII-Center must go beyond 5G, IoT, and other existing or forthcoming systems and technologies and chart out a trajectory to ensure United States leadership in future wireless technologies, systems, and applications in science and engineering through the efficient use and sharing of the radio spectrum. The SII-Center should also seek to foster scientific and technical collaboration and grow the spectrum workforce. The establishment of an SII-Center will have a transformational impact on wireless spectrum research by serving as a connecting point for the biggest and most challenging questions in spectrum management that the nation is facing.

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

Letters of Intent: Required

Proposal Submission Deadline:

SII-Center Planning Grant Proposals*

- Full Proposal Deadline (due by 5 p.m. submitter's local time):
June 12, 2020

* Submission of an SII-Center Planning Grant Proposal is not required to submit an SII-Center Proposal

SII-Center Proposals

- Letter of Intent (required, due by 5 p.m. submitter's local time):
February 01, 2021
- Full Proposal Submission Window
March 01, 2021 - April 01, 2021

Contacts: Bevin A. Zauderer, MPS/AST, telephone: (703) 292-2428, email: SII-Center@nsf.gov

- Mohammod Ali, ENG/ECCS, telephone: (703) 292-4632, email: SII-Center@nsf.gov
 - Alexander Sprintson, CISE/CNS, telephone: (703) 292-8950, email: SII-Center@nsf.gov
-

Grant Program: Multimodal Sensor Systems for Precision Health Enabled by Data Harnessing, Artificial Intelligence, and Learning (SenSE)

Agency: National Science Foundation NSF 20-556

RFP Website: <https://www.nsf.gov/pubs/2020/nsf20556/nsf20556.htm>

Brief Description: The National Science Foundation (NSF) through its Divisions of Electrical, Communications and Cyber Systems (ECCS); Chemical, Bioengineering, Environmental and Transport Systems (CBET); Civil, Mechanical and Manufacturing Innovation (CMMI); Information and Intelligent Systems (IIS); and Mathematical Sciences (DMS) announces a solicitation on Multimodal Sensor Systems for Precision Health enabled by Data Harnessing, Artificial Intelligence (AI), and Learning. Next-generation multimodal sensor systems for precision health integrated with AI, machine learning (ML), and mathematical and statistical (MS) methods for learning can be envisioned for harnessing a large volume of diverse data in real time with high accuracy, sensitivity and selectivity, and for building

predictive models to enable more precise diagnosis and individualized treatments. It is expected that these multimodal sensor systems will have the potential to identify with high confidence combinations of biomarkers, including kinematic and kinetic indicators associated with specific disease and disability. This focused solicitation seeks high-risk/high-return interdisciplinary research on novel concepts, innovative methodologies, theory, algorithms, and enabling technologies that will address the fundamental scientific issues and technological challenges associated with precision health.

Awards: Standard Grant; Anticipated Funding Amount: \$6,500,000

Letters of Intent: Not Required

Proposal Submission Deadline: June 08, 2020

Contacts: Shubhra Gangopadhyay, telephone: (703) 292-2485, email: sgangopa@nsf.gov

- Usha Varshney, telephone: (703) 292-8339, email: uvarshne@nsf.gov

- Aleksandr L. Simonian, telephone: (703) 292-2191, email: asimonia@nsf.gov

Grant Program: Quantum Algorithm Challenge

Agency: National Science Foundation NSF 20-056 Dear Colleague Letter

RFP Website:

https://www.nsf.gov/pubs/2020/nsf20056/nsf20056.jsp?WT.mc_id=USNSF_25&WT.mc_ev=click

Brief Description: As the age of Moore's law draws to a close, there has been increased interest in new types of computational platforms. Quantum computing in particular has recently seen rapid advances in terms of hardware capabilities, algorithm development, and the availability of software. One of the earliest and most compelling applications for quantum computers, as envisioned by Richard Feynman, is the idea of simulating quantum systems with many degrees of freedom, such as molecules and materials, which is intractable on ordinary classical computers. This and more recently conceived applications of quantum computation related to encryption, search, approximation, optimization, and machine learning promise to have enormous impact in science and technology. With this Dear Colleague Letter (DCL), the National Science Foundation (NSF) aims to challenge the fundamental research community to develop innovative quantum algorithms for many-body systems, develop novel algorithms that expand the applications of quantum computation, or propose new quantum-computing paradigms.

Because quantum computing is very different from classical computing, the best way to obtain a quantum advantage is often quite subtle. It takes creativity and innovation to develop the algorithms required to solve practical problems via quantum computation. Although much progress has been made, there are many open questions and obstacles to overcome before the power of quantum computing can be fully harnessed for application in chemistry, physics, materials science, mathematics, statistics, and computer science.

The National Science Foundation has recently sponsored several workshops that are relevant to this DCL: Mathematical Sciences Challenges in Quantum Information¹, Enabling the Quantum Leap: Quantum Algorithms for Quantum Chemistry and Materials², and Quantum Simulators: Architectures and Opportunities³. These workshops are aligned with the NSF Quantum Leap Big Idea, which aims to exploit quantum mechanical concepts such as superposition and entanglement to develop next-generation technologies for sensing, computing, modeling, and communication.

Stimulated by the recommendations of the workshops, a working group with membership from the Divisions of Chemistry, Materials Research, Physics, and Mathematical Sciences within the Directorate for Mathematical and Physical Sciences; and the Division of Computing and Communication Foundations and Office of Advanced Cyberinfrastructure within the Directorate for Computer and Information Science and Engineering invites the submission of Research Concept Outlines (RCOs) (maximum length three pages) describing research ideas that may lead to [EAGER \(Early-Concept Grants for Exploratory](#)

[Research](#)) (EAGER)⁴ or [Research Advanced by Interdisciplinary Science and Engineering](#) (RAISE)⁵ proposals focused on topics in the following three tracks:

- QSA: quantum computing simulation algorithms for quantum many-body systems.
- QIA: quantum information algorithms, which aims to expand the set of known quantum-computing algorithms with application in computer science, mathematics, and statistics; and
- QCH: quantum computing horizons which explores potentially transformative new paradigms for quantum computation.

RCO Submission: A successful Research Concept Outline (RCO) will describe the following:

- A challenging scientific problem focus and how the proposed work has the potential to significantly advance our ability to address it.
- Associated algorithmic or computational challenge(s) being addressed and why current approaches are inadequate. If there are no current approaches, the barriers or challenges that preclude or make them intractable or impractical should be clearly discussed.
- For each track:
 - QSA: Algorithmic advance(s) being proposed and why the proposed approach offers potential advantages over existing quantum algorithms (if any exist).
 - QIA: How the proposed approach complements or improves upon the existing algorithms and schemes.
 - QCH: The proposed new approach to quantum computing discussed in the context of a challenging existing problem. The RCO should outline what the proposed new way of quantum computing brings over existing paradigms. Will this approach be potentially applicable to other challenging problems?
- The novelty of the proposed ideas.
- Specific plans for evaluating or benchmarking the developments.
- For each track:
 - QSA: The type of hardware being targeted and plans for running on actual machines (or realistic simulators).
 - QIA: The expected speedup (quantum advantage) of the proposed approach, any anticipated improvement in hardware requirements (numbers of qubits/gates), or (for post-quantum cryptographic schemes) the reasons for anticipated resistance to quantum attack.
 - QCH: Prospects for realizing a proof of principle. This track lends itself to interdisciplinary collaboration, if a proof-of-principle is part of the project (RAISE).

The title of the RCO should clearly indicate the funding mode sought through the prefixes EAGER: or RAISE:, followed by QSA: or QIA: or QCH: to label the track. The RCO should also list all the Principal Investigators and their organizational affiliations, as well as anticipated senior personnel. This information should form the first paragraph of the RCO and begin with the first word "Investigators:". Ideas for RAISE proposals should emphasize the interdisciplinary nature of the research and clearly identify the role of each member of the team. RCOs are limited in length to three pages maximum.

Submission Deadline: The RCOs should be sent to QLQA@nsf.gov by April 15, 2020. The Quantum Algorithms (QLQA) committee will review them and invite submissions by May 1, 2020. Invited EAGER and RAISE proposals will be due on June 15, 2020.

Grant Program: NSF Convergence Accelerator Pilot Phase II

Agency: National Science Foundation NSF 20-555

RFP Website: <https://www.nsf.gov/pubs/2020/nsf20555/nsf20555.htm>

Brief Description: The goals of NSF's convergence accelerator effort are to support and accelerate use-inspired convergence research in areas of national importance within particular topics (tracks).

[Dear Colleague Letter \(DCL\) NSF 19-050](#) invited proposals for the NSF Convergence Accelerator Pilot (NSF C-Accel). Track A1 of this pilot, Open Knowledge Network, relates to the [Harnessing the Data Revolution](#) (HDR) Big Idea. Track B1, AI and Future Jobs, and track B2, National Talent Ecosystem, relate to the [Future of Work at the Human-Technology Frontier](#) (FW-HTF) Big Idea.

This solicitation is limited to grantees who received a Phase I Award under [Dear Colleague Letter \(DCL\) NSF 19-050](#) and wish to advance to Phase II.

The NSF Convergence Accelerator supports fundamental research that leads to rapid advances that can deliver useful results to society. Teams are expected to include personnel with the appropriate mix of disciplinary expertise needed to execute their proposed Phase II research and development plan. The team should also include appropriate stakeholders (e.g., industry, Institutions of Higher Education (IHEs), non-profits, government entities, and others), each with a specific role(s) in facilitating the transition of research outputs into practical uses.

Awards: Cooperative Agreement; Anticipated Funding Amount: \$30,000,000

Letters of Intent: Not Required

Proposal Submission Deadline: May 11, 2021

Contacts: Lara A. Campbell, telephone: (703) 292-7049, email: lcampbel@nsf.gov

- Michael Pozmantier, telephone: (703) 292-4475, email: mpozmant@nsf.gov

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

Agency: National Science Foundation NSF 20-554

RFP Website: <https://www.nsf.gov/pubs/2020/nsf20554/nsf20554.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 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 in academic workplaces and the academic profession.

- The *Institutional Transformation (IT)* track is designed to support the development, implementation, and evaluation of *innovative* systemic change strategies that promote gender equity for STEM faculty within an institution of higher education.

- The **Adaptation** track is designed to support the work to adapt, implement, and evaluate evidence-based systemic change strategies that have been shown to promote gender equity for STEM faculty in academic workplaces and the academic profession. **Adaptation** projects can either: 1) support the adaptation of evidence-based systemic change strategies to promote equity for STEM faculty within an institution of higher education; or 2) facilitate national or regional STEM disciplinary transformation by adapting evidence-based systemic change strategies to non-profit, non-academic organizations.
- The **Partnership** track is designed to support the work to facilitate the broader adaptation of gender equity and systemic change strategies. **Partnership** projects are expected to result in national or regional transformation in STEM academic workplaces and the academic profession and demonstrate significant reach. **Partnership** projects can focus on the transformation of institutions and organizations and/or the transformation within one or more STEM disciplines.
- The **Catalyst** track is designed to broaden the types of IHEs that are able to undertake data collection and institutional self-assessment work to identify systemic gender inequities impacting their STEM faculty so that these can be addressed by the institution.

Awards: Standard Grant or Continuing Grant or Cooperative Agreement; **Anticipated Funding Amount:** \$29,000,000

Letters of Intent: Submission of Letters of Intent is required by August 03, 2020

Preliminary Proposals: April 22, 2021

Proposal Submission Deadline:

- **Full Proposal Deadline(s)** (due by 5 p.m. submitter's local time):
November 04, 2020

First Wednesday in November, Annually Thereafter

Partnership and Adaptation full proposal deadline - if you submitted a letter of intent then you can submit the full proposal. Work on the full proposal should have started well before the letter of intent deadline.

- **Full Proposal Target Date(s):**
August 07, 2020

First Friday in August, Annually Thereafter

Catalyst proposals – Catalyst proposals are accepted before and after the target date. Please contact the program office before submitting a proposal to discuss timing for submission.

October 07, 2021

First Thursday in October, Annually Thereafter

Institutional Transformation proposals - only IHEs encouraged by NSF after review of an IT-Preliminary proposal should submit a full IT proposal – IT proposals are accepted before and after the target date.

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

- Erika T. Camacho, telephone: (703) 292-2834, email: ADVANCE@nsf.gov

Grant Program: Gen-4 Engineering Research Centers (ERC)

Agency: National Science Foundation NSF 20-553

RFP Website: <https://www.nsf.gov/pubs/2020/nsf20553/nsf20553.htm>

Brief Description: The ERC program supports convergent research that will lead to strong societal impact. Each ERC has interacting foundational components that go beyond the research project, including engineering workforce development at all participant stages, a culture of diversity and inclusion where all participants gain mutual benefit, and value creation within an innovation ecosystem that will outlast the lifetime of the ERC. The logical reasoning that links the proposed activities to the identified goals for each ERC should be clear.

The ERC program is grounded by the four foundational components of the ERC: **Convergent Research, Engineering Workforce Development, Diversity and Culture of Inclusion, and the Innovation Ecosystem**

Awards: Cooperative Agreement; Anticipated Funding Amount: \$26,000,000 to \$130,000,000

Up to 5 depending on the quality of the proposals and the availability of funds. ERCs are generally funded for ten years, with an initial award for the first five years and second award based on performance and review of a renewal proposal.

Letters of Intent: Submission of Letters of Intent is required by September 02, 2020

Preliminary Proposals: October 02, 2020

Proposal Submission Deadline: May 07, 2021

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

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

Grant Program: Future Manufacturing (FM)

Agency: National Science Foundation NSF 20-552

RFP Website: <https://www.nsf.gov/pubs/2020/nsf20552/nsf20552.htm>

Brief Description: The *next* generation of technological competition in manufacturing will be dictated by inventions of new materials, chemicals, devices, systems, processes, machines, design and work methods, social structures and business practices. Fundamental research will be required in robotics, artificial intelligence, biotechnology, materials science, sustainability, education and public policy, and workforce development to take the lead in this global competition. The research supported under this solicitation will enhance U.S. leadership in manufacturing far into the future by providing new capabilities for established companies and entrepreneurs, improving our health and quality of life, and reducing the impact of manufacturing industries on the environment.

The goal of this solicitation is to support fundamental research and education of a future workforce that will enable Future Manufacturing: manufacturing that either does not exist today or exists only at such small scales that it is not viable. Future Manufacturing will require the design and deployment of diverse new technologies for synthesis and sensing, and new algorithms for manufacturing new materials, chemicals, devices, components and systems. It will require new advances in artificial intelligence and machine learning, new cyber infrastructure, new approaches for mathematical and computational modeling, new dynamics and control methodologies, new ways to integrate systems biology, synthetic biology and bioprocessing, and new ways to influence the economy, workforce, human behavior, and society. Among this array of technologies and potential research subjects, three thrust areas have been identified for support in FY 2020 under this solicitation:

Future Cyber Manufacturing Research,

Future Eco Manufacturing Research, and Future Biomanufacturing Research.

Awards: Standard Grant or Continuing Grant; Anticipated Funding Amount: \$40,000,000

Future Manufacturing Research Grants (FMRG) - Two types of awards will be supported in FY 2020:

Type I: \$500,000 to \$750,000 per year for up to five years,

Type II: \$750,000 to \$2,000,000 per year for up to five years;

Future Manufacturing Seed Grants (FMSG) - Awards in this track will provide support for up to two years at a level not to exceed \$250,000 per year; and

Future Manufacturing Networks (FMNet) - Awards in this track will provide up to five years of support at a total amount of \$500,000.

Letter of Intent: Required by April 10, 2020

Proposal Submission Deadline: June 05, 2020

Contacts: William Olbricht, Program Director, (ENG/CBET), (703) 292-4842, email: wolbrich@nsf.gov

- Andrew B. Wells, Program Director, (ENG/CMMI), telephone: (703) 292-7225, email: awells@nsf.gov
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National Institutes of Health

Grant Program: Ruth L. Kirschstein National Research Service Award (NRSA) Institutional Research Training Grant (Parent T32)

Agency: National Institutes of Health PAR-20-142

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PA-20-142.html>

Brief Description: The objective of the Ruth L. Kirschstein National Research Service Award (NRSA) Institutional Research Training Grant (T32) program is to develop and/or enhance research training opportunities for individuals interested in careers in biomedical, behavioral and clinical research that are relevant to the NIH mission. As the scientific enterprise has expanded, there is greater variation in the backgrounds of people participating, approaches taken to investigate research questions, and the range of the careers in the biomedical research workforce that doctoral recipients are pursuing. There is also increasing recognition of the need to enhance reproducibility of biomedical research results through scientific rigor and transparency.

Awards: NIH will provide funds to help defray other research training expenses, such as health insurance, staff salaries, consultant costs, equipment, research supplies, and faculty/staff travel directly related to the research training program. The most recent levels of training related expenses are announced annually in the *NIH Guide for Grants and Contracts*, and are also posted on the Ruth L. Kirschstein National Research Service Award (NRSA) [webpage](#).

Letter of Intent: Not Required

Deadline: [Standard dates](#) apply

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

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

Grant Program: NICHD Resource Program Grants in Bioinformatics (P41 Clinical Trial Not Allowed)

Agency: National Institutes of Health PAR-20-126

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-20-126.html>

Brief Description: The emergence and rapid evolution of high-resolution sequencing and other omics technologies have generated unprecedented quantities of molecular-level data from the analyses of biological systems. This rapid progress has been particularly significant in the areas of genomics and proteomics. This exponential increase of information has been augmented by increased computing power to digitally record, store, and analyze large amounts of molecular data. However, for the ever-increasing quantities of information to be maximally useful to biomedical scientists requires the establishment and maintenance of database resources that enable the compilation, annotation, storage, and dissemination of available data in compliance with the FAIR Data principles (Findable, Accessible, Interoperable, and Reusable). Additionally, corresponding tools in bioinformatics for data analysis and entry, as well as technical support and user training are required to efficiently utilize these database resources.

Objectives

These Resource Program Grants in Bioinformatics are intended to support the continued availability, operation, improvement and maintenance of databases, digital information, or bioinformatics tools and/or resources, user training and services, and wide dissemination of these tools or resources.

To qualify for support, bioinformatics resources such as software and algorithms, or knowledge resources must be of demonstrable value toward advancing research utilizing animal model systems in the biomedical sciences, and must also be of particular importance to those seeking to understand the biological basis of human and animal development and the etiology of structural birth defects.

The resources must be sufficiently mature to have verifiable support and utility for users within the developmental biology research community; operate according to FAIR data principles and have a demonstrable national and international impact.

Examples of activities that Resource Program Grants in Bioinformatics are intended to support include but are not limited to:

- Efforts to curate and annotate unique collections of data, information or knowledge that support learning and research utilizing animal model systems;
- Information and knowledge processing, including information extraction, integration of data from heterogeneous sources, event detection, and feature recognition within these data sets;
- Tools for analyzing large datasets, including genomic and proteomic data, data regarding gene and protein expression in relation to cellular, anatomical, and/or developmental coordinates;
- Data sets and tools for analysis of gene regulatory networks, protein-protein interaction networks, epigenetic regulatory mechanism, systems biological approaches, and other tools for understanding normal and abnormal biological function and/or development;
- Other unique data sets or information tools of demonstrable utility for biomedical research using animal models of developmental processes;
- Systems for knowledge representation, including vocabularies, ontologies, simulations and virtual reality, retrieval tools and intelligent agents for scientific information related to developmental processes.

Resource Program Grants in Bioinformatics are not intended to support:

- Research and development intended as proof of concept, to ascertain feasibility, or to underwrite the initial development of a tool or resource.
- Projects that utilize a tool or database being supported through these resource program grants. Such projects should seek funding through customary NIH research grant mechanisms.
- Tools and resources that duplicate activities of the National Library of Medicine or existing resources supported by other Institutes of the National Institutes of Health.

Applicants who wish to undertake biomedical informatics research, to develop and test novel information technologies, or to perform feasibility or proof-of-concept studies, should respond to other FOAs.

Awards: Requested direct costs cannot exceed \$1,750,000 per year, are expected to range from \$500,000 to no more than \$1,750,000 per year and need to reflect the actual needs of the proposed project.

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

Deadline: [Standard dates](#) apply

The first standard application due date for this FOA is May 25, 2020.

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

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

Grant Program: Maximizing Investigators' Research Award (MIRA) for Early Stage Investigators (R35 - Clinical Trial Optional)

Agency: National Institutes of Health PAR-20-117

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-20-117.html>

Brief Description: Supporting fundamental research by funding individual projects has a number of consequences that could reduce the efficiency and effectiveness of the biomedical research enterprise in the U.S. To address these issues and increase the efficiency and efficacy of grant funding, the NIGMS [Maximizing Investigators' Research Award \(MIRA\)](#) is a single grant to provide support for the NIGMS-relevant program of research in an investigator's laboratory. For this FOA, eligibility to apply is limited to PD/PIs who are [NIH-defined Early Stage Investigators](#) (ESIs) at the time of submission and the "program of research" is defined as a collection of projects in the PD/PI's lab that are within the [mission of NIGMS](#). Applicants who receive R01, SC1, DP1, DP2, or any other type of disqualifying award prior to issuance of the ESI-MIRA become ineligible to receive the award.

In comparison to R01 funding of NIGMS ESI investigators, Maximizing Investigators' Research Award for Early Stage Investigators (ESI MIRA) benefits include:

- No requirement or expectation for preliminary data, which will
 - Enable investigators to apply earlier in their independent research career, allowing them to secure grant funding that will launch and sustain a successful research career, and
 - Enhance investigators' ability to move into research areas that are distinct from those of their postdoctoral mentors, which could increase chances for new scientific discoveries;
- Increased stability of funding for NIGMS-supported ESIs, improved success rates, and more graduated, rather than all-or-none, funding decisions for MIRA renewals;
- Larger award amount than the current average NIGMS R01 award to ESIs, while the project period will be similar;
- More flexibility to pursue new ideas and opportunities as they arise during the course of research because the award is not tied to specific aims;
- A reduction in administrative burden associated with managing multiple grants; and
- A reduction in required application writing.

In developing MIRA, NIGMS is committed to maintaining support for at least the current total number of NIGMS-funded early stage investigators and their associated programs of research. The Institute will also work to ensure that it maintains a broad and diverse research portfolio in terms of scientific areas, approaches, regions, institutions, and individuals. Such diversity will optimize returns on the Institute's investments by maximizing the ideas explored and the chances for important breakthroughs.

Awards: Applications may request up to \$250,000 direct costs per year.

Letter of Intent: Not Required

Deadline: October 2, 2020; October 4, 2021; October 3, 2022

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

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

Grant Program: High-End Instrumentation (HEI) Grant Program (S10 Clinical Trial Not Allowed)

Agency: National Institutes of Health PAR-20-114

[PAR-20-113](#) Shared instrumentation Grant (SIG) Program (Clinical Trial Not Allowed)

[PAR-20-112](#) Shared Instrumentation for Animal Research (SIFAR) Grant Program (Clinical Trial Not Allowed)

RFP Website: <https://grants.nih.gov/grants/guide/rfa-files/RFA-ES-20-004.html>

Brief Description: The High-End Instrumentation (HEI) Grant program encourages applications from groups of NIH-supported investigators to purchase or upgrade a single item of high-end, specialized, commercially available instruments or integrated systems. The minimum award is \$600,001. There is no maximum price limit for the instrument; however, the maximum award is \$2,000,000. Types of instruments supported 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, high throughput robotic screening systems, and biomedical imagers.

Awards: Applications will be accepted that request a single, commercially available instrument or integrated system. The minimum award is \$600,001. There is no upper limit on the cost of the instrument, but the maximum award is \$2,000,000. 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: June 1, 2020

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

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

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

Agency: National Institutes of Health PAR-20-113

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-20-113.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 high-priced 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 can provide. The components must be dedicated to the system and not used independently.

The Shared Instrument Grant (SIG) Program encourages applications from groups of NIH-supported investigators to purchase or upgrade a single item of high-priced, specialized, commercially available instruments or integrated systems. The minimum award is \$50,000. There is no maximum price limit for the instrument; however, the maximum award is \$600,000. Types of instruments supported include, but are not limited to: X-ray diffractometers, mass spectrometers, nuclear magnetic resonance spectrometers, DNA and protein sequencers, biosensors, electron and light microscopes, cell sorters, and biomedical imagers.

The SIG Program will not support requests for:

- An instrument with a base cost of less than \$50,000;
- Multiple instruments bundled together;
- Purely instructional equipment;
- Instruments used for clinical (billable) care;
- Institutional administrative management systems, clinical management systems;
- Software, unless it is integrated in the operation of the instrument and/or necessary for generation of high-quality output experimental data from the instrument;
- Stand-alone workstations for data processing, software licenses, and duplicate software items;

- General purpose equipment (such as standard machine shop equipment), instruments to furnish a research facility (such as autoclaves, hoods, equipment to upgrade animal facilities), equipment for routine sustaining infrastructure (such as standard computer networks or data storage systems);
- Disposable devices, office furniture, and supplies;
- Alteration or renovation of space to house the instruments.

Awards: Applications will be accepted that request a single, commercially available instrument or an integrated system. The minimum award is \$50,000. There is no upper limit on the cost of the instrument, but the maximum award is \$600,000. 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: June 1, 2020

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

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

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

Grant Program: DoD Spinal Cord Injury, Investigator- Initiated Research Award

DoD Spinal Cord Injury, Translational Research Award

Agency: Department of Defense W81XWH-20-SCIRP-IIRA

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

Brief Description: To meet the intent of the award mechanism, applications must address at least one of the FY20 SCIRP IIRA Focus Areas listed below. Applications may address more than one Focus Area. In particular, applications combining biomarker studies with studies in one or more of the other FY20 SCIRP Focus Areas is encouraged. Applications using clinically relevant combinations of interventions within or across Focus Areas are also encouraged. The FY20 SCIRP IIRA Focus Areas are: • Preserving and protecting spinal cord tissue at time of injury for improved neurologic outcomes: ○ Responsive projects may include surgical and acute care management of SCI. ○ Early therapeutics (devices and pharmacologic interventions) to stabilize SCI in the prehospital environment and during transport are encouraged. ○ Applications proposing neuroprotective interventions need to demonstrate a clinically feasible window for treatment and more than an incremental improvement over existing therapies. • Identifying and validating biomarkers for diagnosis, prognosis, and for evaluation of treatment efficacies: ○ Biomarkers must focus on diagnosis, prognosis, progression, and/or recovery of SCI. ○ Projects with a clear link between a biomarker and underlying physiology are encouraged. Projects can include imaging and other modalities. ○ Applications should demonstrate a clear path to clinical use. ○ Biomarker studies directed at identifying the best single or combination of treatments for individuals (personalized medicine) are encouraged. ○ Ancillary studies with existing clinical trials are allowed and encouraged.

Awards: The anticipated direct costs budgeted for the entire period of performance for an FY20 SCIRP Investigator-Initiated Research award will not exceed \$500,000.

Proposal Deadline:

Pre-Application Submission Deadline: 5:00 p.m. Eastern time (ET), May 21, 2020 • Invitation to Submit an Application: June 30, 2020 • Application Submission Deadline: 11:59 p.m. ET, August 25, 2020

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

Grant Program: Air Force Fiscal Year 2021 Young Investigator Research Program (YIP)

Agency: Department of Defense Air Force Office of Scientific Research

FOA-AFRL-AFOSR-2020-0003

Website: <https://www.wpafb.af.mil/Welcome/Fact-Sheets/Display/Article/842050/>

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:

Pre-Solicitation YIP Questions due 14 April 2020 (Tuesday) Pre-Solicitation YIP Answers posted 28 April 2020 (Tuesday) YIP White Papers must be received no later than 14 May 2020 (Thursday) at 11:59 PM Eastern Time YIP Proposals must be received no later than 14 July 2020 (Tuesday) at 11:59 PM Eastern Time

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

Grant Program: 2020 Broad Agency Announcement

Agency: Department of Defense W912HZ-20-BAA-01

Website: <https://beta.sam.gov/opp/a429587c4a284ad6a78ad1cf70c02d5c/view>

Brief Description: The U.S. Army Engineer Research and Development Center (ERDC) includes the Coastal and Hydraulics Lab (CHL), the Geotechnical and Structures Lab (GSL), the 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. This research is conducted by Government personnel and by contract with educational institutions, non-profit organizations and private industries.

Awards: Various

Proposal Deadline: BAA will close on Feb 05, 2021

Contact Information: Reginald Bryant Phone 601-634-7166 Deberay Carmichael Phone:601-634-5337; ERDC-BAA@usace.army.mil

Grant Program: Microsystems Technology Office (MTO)

Agency: Department of Defense HR001120S0036

Website: <https://beta.sam.gov/opp/a429587c4a284ad6a78ad1cf70c02d5c/view>

Brief Description: MTO seeks to develop high-risk, high-reward technologies that continue DARPA's mission of creating and preventing strategic surprise, help to secure the Department of Defense's (DoD) technological superiority, and address the complex threats facing U.S. national security. 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.

As MTO evolves to address future microsystems-related challenges, the office has identified four thrust areas: (1) Embedded Microsystem Intelligence and Localized Processing, (2) Next Generation Front-End Component Technologies for Electromagnetic (EM) Spectrum Dominance, (3) Microsystem Integration for Increased Functional Density and Security, and (4) Disruptive Defense Microsystem Applications. Each of these overlapping spaces present significant opportunities for exploring new and creative technologies.

1. Embedded Microsystem Intelligence and Localized Processing: Advances in artificial intelligence and machine learning-specific processors, graphic processing units (GPUs), and other special purpose computation technologies offer a new path to overcome such limitations. MTO seeks to explore the development of sensors and systems that enable specialized computation at the tactical edge and microsystems capable of learning, moving beyond those with pre-set functions. One area of particular interest within this topic is technologies to achieve improved cognitive electronic warfare (EW).

2. Next Generation Front-End Component Technologies for Electromagnetic (EM) Spectrum Dominance: For many DoD command, control, communications, computing, intelligence, surveillance, and reconnaissance (C4ISR) and EW systems, the analog and mixedsignal front-end fundamentally determines key performance characteristics, such as bandwidth, tuning range, dynamic range, etc. Often these requirements greatly exceed the needs of the commercial sector. Thus, these technologies tend to be niche and largely ignored by the commercial electronics industry, but they hold extraordinary value for the DoD. To maintain dominance in the EM battlespace, MTO is investing in a new set of emerging material, device, and circuit approaches that provide leapahead performance in the sensing and modulation for radio frequency (RF), active and passive photonic, electro-optical/infrared (EO/IR), and magnetic-field applications.

3. Microsystem Integration for Increased Functional Density and Security: Over the past decades, microelectronics advancement has proceeded through several waves – the first wave was controlled by device scaling, the second by the introduction of new materials and architectures, and the third through the creation of 3D devices. MTO has assumed a leadership role in the ongoing “Fourth Wave” revolution that will be dominated by 3D heterogeneous integration at multiple length scales. Fine-scale integration will bridge the technical gap between traditional assembly technology and the lithography-defined back-end-of-the-line dense interconnects. A key part of this vision is that fine-scale integration can serve as a means to tie together the incredibly powerful but widely available commercial.

Awards: This BAA is primarily, but not solely, intended for early stage research (studies) that may lead to larger, focused, MTO programs in the future. Studies are defined as single phase efforts of short duration (< 12 months) costing less than \$1,000,000.

Proposal Deadline:

Abstract Due Date: January 3, 2022

Full Proposal Due Date: March 13, 2022

Contact Information: BAA Coordinator HR001120S0018@darpa.mil

Grant Program: Atmosphere as a Sensor (AtmoSense)

Agency: Department of Defense HR001120S0036

Website: <https://beta.sam.gov/opp/c1e7a196007d4cdc9e47be0d722d11ef/view>

Brief Description: AtmoSense seeks to develop the scientific understanding to exploit signatures for geolocation of natural sources that disturb the Earth's atmosphere, which are fundamentally different than those relied upon by direct observation approaches.

The ionospheric disturbances are thought to be due to acoustic and/or gravity waves that are produced by the interaction between the source and the atmosphere. The qualitative physical explanation for how this occurs is fairly straightforward. Ground based sources of disturbance such as mining operations or storm cells can launch mechanical waves spanning from the infrasonic to the ultrasonic. As these transient disturbances travel radially outward from the source, those wave components that propagate low in altitude along the surface of the Earth are dampened by the troposphere. However, those wave components that travel along the Earth's radial direction (i.e. higher in altitude) experience less dampening as the mean free path between atmospheric constituents increases due to decreasing air density. As this energy propagates, it can evolve into phenomena such as acoustic waves, gravity waves, or acoustic-gravity waves, as well as any non-linearly triggered transformations. Passing from the troposphere, through the stratosphere, and into the mesosphere, this energy eventually strikes the ionosphere. Because the electrons in the ionosphere must follow the Earth's magnetic field lines, compression occurs, and the ionosphere responds by launching traveling disturbances.

AtmoSense will attempt to understand the fundamentals of energy propagation from the ground to the ionosphere in order to determine if the atmosphere can be used as a sensor. This entails developing new modeling and simulation capabilities as well as new sensing modalities that can be combined to answer a set of fundamental questions that will help determine the feasibility of the AtmoSense concept. Among these basic science questions to be answered are:

1. What is the nature of transmitted signals?
2. What mode structure (mechanical and electromagnetic) can the mesosphere and lower ionosphere support?
3. What dynamic variables are best measured and at what altitude to capture source disturbed information?

The AtmoSense approach will consist of three technical areas (TAs) designed to answer these general basic science questions in order to demonstrate the viability of the AtmoSense concept.

TA1 - Modeling and Simulation will develop the model and simulation (M&S) and analytical approximations to connect near-field disturbances to far-field mechanical and electromagnetic perturbations.

TA2 - Characterization of the Background will experimentally characterize the background and mode structure of the mesosphere and lower ionosphere.

TA3 - Sensing Modalities will develop new sensing modalities, use old sensing modalities in new ways, and/or exploit natural/non-natural emitters to detect mechanical and electromagnetic variations of the atmosphere.

Note that while there appears to be overlap between TA2 and TA3, TA2 is primarily focused on measuring the background or noise of the atmosphere, whereas TA3 is focused on measuring the transient signal through the noise background. Thus, there will be stricter requirements in TA3 regarding required sensitivities as well as a focus on developing innovative measurement techniques that are "noise resistant."

Awards: TBA

Proposal Deadline:

Abstract Due Date: 03/13/2020, 4:00 p.m.

Full Proposal Due Date: 04/22/2020, 4:00 p.m

Contact Information: BAA Coordinator AtmoSense@darpa.mil

Grant Program: FY 2021 Multidisciplinary Research Program of the University Research Initiative (MURI)

FY 2021 MURI- ARMY Submission

FY 2021 MURI -ONR Submission

FY 2021 MURI -AFOSR Submission

Agency: Department of Defense

ONR Announcement # N00014-20-S-F003 ARO Announcement # W911NF-20-S-0009 AFOSR Announcement # FOA-AFRL-AFOSR-2020-0002

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

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. White papers and proposals addressing the following topics should be submitted to the Office of Naval Research (ONR):

ONR:

Topic 1: Molecular Qubits for Synthetic Electronics

Topic 2: A Brain-based Compositional Framework for Robust Computer Vision

Topic 3: Littoral Ocean Dynamics off Rocky Coasts and Shorelines

Topic 4: Fog and Turbulence

Topic 5: Dynamic Tuning of Thermal Transport

Topic 6: Chemically and Thermally Insensitive Super/Ultra-Hard Materials

Topic 7: Narrative, Moral and Social Foundations of Social Cyber-Attack in Social Media

Topic 8: A Dynamics and Control Theory of Safe, Cognitive and Learning Systems

Topic 9: Understanding Turbulence-Chemistry Interactions in Non-Equilibrium, High-Speed Flows

Topic 10: Predicting Organic Molecular Decomposition

White papers and proposals addressing the following topics should be submitted to the Army Research Office (ARO):

ARO:

Topic 11: Anomalous Dipole Textures in Engineered Ferroelectric Materials

Topic 12: Cyber Autonomy through Robust Learning and Effective Human/Bot Teaming

Topic 13: Highly Heterogeneous Meta-macrostructures Created via Fine-particle Interactions

Topic 14: Non-Silica Inorganic Material Phases Synthesized from Genetically Modified Diatoms

Topic 15: Novel Mechanisms of Neuro-Glio Bio-Computation and Reinforcement Learning

Topic 16: Quantum Network Science

Topic 17: The Same is Different: Integrating Multiple Phenomena in Single Materials
Topic 18: Tunable Dilute Anion III-Nitride Nanostructures for Stable Photocatalysis
White papers and proposals addressing the following topics should be submitted to the Air Force Office of Scientific Research (AFOSR):

AFOSR:

Topic 19: Mechanisms of Novel Reactivity in Aqueous Microdroplets
Topic 20: Topological Plasma Electromagnetics
Topic 21: Interfacial Engineering of Superconductors
Topic 22: Targeted Optical Stimulation of Individual Retinal Photoreceptors
Topic 23: Quantum Random Access Memory
Topic 24: Metasurface Edge Sensing, Processing and Computing
Topic 25: Non-Hermitian Programmable Materials at Exceptional Points
Topic 26: Mathematical Foundations for Enabling Robust Optimal Design of Hypersonic Systems

White papers and proposals addressing the following OSD topic should be submitted to the Air Force Office of Scientific Research (AFOSR):

OSD:

Topic 27: Advanced Modeling of Evolutionary Cyber Eco-Systems with Autonomous Intelligence

Award: Standard Grants; Typical annual funding per grant is in the \$1.25M to \$1.5M range. Available Funding: \$180,000,000

Proposal Deadline:

White Papers due: 01 June 2020 (Monday) at 11:59 PM Eastern Time

Applications due: 14 September 2020 (Monday) at 11:59 PM Eastern Time

Contact Information:

Office of Naval Research Dr. Ellen Livingston Email: ellen.s.livingston@navy.mil

Army Research Office DR. LARRY RUSSELL, JR. Email: usarmy.rtp.ccdc-arl.mbx.aro-muri@mail.mil

Air Force Office of Scientific Research MS. KATIE WISECARVER Email: MURI@us.af.mil

DoD Liaison (for OSD topic) Dr. Jennifer Becker Email: jennifer.j.becker.civ@mail.mil

Grant Program: FY 2021 Defense University Research Instrumentation Program (DURIP)-AFOSR Submission

FY 2021 Defense University Research Instrumentation Program (DURIP)- ARMY Submission

FY 2021 Defense University Research Instrumentation Program (DURIP)- ONR Submission

Agency: Department of Defense AFOSR: FOA-AFRL-AFOSR-2020-0001

Dept of Army W911NF-20-S-0006

Office of Naval Research FOA-AFRL-AFOSR-2020-0001

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

<https://www.wpafb.af.mil/Welcome/Fact-Sheets/Display/Article/842111/afosr-funding-opportunities-university-research-initiative-uri/#anchor1>

<https://www.onr.navy.mil/en/Education-Outreach/Sponsored-Research/University-Research-Initiatives/DURIP>

Brief Description: The Department of Defense (DoD) announces the Fiscal Year 2021 Defense University Research Instrumentation Program (DURIP). DURIP is designed to improve the capabilities of accredited United States (U.S.) institutions of higher education to conduct research and to educate scientists and engineers in areas important to national defense, by providing funds for the acquisition of research equipment or instrumentation. For-profit organizations are not eligible for DURIP

funding. Proposing institutions should be seeking to purchase instrumentation in support of research areas of interest to the DoD, including areas of research supported by the administering agencies.

Army Research Office at <http://www.aro.army.mil>

Select “Broad Agency Announcements” in the “For the Researcher” section to see the most recent ARL or ARO Core Broad Agency Announcement for Basic and Applied Scientific Research.

Office of Naval Research at <http://www.onr.navy.mil/>.

Select “Contracts and Grants” and then “Funding Opportunities” to see the Long Range Broad Agency Announcement for Navy and Marine Corps Science and Technology, BAA N00014-18-S-B001.

Air Force Office of Scientific Research at <http://www.wpafb.af.mil/afri/afosr/>

Awards: DURIP funds will be used for the acquisition of major equipment to augment current or develop new research capabilities in support of DoD-relevant research. Proposals may request \$50,000 to \$1,500,000. Proposals for purely instructional equipment are not eligible. General-purpose computing facilities are not appropriate for DURIP funding, but requests for computers for DoD-relevant research programs are appropriate.

Proposal Deadline: May 15, 2020

Contact Information:

Army Research Office

DR. LARRY RUSSELL, JR.

Phone: (919) 549-4211

E-mail: usarmy.rtp.rdecom-aro.mbx.durip@mail.mil

Office of Naval Research

DR. ELLEN LIVINGSTON

Phone: (703) 696-4668

E-mail: ellen.s.livingston@navy.mil

Air Force Office of Scientific Research

MS. KATIE WISECARVER

Phone: (703) 696-9544

E-mail: durip@us.af.mil

Grant Program: Quantum Information Sciences

Agency: Department of Defense FA8750-20-S-7006

Website:

https://beta.sam.gov/opp/dd6cccb1a9424440b7f0ff1d60ba9b7b/view?keywords=intelligence&sort=-modifiedDate&index=opp&is_active=true&page=1

Brief Description: The Air Force Research Laboratory - Information Directorate (AFRL/RI) is soliciting white papers under this Broad Agency Announcement (BAA) for research, design, development, concept testing, evaluation, experimentation, integration and delivery of Quantum Information Sciences supporting the implementation and use of Command, Control, Communications, Computers & Intelligence (C4I)-related information and communications technologies and techniques. In particular, this effort seeks to advance and assess advanced algorithm designs and technologies harnessing emerging quantum computing techniques to support AFRL/RI’s C4I mission.

AFRL/RI has established a Quantum Information and Science branch (RITQ). Research within this branch will include Quantum Algorithms and Computing, Memory-Node-Based Quantum Networking, Quantum Information Processing, Superconducting Hybrid Quantum Platforms, and Quantum Information Sciences. These technologies will have both in-house and contractual based requirements to support the overall mission of the RITQ branch.

Further, AFRL/RI is interested in developing a user community around this emerging technology, to consist of other U.S. Government organizations (federal, state, and local), U.S. Government contractors and commercial industry, and academia (both public and private).

Awards: Various. Total funding for this BAA is approximately \$49.9M. Individual awards will not normally exceed 36 months with dollar amounts normally ranging from \$0.5M to \$2M.

Proposal Deadline: FY21 by 30 Sep 2020; FY22 by 30 Sep 2021

Contact Information: Kristi Mezzano

AFRL/RITQ

Telephone: (315) 330-2448

Email: AFRL.RIT.Quantum@us.af.mil

Grant Program: NRL Long Range Broad Agency Announcement (BAA) for Basic and Applied Research

Agency: Department of Defense Naval Research Laboratory N00173-19-S-BA01

Website: <https://www.nrl.navy.mil/doing-business/Current-NRL-BAA>

Brief Description: The Naval Research Laboratory (NRL) The Naval Research Laboratory (NRL) is the Navy's corporate laboratory. NRL conducts basic and applied research for the Navy in a variety of scientific and technical disciplines. The basic research program is driven by perceptions about future requirements of the Navy. NRL conducts most of its research program at its own facilities but also funds some related research such as anticipated by this announcement. More extensive research support opportunities are available from the Naval Research Laboratory (NRL). NRL announcements may be accessed via the Internet at <https://www.nrl.navy.mil/doingbusiness/contracting-division/baa>.

NRL is interested in receiving proposals for Long-Range Science and Technology (S&T) Projects which offer potential for advancement and improvement of Navy and Marine Corps operations. Readers should note that this is an announcement to declare NRL's broad role in competitive funding of meritorious research across a spectrum of science and engineering disciplines. A brief description of the NRL Program Codes and the science and technology thrusts that NRL is pursuing is provided below. Additional information can be found at the NRL website at <https://www.nrl.navy.mil/research/directorates-divisions/>.

Awards: Various

Proposal Deadline: September 05, 2020

Contact Information: Mary A Johnson; Procurement Analyst; Phone 202-767-2021

[General Inquiries](#)

Grant Program: Air Superiority Technology Broad Agency Announcement

Agency: Department of Defense FA8651-20-S-0008

Website:

https://www.fbo.gov/index?s=opportunity&mode=form&id=dbdb4a35cb22a4a0d8414b652f0c74bb&tab=core&_cvview=0

Brief Description: For purposes of this announcement, research is defined to be scientific study and experimentation directed at increasing knowledge and understanding in relation to long term national security needs. It is an enhancement to related exploratory and advanced development programs. A program should be designed to demonstrate well-defined and substantive research results, should not be overly ambitious or open-ended, and should not be a paper study that inherently requires a substantial testing effort.

RESEARCH AREA 1 – MODELING, SIMULATION, & ANALYSIS (MS&A): The objective of this work is to develop/modify and employ models used to analyze Air Superiority concepts and their related

concepts of employment. The objective is to apply, modify and/or combine engineering, engagement (one-on-one), mission (few-on-few), systems-of-systems, campaign (many-on-many, military worth), level modeling techniques, tools, and analysis methods as well as virtual and constructive digital simulation which lend themselves to the quick and effective evaluation of air superiority concepts. Concepts include, but are not limited to, intercommunicative weapons, novel damage mechanisms, lethal and novel destruct mechanisms, multiple targeting, and time critical delivery. Detailed modeling includes, but is not limited to, sensors, aerodynamics, autopilots, navigation and guidance schemes, propulsion, warheads, fuzes, datalinks, fire control, launcher, suspension, carriage and release, error filters, environment (wind, fog, and dust), lethality, vulnerability, and threats.

RESEARCH AREA 2 – INNOVATIVE AIRCRAFT INTEGRATION TECHNOLOGIES The objective of this work is to design, develop, and demonstrate innovative aircraft integration technologies including but not limited to physical, electrical, and logical interfaces; and other aspects of aircraft integration that may be applicable.

RESEARCH AREA 3 – FIND-FIX-TARGET-TRACK (F2T2) & DATALINK TECHNOLOGIES The objective of this work is to design, develop, and demonstrate innovative Find, Fix, Target, and Track (F2T2) technologies for the detection of threats to aircraft. These F2T2 technologies should provide threat warning, threat characteristics, You Are The One (YATO) or You Are Not The One (YANTO) discrimination, highly accurate threat cueing, range and range rate, and other pertinent information required to analyze and coordinate a response to a threat.

RESEARCH AREA 4 – ENGAGEMENT MANAGEMENT SYSTEM TECHNOLOGIES The objective of this work is to design, develop, and demonstrate an innovative Engagement Management system to maximize aircraft survivability in increasingly contested environments while minimizing false positives and engagement costs. These technologies should interface with aircraft and other Find-Fix-Target-Track (F2T2) systems, determine the optimum counter measure response(s), respect keep-out or no-fire zones, and make other decisions required for aircraft survivability.

RESEARCH AREA 5 – HIGH VELOCITY FUZING The objective of this work is to design, develop, and demonstrate high velocity fuzing, including both Electronic Safe and Arm (ESAF) technologies that can safely initiate a warhead and Target Detection Devices (TDDs) that can provide miniaturized, fast-responding, highly accurate range and location information for high closure velocity intercepts.

RESEARCH AREA 6 – MISSILE ELECTRONICS The objective of this work is to investigate all aspects of Missile Power & Electronics as it applies to air-to-air missiles. The following technologies and research areas are of particular interest: Power Conversion and Distribution, Power Generation and Storage Technologies (Advanced Missile Battery Technology and Ultracapacitors), Guidance Electronics, and Thermal Management.

RESEARCH AREA 7 – MISSILE GUIDANCE AND CONTROL TECHNOLOGIES The objective of this work is to investigate Missile Guidance and Control Technologies to include the following: Robust guidance algorithms against maneuvering targets, real time optimal lofting/energy management techniques, integrated guidance and control, reduced latency between seeker measurements and final control fin commands, highly accurate seeker technologies and algorithms, robust and novel target state estimators, third party queuing, optimal body orientation at endgame encounter, (reinforcement learning-adaptive control) approach, simultaneous learning and control, Hybrid (switched) guidance law selection based on the red-target strategy/maneuver, many-on-many engagement guidance laws, optimal pulse delay and propellant allocation, rapid flexible autopilot design process, robust control in aerodynamic cross coupling environments for various airframe designs from canard to tail control, robust control at high angles of attack, innovative autopilot architectures, efficient verification of safe separation over all flight regimes, Non-linear/adaptive control for agile maneuver, and advanced airframe control techniques.

RESEARCH AREA 8 – ADVANCED WARHEAD TECHNOLOGIES

More areas; Please see the BAA on above website.

Awards: Various

Proposal Deadline: This BAA will remain open through 31 October 2024 or until amended or superseded. It may be reissued and/or amended periodically, as needed.

Contact Information: Technical POC: Mr. David Hartline , AFRL, (850) 882-1324
david.hartline.1@us.af.mil

Grant Program: DSO Office-wide Broad Agency Announcement

Agency: Department of Defense DARPA HR001119S0071

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

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

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

Proposal Deadline: Executive Summary Due Date: June 12, 2020, 4:00 p.m. o Abstract Due Date: June 12, 2020, 4:00 p.m. o Full Proposal Due Date: June 12, 2020, 4:00 p.m.

Contact Information: BAA Email: HR001119S0071@darpa.mil

Department of Transportation

Grant Program: FY 2020 National Infrastructure Investments

Agency: Department of Transportation DTOS59-20-RA-BUILD

Website: <https://www.transportation.gov/BUILDgrants/apply>

Brief Description: Activities eligible for funding under BUILD Transportation planning grants are related to the planning, preparation, or design—including environmental analysis, feasibility studies, and other pre-construction activities—of eligible surface transportation capital projects described in Section C.3. (a). In addition, eligible activities related to multidisciplinary projects or regional planning may include: (1) Development of master plans, comprehensive plans, or corridor plans; (2) Planning activities related to the development of a multimodal freight corridor, including those that seek to reduce conflicts with residential areas and with passenger and non-motorized traffic; (3) Development of port and regional port planning grants, including State-wide or multi-port planning within a single jurisdiction or region; (4) Risk assessments and planning to identify vulnerabilities and address the transportation system's ability to withstand probable occurrence or recurrence of an emergency or major disaster.

Awards: The FY 2020 Appropriations Act specifies that BUILD Transportation grants may not be less than \$5 million and not greater than \$25 million, except that for projects located in rural areas (as defined in Section C.4.(a)) the minimum award size is \$1 million. There is no minimum award size, regardless of

location, for BUILD Transportation planning grants. Applicants are strongly encouraged to submit applications only for eligible award amounts.

Proposal Deadline: May 18, 2020 at 5:00pm Eastern Time.

Contact Information: For further information, please contact the BUILD Transportation grants program staff via e-mail at BUILDgrants@dot.gov, or call Howard Hill at 202-366-0301.

Department of Agriculture:

Grant Program: Scientific and Cooperative Research Program

Agency: Department of Agriculture USDA-FAS-10961-0700-10-20-0001

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

Brief Description: The United States Department of Agriculture's (USDA) Foreign Agricultural Service (FAS) announces the availability of funding through cost reimbursable agreements for the Scientific Cooperation Research Program (SCRCP) for fiscal year (FY) 2020.

SCRCP will support applied research, extension, and education projects — lasting up to two years between U.S. researchers and researchers from selected emerging market economies - that create practical solutions to challenges faced by small farmers and build regional or global trade capacities in FAS countries. In general, applications should support one or more of the following strategies of the Global Food Security Act (Public Law No: 114-195):

1. Accelerate inclusive, agricultural-led economic growth that reduces global poverty, hunger, and malnutrition, particularly among women and children.
2. Increase the productivity, incomes, and livelihoods of small-scale producers, especially women, by working across agricultural value chains, enhancing local capacity to manage agricultural resources effectively, and expanding producer access to local and international markets.
3. Build resilience to food shocks among vulnerable populations and households while reducing reliance upon emergency food assistance.
4. Create an enabling environment for agricultural growth and investment, including through the promotion of secure and transparent property rights.
5. Improve the nutritional status of women and children, with a focus on reducing child stunting, including through the promotion of highly nutritious foods, diet diversification, and nutritional behaviors that improve maternal and child health;
6. Align with and leverage broader United States strategies and investments in trade, economic growth, science and technology, agricultural research and extension, maternal and child health, nutrition, and water, sanitation, and hygiene.

Awards: \$500,000 total (up to \$50,000 per award)

Proposal Deadline: Application Submission Deadline: March 2, 2020

Contact Information: Sintayehu Assefa Phone: +1-202-720-2200 Email: SINTAYEHU.ASSEFA@USDA.GOV

Grant Program: Biotechnology Risk Assessment Grants Program

Agency: Department of Agriculture USDA-NIFA-BRAP-007072

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

Brief Description: The purpose of the BRAG program is to support the generation of new information that will assist Federal regulatory agencies in making science-based decisions about the effects of introducing into the environment genetically engineered organisms (GE), including plants,

microorganisms — such as fungi, bacteria, and viruses — arthropods, fish, birds, mammals and other animals excluding humans. Investigations of effects on both managed and natural environments are relevant. The BRAG program accomplishes its purpose by providing federal regulatory agencies with scientific information relevant to regulatory issues. See the Request for Applications (RFA) for details. [View the Centers of Excellence \(COE\) webpage](#) to access a factsheet on the COE designation process, including COE criteria, and a list of programs offering COE opportunities.

Awards: Up to \$500,000; Anticipated available funding: \$4,500,000

Proposal Deadline: Mar 18, 2020 FY 2020: March 18, 2020 FY 2021: February 24, 2021 Letter of Intent Deadline: February 12, 2020; January 21, 2021 Note: Letter of Intent encouraged but not required

Contact Information: Dr. Lakshmi Matukumalli lakshmi.matukumalli@usda.gov (816)-926-1189

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

Agency: Department of Agriculture USDA-NIFA-AFRI-007052

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

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

Awards: Anticipated Funding: \$192,600,000

Submission Deadline: Agricultural Innovation through Gene Editing - Letter of Intent required

Letter of Intent Deadline - February 19, 2020

Agricultural Microbiomes - Letter of Intent required

Letter of Intent Deadline - March 10, 2020

Tactical Sciences for Agricultural Biosecurity - Letter of Intent required

Letter of Intent Deadline - March 10, 2020

All Conference Grants - Letter of Intent required

Letter of Intent Deadline - Minimum of 135 days before the conference begins

Application Deadline Dates: Dates vary by program area priority

Contact: Technical Contact: Dr. Louis Tupas, Deputy Director, Institute of Bioenergy, Climate, and Environment Telephone: (202) 401-5022 Fax: (202) 401-6488 E-mail: AFRI@nifa.usda.gov

Grant Program: REAP-Renewable Energy Systems and Energy Efficiency Improvements

Agency: Department of Agriculture RDBCP-11-REAP-RES-EEI-2020

Website: <https://www.govinfo.gov/content/pkg/FR-2019-08-30/pdf/2019-18825.pdf>

Brief Description: Eligible applicants are agricultural producers and rural small businesses. All agricultural producers, including farmers and ranchers, who gain 50% or more of their gross income from the agricultural operations are eligible. Small businesses that are located in a rural area can also apply. Rural electric cooperatives may also be eligible to apply. Additional Information on Eligibility: Citizenship - To be eligible, applicants must be individuals or entities at least 51 percent owned by persons who are either: 1) citizens of the United States (U.S.), the Republic of Palau, the Federated States of Micronesia, the Republic of the Marshall Islands, or American Samoa; or 2) legally admitted

permanent residents residing in the U.S. Project - The project must be to conduct a feasibility study for a renewable energy system. Eligible technologies include: projects that produce energy from wind, solar, biomass, geothermal, hydro power and hydrogen-based sources.

Awards: Up to \$500,000; Anticipated Funding: \$70 million

Submission Deadline: September 30, 2020

Contact: Technical Contact: Maureen Hessel, Energy Specialist, Phone 202-401-0142

Department of Labor

Grant Program: Apprenticeships: Closing the Skills Gap

Agency: Department of Labor FOA-ETA-19-09

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

Brief Description: Building on the experience abroad and in the United States, apprenticeships have emerged as a proven skills instruction model to meet industry's demand for a skilled American workforce. As the 21st economy requires greater skills development with an estimated 65 percent of all jobs requiring some post-secondary education by 2020,¹ apprenticeship programs can bolster the employability and technical skills of workers while meeting the workforce needs of business and industry.

There are more than 7.1 million job openings right now in the United States,³ many of which require a skilled workforce. These include in-demand cybersecurity professions and emerging occupations involving artificial intelligence (AI) across several industry sectors. Expanding apprenticeships can help individuals gain the skills necessary to fill these vacancies and help employers find skilled workers more readily. The period of performance is 48 months with an anticipated start date of February 1, 2020.

The purpose of this grant program is to promote apprenticeships as a significant workforce solution in filling current job vacancies and closing the skills gap between employer workforce needs and the skills of the current workforce. The overarching goals of this grant program are threefold: (1) to accelerate the expansion of apprenticeships to industry sectors and occupations that have not traditionally deployed apprenticeships for building a skilled workforce, such as cybersecurity, artificial intelligence, and health care; (2) to promote the large-scale expansion of apprenticeships across the nation to a range of employers, including small and medium-sized employers; and (3) to increase apprenticeship opportunities for all Americans. Recognizing that apprenticeship is a training strategy that operates on both the supply side and the demand side of the labor market, this grant program aims to increase both the number of apprenticeship positions and the ability of all Americans to gain access to this proven pathway to family-sustaining careers.

Awards: We will award up to \$100 million in H-1B funds initially to fund approximately 16 to 30 apprenticeship grants, with awards ranging from \$500,000 to \$6 million.

Anticipated Funding: \$100,000,000

Proposal Deadline: September 24, 2019 no later than 4:00:00 p.m. Eastern Time. Passed: FYI

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

EPA

Grant Program: FY 2020 – FY 2021 Source Reduction Assistance Grant Program

Agency: Environmental Protection Agency

Website: https://www.epa.gov/sites/production/files/2020-02/documents/general_sra_grant_guidance.pdf

Brief Description: EPA is announcing a grant competition to fund two-year Source Reduction Assistance (SRA) agreements that support research, investigation, study, demonstration, education and training using source reduction approaches (also known as “pollution prevention” and herein referred to as “P2”). P2 means reducing or eliminating pollutants from entering any waste stream or otherwise released into the environment prior to recycling, treatment, or disposal. EPA is particularly interested in receiving applications that offer hands on practical P2 tools, information and/or innovative P2 approaches to measurably improve the public health and the surrounding environment, by reducing the use of hazardous substances, reducing toxic pollutants, supporting efficiencies in reducing resource use (e.g., water and energy), and reducing business expenditures and liability costs.

Award: EPA plans to award a total of approximately \$1.3 million in federal SRA grant funding issued over a twoyear funding cycle (approximately \$658,000 in FY 2020 funds and approximately \$658,000 in FY 2021 funds).

Submission Deadline: April 30, 2020

Contact: Michele Amhaz, 202-564-8857 amhaz.michele@epa.gov

Grant Program: National Environmental Education and Training Program

Agency: Environmental Protection Agency EPA-OA-EE-20-11

Website: <https://www.epa.gov/education/national-environmental-education-and-training-program-solicitation-notice-2020-rfa>

Brief Description: The purpose of the National Environmental Education and Training Program is to deliver environmental education (EE) training and long-term support to education professionals across the U.S. in the development and delivery of environmental education and training programs and studies.

Award: Under this competition, one cooperative agreement is expected to be awarded to a U.S. institution of higher education, a not-for-profit institution or a consortium of such institutions. The total estimated funding for the first year of the award (FY 2020) is \$2,175,500. For planning purposes, funding for years two and three should be estimated to be \$2,175,500 per year, subject to the availability of funds and other applicable considerations.

Submission Deadline: The closing date and time for receipt of application submissions is May 29, 2020 by 11:59 pm Eastern Time (ET).

Contact: Ginger Potter U.S. Environmental Protection Agency WJ Clinton North, potter.ginger@epa.gov

Grant Program: Community-Scale Air Toxics Ambient Monitoring

Agency: Environmental Protection Agency EPA-OAR-OAQPS-20-05

Website: <https://www.epa.gov/grants/community-scale-air-toxics-ambient-monitoring>

Brief Description: EPA’s Office of Air and Radiation (OAR) is soliciting applications from eligible entities for projects designed to assist state, local, and tribal air agencies in identifying and characterizing air toxics, also known as hazardous air pollutants (HAPs), through work that falls into one of four categories. Those categories are: 1) characterizing the impacts of air toxics in a community (community-scale monitoring); 2) assessing impacts of toxics emissions from specific sources (near-source monitoring); 3) evaluating new and emerging testing methods for air toxics; and, 4) analyzing existing air toxics data and developing or enhancing analytical, modeling, and/or implementation tools. Air toxics of particular interest to EPA in this solicitation include ethylene oxide, chloroprene, benzene, 1,3-butadiene, and metals such as hexavalent chromium, nickel, and arsenic. The total estimated funding for this competitive opportunity is approximately \$5,000,000. EPA anticipates awarding approximately 10 to 20

assistance agreements from this announcement, subject to the availability of funds, the quality of applications received, and other applicable considerations.

EPA will hold two information sessions on the 2020 competition February 19 and 20, 2020. Information about the sessions is available on the [Community-Scale Air Toxics Ambient Monitoring](#) website.

Award: Up to \$750,000 per award; Anticipated available funding: \$5,000,000

Submission Deadline: March 30, 2020

Contact: Neelson Watkins, watkins.neelson@epa.gov

Department of Energy

Grant Program: Scientific Discovery through Advanced Computing (SciDAC) Institutes

Agency: Department of Energy DE-FOA-0002223

Website: https://science.osti.gov/-/media/grants/pdf/foas/2020/SC_FOA_0002223.pdf

Brief Description: This FOA announces the fourth recompetition of the SciDAC (SciDAC-5) Institutes. The mission of the SciDAC-5 Institutes is to provide intellectual resources in applied mathematics and computer science, expertise in algorithms and methods, and scientific software tools to advance scientific discovery, for the public benefit, in areas of strategic importance to SC and DOE.

Specific goals and objectives for the SciDAC-5 Institutes are to support, complement or develop:

- Mechanisms for engaging computational grand challenges across application areas within DOE's and SC's Congressionally-authorized mission-space. Currently, 30 SciDAC-4 Partnership projects are co-funded by ASCR and its partners (<https://www.scidac.gov/partnerships.html>). Funding opportunities for the SciDAC-5 Partnerships will be announced through several FOAs and Program Announcements starting in fiscal year 2021. These Announcements, issued by ASCR's SciDAC Partners, will include opportunities for linking applied mathematics and computer science research to sciencedomain specific challenges (see below Institutes' Connection with the Partnerships).
- Tools and resources for lowering the barriers to effectively use state-of-the-art computational systems such as those existing and planned for at the Oak Ridge and Argonne Leadership Computing Facilities (OLCF and ALCF), the National Energy Research Scientific Computing Center (NERSC), and similar world-class computing facilities over the next five (5) years.
- Mechanisms for incorporating and demonstrating the value of basic research results from ASCR investments. It is expected that the proposed Institutes will be structured around two main topics: Applied Mathematics and Computer Science, respectively.
- Plans for building up and engaging our Nation's computational science research communities.

Awards: The total budget of a collaboration may not be lower than \$3,000,000 per year or higher than \$8,000,000 per year per multi-institutional collaboration. A proposed collaboration with a total budget outside these limits may be declined without merit review

Submission Deadline for Letter of Intent: April 4, 2020 at 5:00 PM Eastern Time

Submission Deadline for Applications: May 12, 2020 at 5:00 PM Eastern Time

Contact: Dr. Ceren Susut 301-903-0366 Ceren.Susut-Bennett@science.doe.gov

Grant Program: Measurement Innovations for Fusion Energy and Plasmas

Agency: Department of Energy DE-FOA-0002280

Website: https://science.osti.gov/-/media/grants/pdf/foas/2020/SC_FOA_0002280.pdf

Brief Description: The DOE SC program in Fusion Energy Sciences (FES) hereby announces its interest in receiving new and renewal applications for awards in the area of Measurement Innovations for Fusion Energy and Plasmas. The FES program seeks to expand the fundamental understanding of matter at very high temperatures and densities and to foster the scientific foundation that will enable an eventual fusion

energy source. The FES Measurement Innovation program supports the development of novel and innovative diagnostic techniques and their application to new, unexplored, or unfamiliar plasma regimes or scenarios. Awards under this FOA will enable researchers to deploy diagnostics with the spatial, spectral, and temporal resolution necessary to validate plasma physics models that predict the behavior of fusion plasmas. These advanced diagnostic capabilities are then used at domestic and international facilities as part of FES's research subprograms in Burning Plasma Science: Foundation, Burning Plasma: Long Pulse; Discovery Plasma Science: Low Temperature Plasmas; and Discovery Plasma Science: High Energy Density Laboratory Plasma. Ongoing use of mature diagnostics systems is financially supported through the research programs at the FES user facilities and through support from the subprograms.

Awards: A total of \$3,000,000 in Fiscal Year 2020 appropriated funds will be used to support all years of all awards resulting from this FOA.

Submission Deadline for Pre-Applications: March 20, 2020 at 5:00 PM Eastern Time

Pre-Application Response Date: March 27, 2020

Submission Deadline for Applications: May 6, 2020 at 5:00 PM Eastern Time

Contact: Dr. Curtis W. Bolton, Fusion Energy Sciences 301-903-4914 Curt.Bolton@science.doe.gov

Grant Program: Opportunities in Frontier Plasma Science

Agency: Department of Energy DE-FOA-0002260

Website: https://science.osti.gov/-/media/grants/pdf/foas/2020/SC_FOA_0002260.pdf

Brief Description: The DOE SC program in Fusion Energy Sciences (FES) hereby announces its interest in receiving grant applications from U.S. researchers for carrying out frontier plasma science experiments. The FES General Plasma Science (GPS) program currently supports several collaborative research facilities and initiatives. These include the Large Plasma Device (LAPD) in the Basic Plasma Science Facility (BaPSF) at the University of California – Los Angeles, the DIII-D Frontier Science Initiative at General Atomics, the Big Red Ball (BRB) and Madison Symmetric Torus (MST) experiments at the Wisconsin Plasma Physics Laboratory (WiPPPL) at the University of Wisconsin – Madison, the Magnetized Dusty Plasma Experiment (MDPX) at the Magnetized Plasma Research Laboratory (MPRL) at Auburn University, the low-temperature Plasma Research Facility (PRF) at Sandia National Laboratories, and the Princeton Collaborative Research Facility (PCRF) at the Princeton Plasma Physics Laboratory. Interested U.S. researchers or principal investigators (PIs) must have already responded to the separate call for proposals from one or more of these facilities and initiatives and been allocated experimental runtime to carry out the experiments.

Awards: A total of \$10,000,000 in current and anticipated future fiscal year funding will be used to support awards under this FOA

Letter of Intent: April 6, 2020 at 5:00 PM Eastern Time

Proposal Submission Deadline: May 8, 2020 at 5:00 PM Eastern Time

Contact: Office of Fusion Energy Sciences; Dr. Nirmol Podder 301-903-9536
Nirmol.Podder@science.doe.gov

Grant Program: Scientific Discovery through Advanced Computing: Scientific Machine Learning and Artificial Intelligence for Fusion Energy Sciences

Agency: Department of Energy DE-FOA-0002224

Website: <https://science.osti.gov/grants/lab-announcements/open>

Brief Description: The DOE SC program in Fusion Energy Sciences (FES), and Advanced Scientific Computing Research (ASCR) invite applications under the Scientific Discovery through Advanced Computing (SciDAC) program in the area of Scientific Machine Learning and Artificial Intelligence for

Fusion Energy Science. The goal of this announcement is to support research aiming to sustain and enhance the leadership position of the United States in Artificial Intelligence while addressing high-priority research opportunities identified in recent fusion community studies.

The FES mission is to expand the fundamental understanding of matter at very high temperatures and densities and to build the scientific foundations needed to develop a fusion energy source. This is accomplished through the study of plasma, the fourth state of matter, and how it interacts with its surroundings. High-performance computing (HPC) has been a traditional hallmark of the FES program, representing a world-leading U.S. strength and one of its competitive advantages. Its transformative potential was recognized in the recent FES decadal strategic directions report² where “massively parallel computing with the goal of validated whole-fusion-device modeling” was among the key areas of emphasis. FES partners with the ASCR program in order to dramatically accelerate progress in computing and simulation in the area of fusion energy.

Recognizing the potential of ML/AI and data science more broadly, FES and ASCR cosponsored a community workshop to identify areas in fusion science where application of ML and AI can have transformative impacts, and to identify unique needs, research opportunities, and associated gaps in ML and AI that can be addressed through targeted partnerships. The final report⁴ identifies several high-level priority research opportunities that span DOE’s Congressionally-authorized mission-space in fusion energy sciences.

Awards: Various; Estimated Total Program Funding: \$8,000,000

Letter of Intent: 03/30/2020 at 5:00 PM Eastern Time

Proposal Submission Deadline: 04/30/2020 at 5:00 PM Eastern Time

Contact: Dr. John Mandrekas, (301) 903-0552 John.Mandrekas@science.doe.gov

NASA

Grant Program: ROSES 2020: Heliophysics Supporting Research

Agency: NASA NNH20ZDA001N-HSR

Website: <https://nspires.nasaprs.com/external/solicitations/summary.do?solId=%7BBA3F017B-32B1-74F1-3DC5-0DC78AA76DB9%7D&path=&method=init>

Brief Description: Heliophysics Supporting Research (SR) awards are research investigations of significant magnitude that employ a combination of scientific techniques. These must include an element of (a) theory, numerical simulation, or modeling, and an element of (b) data analysis and interpretation of NASA-spacecraft observations. HSR is a component of the Heliophysics Research Program and proposers interested in this program element are encouraged to see B.1, The Heliophysics Research Program Overview for Heliophysics-specific requirements. Common requirements for all ROSES elements and proposals are found in the ROSES Summary of Solicitation and the Proposer's Guidebook and the order of precedence for proposers.

Awards: Various; Available funding: \$6,500,000

Notices of Intent Due: N/A

Proposal Deadline: November 18, 2020

Contact: Patrick Koehn; Email: patrick.koehn@nasa.gov

Grant Program: ROSES 2020: Astrophysics Data Analysis

Agency: NASA NNH20ZDA001N-ADAP

Website: <https://nspires.nasaprs.com/external/solicitations/summary.do?solId=%7BEC4AFCE9-78E3-7164-00DC-5D3E325B4EA1%7D&path=&method=init>

Brief Description: Over the years, NASA has invested heavily in the development and execution of an extensive array of space astrophysics missions. The magnitude and scope of the archival data from those missions enables science that transcends traditional wavelength regimes and allows researchers to answer questions that would be difficult, if not impossible, to address through an individual observing program. To capitalize on this invaluable asset and enhance the scientific return on NASA mission investments, this Astrophysics Data Analysis Program (ADAP) program in ROSES provides support for investigations whose focus is on the analysis of archival data from NASA space astrophysics missions.

Awards: Various; Available funding: \$7,000,000

Notices of Intent Due: N/S

Proposal Deadline: March 19, 2020

Contact: Douglas M. Hudgins; Email: Douglas.M.Hudgins@nasa.gov

Grant Program: HELIOPHYSICS - Early Career Investigator Program

Agency: NASA NNH20ZDA001N-ECIP

Website: <https://nspires.nasaprs.com/external/solicitations/summary.do?solId=%7BBC6756FD-561A-7A1-F68A-2A18E6851701%7D&path=&method=init>

Brief Description: The Early Career Investigator Program (ECIP) in Heliophysics is designed to support outstanding scientific research and career development of scientists at the early stage of their professional careers. The program aims to encourage innovative research initiatives and cultivate diverse scientific leadership in Heliophysics. This program is designed to foster the empowerment, inspiration, and education of the next generation of space researchers, as part of the E of the DRIVE (Diversify, Realize, Integrate, Venture, Educate) initiative put forward as a high priority recommendation of the 2013 Solar and Space Physics Decadal Survey.

Awards: Various, Available funding: \$1,500,000

Notices of Intent Due: N/A

Proposal Deadline: August 12, 2020

Contact: Katya Verner, Telephone: 202-358-1213 Email: Ekaterina.M.Verner@nasa.gov

Grant Program: ROSES 2020: Astrophysics Research and Analysis

Agency: NASA NNH20ZDA001N-APRA

Website: <https://nspires.nasaprs.com/external/solicitations/summary.do?solId=%7BD4C56B9D-7FF4-D128-D82D-6BB8F4306D00%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

Notices of Intent Due: N/A

Proposal Deadline: December 17, 2020

Contact: Dominic J. Benford Astrophysics Division, (202) 358-1261 Dominic.Benford@nasa.gov

National Endowment of Humanities

Grant Program: Research and Development

Agency: National Endowment for the Humanities 20200515-PR

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

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

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

Research and Development supports work on the entire range of humanities collection types including, but not limited to, moving image and sound recordings, archaeological artifacts, born digital and time-based media, rare books and manuscripts, material culture, and art. Applicants must demonstrate how advances in preservation and access through a Research and Development project would benefit the cultural heritage community by supporting humanities research, teaching, or public programming.

Awards: Tier I provides awards up to \$75,000

Tier II provides awards up to \$350,000

Deadlines:

Optional Draft due: April 10, 2020

Application due: May 15, 2020

Contact: Contact the Division of Research Programs Team 202-606-8200 fellowships@neh.gov

Grant Program: Fellowships

Agency: National Endowment for the Humanities 20200408-FEL

Website: <https://www.neh.gov/grants/research/fellowships>

Brief Description: NEH Fellowships are competitive awards granted to individual scholars pursuing projects that embody exceptional research, rigorous analysis, and clear writing. Applications must clearly articulate a project's value to humanities scholars, general audiences, or both.

Fellowships provide recipients time to conduct research or to produce books, monographs, peer-reviewed articles, e-books, digital materials, translations with annotations or a critical apparatus, or critical editions resulting from previous research. Projects may be at any stage of development.

NEH invites research applications from scholars in all disciplines, and it encourages submissions from independent scholars and junior scholars.

Awards: Maximum award amount: \$60,000

Deadlines: April 8, 2020

Contact: Contact the Division of Research Programs Team 202-606-8200 fellowships@neh.gov

Michael J. Fox Foundation

Grant Program: Parkinson's Research

Agency: Michael J. Fox Foundation

Website: https://www.michaeljfox.org/funding-opportunities?em_cid=mc-a1b1R000008uKNC&et_cid=1527395&et_rid=224986205&et_lid=https%3a%2f%2fwww.michaeljfox.org%2ffunding-opportunities%3fem_cid%3dmc-a1b1R000008uKNC&em_cid=

Brief Description: Open RFAs

- [Investigating Environmental Factors that Increase the Risk for Parkinson's Disease](#): Funds use of existing datasets to identify and/or quantify environmental exposures that influence Parkinson's risk or progression.
- [Target Advancement Program](#): Funds research to validate targets and define pathways implicated in Parkinson's pathological processes and/or symptomology.
- [Parkinson's Pathway Biomarkers](#): Funds research aimed at (1) developing sensitive readouts for pathway activation/dysfunction and (2) improving technologies for analyzing the target/pathway of interest.
- [Therapeutic Pipeline Program](#): Funds novel or repositioned, pre-clinical and clinical therapeutic intervention development for Parkinson's. Specific interest in (1) developing therapeutics for non-motor symptoms and (2) early drug discovery for novel targets with few or no candidates in development.

Informational Webinar: Attend our webinar on March 27, 2020, at 12 p.m. ET to learn more about our Foundation's funding strategy and opportunities, and the application and review processes. [Register Now](#).

Awards: Various; Up to \$400,000 for up to two years

Pre-Proposal Dedaline: April 23, 2020

Contact: Please contact Richard Rosenberg at rnr@njit.edu if you are interested in submitting a proposal.

Streamlyne Question of the Week

Question: **How do I enter a cost share? For my salary? For other personnel and expenses?**

Answer: Cost Share for personnel other than faculty is very similar to release time –

- add the person under Key personnel
- select the period (start and end dates) that the staff/admin will be devoted to the project
- select percentage.

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