

NJIT Research Newsletter

Issue: ORN-2018-18

NJIT Research Newsletter includes recent awards, and announcements of research related seminars, webinars, national and federal research news related to research funding, and **Grant Opportunity Alerts**. The Newsletter is posted on the NJIT Research Website <http://www.njit.edu/research/>.

Grant Opportunity Alerts: Keyword Index: Page 1

Special Announcement: Page 2

Recent Awards: Page 3

In the News (Related to research funding): Page 3

Webinars and Events: Page 5

Grant Opportunities: Page 7

Streamlyne Question of the Week: Page 32

Streamlyne Update: Page 32

Grant Opportunity Alerts

Keywords and Areas Included in the Grant Opportunity Alert Section Below

NSF: Smart and Autonomous Systems (S&AS); NSF/FDA Scholar-in-Residence at FDA; Centers for Chemical Innovation (CCI); STEM + Computing K-12 Education (STEM+C); Accelerating Discovery: Educating the Future STEM Workforce (AD); Dear Colleague Letter: Advancing Long-term Reuse of Scientific Data

NIH: BRAIN Initiative: Development and Validation of Novel Tools to Probe Cell-Specific and Circuit-Specific Processes in the Brain (R01); NIH Director's Pioneer Award (DP1); BRAIN Initiative: Targeted BRAIN Circuits Projects- TargetedBCP (R01); NIH Director's Early Independence Award (DP5); International Bioethics Research Training Program (D43); BRAIN Initiative: New Technologies and Novel Approaches for Large-Scale Recording and Modulation in the Nervous System (R01)

Department of Defense/US Army/DARPA/ONR: U.S. Army Research Institute for the Behavioral and Social Sciences Broad Agency Announcement for Basic, Applied, and Advanced Research; DoD Peer Reviewed Medical Research Program (PRMRP) Investigator-Initiated Research Award; Computers and Humans Exploring Software Security (CHESS); Proof of Concept Commercialization Pilot Program Innovation Corps @ Department of Defense (I-Corps @ DoD); 2019 Department of Defense Multidisciplinary Research Program of the University Research Initiative (MURI); 2019 DEFENSE UNIVERSITY RESEARCH INSTRUMENTATION PROGRAM (DURIP); Air Force Fiscal Year 2019 Young Investigator Research Program (YIP)

Department of Education: Education Innovation and Research Program: Early-phase Grants

Department of Energy: Building America Industry Partnerships and Research Priorities for High Performance Housing Innovation – 2018; Solid-State Lighting Advanced Technology Research and Development

NASA: ROSES 2018: Heliophysics Space Weather Operations to Research; Early Stage Innovation (ESI); Astrophysics Data Analysis; Advanced Information Systems Technology
National Endowment of Humanities: Research and Development; Digital Humanities Advancement
National Institute for Health Care Management Foundation: Research Grants
The Michael J. Fox Foundation: Grant Program: Non-Pharmacological Interventions for the Treatment of Gait and Balance Disturbances
American Diabetes Association: Pathway Program

Special Announcement

Revised Common Rule **for** **Biomedical and Behavioral Research Involving Human Subjects**

The **Common Rule** is a 1981 **rule** of ethics in the United States regarding biomedical and behavioral research involving human subjects. The U.S. Department of Health and Human Services and fifteen other Federal Departments and Agencies have issued final revisions to the Federal Policy for the Protection of Human Subjects (the Common Rule). The Final Rule was published in the Federal Register on January 19, 2017. It implements new steps to better protect human subjects involved in research, while facilitating valuable research and reducing burden, delay, and ambiguity for investigators. The effective date of the revised Common Rule is **July 19, 2018**.

What are the changes?

- Requirement for consent forms – The consent form should provide research subjects with a clear project’s scope including risks and benefits. As a result participants can make a more fully informed decision on their participation
- Requirements, in many cases, to use a single institutional review board (IRB) for multi-institutional research studies.
- For studies on stored identifiable data or identifiable biospecimens, researchers will have the option of relying on broad consent obtained for future research as an alternative to seeking IRB approval to waive the consent requirement. As under the current rule, researchers will still not have to obtain consent for studies on non-identified stored data or biospecimens.
- The establishment of new exempt categories of research based on the level of risk they pose to participants.
- Removal of the requirement to conduct continuing review of ongoing research studies in certain instances where such review does little to protect subjects.
- Requirement that consent forms for certain federally funded clinical trials be posted on a public website.

For more information please go to:

<https://www.hhs.gov/ohrp/regulations-and-policy/regulations/finalized-revisions-common-rule/index.html>

https://regionalseminars.od.nih.gov/neworleans2017/wp-content/uploads/2017/04/Overview_of_Common_Rule-May_2017.pdf

Recent Research Grant and Contract Awards

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

PI: Chang Liu (PI) and Haimin Wang (Co-PI)

Department: Center for Solar Terrestrial Research

Grant/Contract Project Title: Study of Structural Properties of Core and Strapping Fields in Relation to Confined and Ejective Solar Eruptions

Funding Agency: NASA

Duration: 04/01/18-03/31/21

PI: Haimin Wang (PI), Chang Liu (Co-PI) and Vasyl Yurchyshyn

Department: Center for Solar Terrestrial Research

Grant/Contract Project Title: Study of Structural Properties of Core and Strapping Fields in Relation to Confined and Ejective Solar Eruptions

Funding Agency: NASA

Duration: 06/23/17-06/22/20

PI: Zoi-Heleni Michalopoulou (PI)

Department: Mathematical Sciences

Grant/Contract Project Title: Geoacoustic Inversion in Shallow Water

Funding Agency: ONR

Duration: 03/01/18-02/28/21

In the News...

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

Appropriators Boost NSF, NASA; Cut NIST: The appropriations subcommittee responsible for funding the National Science Foundation, NASA, and the National Institute of Standards and Technology calls for NSF to get \$8.17 billion in FY 2019, \$408 million above the FY 2018 omnibus level; NASA to receive \$21.5 billion, an increase of \$810 million; and NIST to get \$985 million, a reduction of \$214 million.

- **NSF** would be funded at **\$8.17 billion**, \$408 million above the FY 2018 omnibus level. The Research and Related Activities (R&RA) account would be funded at \$6.6 billion, \$317 million above the FY 2018 level while EHR would be flat funded at \$902 million. The bill summary states, “These funds will foster innovation and U.S. economic competitiveness, including funding for research on advanced manufacturing, physics, mathematics, cybersecurity, neuroscience, and STEM education.” Of note, the Major Research Equipment and Facilities Construction Account would be funded at \$268 million, \$85 million above the FY 2018 level and \$173 million above the FY 2019 request. It is not yet clear how the additional funds would be allocated.
- **NASA** would receive **\$21.5 billion**, an increase of \$810 million or 3.9 percent above the FY 2018 enacted level and \$1.6 billion or 8 percent above the Administration’s FY 2019 request. Within this amount, the Science Mission Directorate would receive \$6.68 billion, an increase of \$459 million and 7.4 percent above FY 2018. The bill would also embrace the

Administration's proposed elimination of the Space Technology Mission Directorate and endorse the proposed restructure and reorientation of agency-wide technology activities towards solely human spaceflight endeavors.

- **NOAA** would be provided with **\$5.2 billion** for FY 2019, a \$751 million decrease compared to the FY 2018 enacted level of \$5.9 billion. The bulk of the reduction would impact the Procurement, Acquisition and Construction (PAC) accounts. Subcommittee Democrats also expressed concern over proposed deep cuts to climate science programs within the agency.
- **NIST** would be funded at **\$985 million**, a reduction of \$214 million compared to the FY 2018 omnibus level. Core research activities would be funded at \$720 million a slight reduction of 0.6 percent from FY 2018. The Manufacturing Extension Partnerships program would be funded at \$140 million, level with FY 2018, and the Manufacturing USA program would be funded at \$5 million, a reduction of \$10 million from the FY 2018 level.

AI Engages WHITE HOUSE: Raising its profile on a science topic, the Trump administration [hosted a forum](#) this week seeking "ways to reduce barriers to innovation, improve R&D collaboration among America's allies, and promote public awareness and understanding of AI technologies." Wired [magazine reports](#) that the exercise "comes in the wake of major strategy announcements on AI from China, France, the UK, and the European Union. All have pledged significant new funding for AI research, and spoken of the importance of engaging with ethical challenges such as lost jobs, and systems that pick up unsavory values." On the occasion of the forum, the [National Science Foundation noted](#) that it spends over \$100 million annually to support AI research, adding: "To stay competitive, all companies will, to some extent, have to become AI companies." More information is posted on the website <https://www.wired.com/story/trump-administration-plays-catch-up-artificial-intelligence/>

NSF-AIR FORCE Collaboration: National Science Foundation Director France Córdova and Air Force Secretary Heather Wilson will sign a letter of intent next week "to create a new partnership for collaboration on scientific research to bolster national security." NSF says "The partnership will foster an increased exchange of research information, support expanded collaboration in common research areas, and identify opportunities for complementary activities in 'research pathways' comprising basic research, applied research, and advanced technology development. The partnership will also facilitate long-term planning of each organization's research strategy, and sharing of best practices for portfolio shaping and science, technology, engineering, and mathematics (STEM) workforce development."

NIH's Neurological Disorders and Stroke (NINDS) to Limit Grants to Well-Funded Labs: The National Institutes of Health's neurological institute "plans to pare back the number of investigators it supports who have \$1 million or more in NIH grants," [Science reports](#). "The policy 'will allow us to fund more early stage investigators and help people who just missed the pay line [funding cutoff] and are about to drop off the radar screen,' says Robert Finkelstein, extramural research director at the \$2.1 billion National Institute of Neurological Disorders and Stroke (NINDS)." More information is posted on the website <http://www.sciencemag.org/news/2018/05/nih-s-neuroscience-institute-will-limit-grants-well-funded-labs>

I-CORPS Expansion Clears House: The [Innovators to Entrepreneurs Act](#), passed 379 - 16, directs the National Science Foundation to develop a course to help researchers-turned-entrepreneurs attract investors, scale up a company, and build a brand. The course is intended for those who have already participated in I-Corps and whose innovations are ready to be commercialized. It would be offered by I-

Corps' regional nodes. More information about the Innovators to Entrepreneurs Act of 2018 is available on the website <https://www.congress.gov/bill/115th-congress/house-bill/5086/text>

R&D Provisions in FAA Bill: The reauthorization measure, which passed the House overwhelmingly, would provide up to \$181 million as part of its FAA Leadership in Groundbreaking High-Tech Research and Development title, including \$128.5 million for safety R&D. The bill also includes a "sense of Congress" that "public and private education institutions should partner with aviation and aerospace companies to promote career paths available within the industry . . . (and the) Federal Government should consider the needs of men and women interested in pursuing careers in the aviation and aerospace industry, the long-term personnel needs of the aviation and aerospace industry, and the role of aviation in the United States economy in the creation and administration of educational and financial aid programs."

Webinar and Events

Event: 2018 CAREER Program Webinar

Sponsor: NSF

When: May 15, 2018 from 1.00 PM to 3.00 PM

Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=244740&org=NSF

Brief Description: The NSF CAREER Coordinating Committee hosts a webinar to answer participants' questions about development and submission of proposals to the NSF Faculty Early Career Development Program ([CAREER](#)). The webinar will give participants the opportunity to interact with members of the NSF-wide CAREER Coordinating Committee in a question-and-answer format.

In preparation for the webinar, participants are strongly encouraged to consult material available on-line concerning the CAREER program. In particular, the CAREER program [web page](#) has a wealth of current information about the program, including:

- the CAREER program solicitation [NSF 17-537](#);
- [frequently asked questions](#) about the CAREER program; and
- slides from a CAREER program overview.

Additionally, there is a video of a live presentation about the CAREER program accessible through the library of videos from a recent [NSF Grants Conference](#).

How to Submit Questions

Participants may submit questions about CAREER proposal development and submission in advance of the webinar by sending e-mail to: careerwebinarqs@nsf.gov Questions received by May 11, 2018 will be considered for inclusion in the webinar.

Please note that questions regarding eligibility for the CAREER program in any individual case will not be addressed during the webinar. Questions about the CAREER program that are not covered during the webinar should be directed to the appropriate NSF Divisional contact shown on the web page <http://www.nsf.gov/crssprgm/career/contacts.jsp>

Registration: Participants should register in advance at the web page <https://nsf.webex.com/nsf/onstage/g.php?MTID=e1dd0a274fcc95e58f42bc7d3490834b4>.

Event: Science Impact of Sustained Cyberinfrastructure: The Pegasus Example

Sponsor: NSF

When: May 17, 2018 from 2.00 PM to 3.00 PM

Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=245398&org=NSF

Brief Description: The recent multi-messenger observation triggered by LIGO and VIRGO's first detection of gravitational waves produced by colliding neutron stars is a clear display of the increasing impact of dependable research cyberinfrastructure (CI) on scientific discovery. Today's cyberinfrastructure—hardware, software, and workforce—underpins the entire scientific workflow, from data collection at instruments, through complex analysis, to simulation, visualization, and analytics. Besides supporting large facilities such as LIGO, it also provides the educational and research platform for numerous projects, individual researchers and students.

The effort to develop, sustain, and maintain dependable CI is thus a key element in the modern scientific ecosystem. However, it is not developed in vacuum; rather, it benefits from advances in Computer Science and provides a unique laboratory for Computer Science research. Grounded in the challenging and ever-increasing needs of a multitude of scientific applications, it is continuously enhanced and driven to innovate.

The Pegasus project is an example of a cyberinfrastructure effort that enables LIGO and other communities to accomplish their scientific goals. It delivers robust automation capabilities to researchers at the Southern California Earthquake Center (SCEC) studying seismic phenomena, to astronomers seeking to understand the structure of the universe, to material scientists developing new drug delivery methods, and to students seeking to understand human population migration. An example of societal impact is SCEC's use of Pegasus to generate the world's first physics-based probabilistic seismic hazard map that provides insight into why earthquakes in the Los Angeles basin can be so destructive. This information can inform civil engineering practices in the area. This talk describes the challenges of developing and sustaining cyberinfrastructure capabilities that have impact on scientific discovery and that innovate in the changing cyberinfrastructure landscape.

Registration: Participants should register in advance at the web page

<https://nsf.webex.com/nsf/onstage/g.php?MTID=e1dd0a274fcc95e58f42bc7d3490834b4>.

Event: Math Frontiers Monthly Webinar Series

Sponsor: National Academies

When: June 12, 2018 from 2.00 PM

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

Brief Description: Join the National Academies of Sciences, Engineering, and Medicine for a webinar series on exciting and upcoming mathematics research across an array of topics. Webinars will take place on the **second Tuesday of each month from 2-3 p.m. ET**, with two speakers and live Q&A. See below for the list of dates and themes for each webinar. *When registering, please make sure you select all the webinars you would like to attend.* You will only receive reminder emails and login instructions for webinars you have registered for.

As each webinar approaches, we will post more information about the speakers on the webinar series page at nas.edu/mathfrontiers.

June 12, 2018: Number Theory: The Riemann Hypothesis

Professors [Ken Ono](#) and [Terence Tao](#) will speak on the importance and recent advances on the Riemann Hypothesis, one of the most famous unsolved problems in algebra and number theory.

July 10, 2018: Topology

Professors [Jeffrey F. Brock](#) and [John Morgan](#) will discuss applications of topology—the mathematical study of how object properties are impacted by deformations—to fields such as data analytics, tumor identification, and robotics.

August 14, 2018: Algorithms for Threat Detection

Professor [Andrea Bertozzi](#) and others will discuss applications of mathematics to spatiotemporal data analytics as a way to discover and mitigate national security threats.

September 11, 2018: *Mathematical Analysis*

Professor [Dimitri Shlyakhtenko](#) and others will discuss mathematical analysis—the study of functions and their limits. Application areas include computational fluid dynamics and astronomy.

October 9, 2018: *Combinatorics*

Invited speakers will discuss the mathematical study of discrete structures and their properties focusing on some of the modern techniques in the area including the probabilistic method. Application areas include information theory, statistical physics, molecular biology and computer science.

November 13, 2018: *Why Machine Learning Works*

Invited speakers will discuss the mathematics behind machine learning and how they enable predictive analyses.

December 11, 2018: *Mathematics of Epidemics*

Professors [Calistus Ngonghala](#) and [Folashade B. Augusto](#) will discuss mathematical approaches to studying biology, including ecology and infectious disease.

To join the webinar: Please register at http://sites.nationalacademies.org/deps/bmsa/deps_183972

Grant Opportunities

National Science Foundation

Grant Program: Smart and Autonomous Systems (S&AS)

Agency: National Science Foundation NSF 18-557

RFP Website: <https://www.nsf.gov/pubs/2018/nsf18557/nsf18557.htm>

Brief Description: The **Smart and Autonomous Systems (S&AS)** program focuses on **Intelligent Physical Systems (IPS)** that are capable of robust, long-term autonomy requiring minimal or no human operator intervention in the face of uncertain, unanticipated, and dynamically changing situations. IPS are systems that combine perception, cognition, communication, and actuation to operate in the physical world. Examples include, but are not limited to, robotic platforms, self-driving vehicles, underwater exploration vehicles, and smart grids. Most current IPS operate in pre-programmed ways and in a limited variety of contexts. They are largely incapable of handling novel situations, or of even understanding when they are outside their areas of expertise. To achieve robust, long-term autonomy, however, future IPS need to be aware of their capabilities and limitations and to adapt their behaviors to compensate for limitations and/or changing conditions.

To foster such intelligent systems, the S&AS program supports research in four main aspects of IPS: **cognizant**, **taskable**, **adaptive**, and **ethical**. *Cognizant* IPS exhibit high-level awareness of their own capabilities and limitations, anticipating potential failures and re-planning accordingly. *Taskable* IPS can interpret high-level, possibly vague, instructions, planning out and executing concrete actions that are dependent on the particular context in which the system is operating. *Adaptive* IPS can change their behaviors over time, learning from their own experiences and those of other entities, such as other IPS or humans, and from instruction or observation. *Ethical* IPS should adhere to a system of societal and legal rules, taking those rules into account when making decisions. Each of these research areas requires the IPS to be **knowledge-rich**, employing a variety of representation and reasoning mechanisms, such as semantic, probabilistic, commonsense, and meta-reasoning.

Awards: Standard grants; **Anticipated Funding Amount:** \$12,000,000

Letter of Intent: Not Required

Full Proposal Submission Deadline: July 31, 2018

Contacts: Reid Simmons, Program Director, CISE/IIS, telephone: (703) 292-4767, email: resimmon@nsf.gov

Grant Program: NSF/FDA Scholar-in-Residence at FDA**Agency: National Science Foundation NSF 18-556****RFP Website:** <https://www.nsf.gov/pubs/2018/nsf18556/nsf18556.htm>

Brief Description: The National Science Foundation (NSF), through the Directorate for Engineering, the Directorate of Computer and Information Science and Engineering Division of Computer and Network Systems, and the Directorate for Mathematical and Physical Sciences Division of Materials Research, along with the U.S. Food and Drug Administration (FDA), through its Center for Devices and Radiological Health (CDRH), have established the NSF/FDA Scholar-in-Residence Program at FDA. This program comprises an interagency partnership for the investigation of scientific and engineering issues concerning emerging trends in medical device technology. This partnership is designed to enable investigators in science, engineering, and computer science to develop research collaborations within the intramural research environment at the FDA. This solicitation features three flexible mechanisms for support of research at the FDA: 1) Principal Investigators at FDA; 2) Postdoctoral Researchers at FDA; and 3) Graduate Students at FDA.

Awards: Standard grants; **Anticipated Funding Amount:** \$750,000**Letter of Intent:** Not Required**Full Proposal Submission Deadline:** Proposals Accepted Anytime**Contacts:** Leon Esterowitz, Program Director, NSF, ENG/CBET, telephone: (703) 292-7942, email: lesterow@nsf.gov

- Dinesh V. Patwardhan, Associate Director, Office of Science and Engineering Laboratories, Center for Devices and Radiological Health, FDA, FDA/CDRH, telephone: (301) 796-2622, email: nsf.sir@fda.hhs.gov

Grant Program: Centers for Chemical Innovation (CCI)**Agency: National Science Foundation NSF 18-555****RFP Website:** <https://www.nsf.gov/pubs/2018/nsf18555/nsf18555.htm>

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

The FY 2019 Phase I CCI competition is open to projects in all fields supported by the Division of Chemistry, and must have scientific focus and the potential for transformative impact in chemistry. *NSF Chemistry particularly encourages fundamental chemistry projects related to one or more of NSF's [10 Big Ideas](#).*

The CCI Program is a two-phase program. Both phases are described in this solicitation. Phase I CCIs receive significant resources to develop the science, management and broader impacts of a major research center before requesting Phase II funding. Satisfactory progress in Phase I is required for Phase II applications; Phase I proposals funded in FY 2019 will seek Phase II funding in FY 2022. This solicitation also covers the renewal application of the Phase II CCI initiated in FY 2014: the Center for Sustainable Polymers, led by the University of Minnesota.

Awards: Standard grants; **Anticipated Funding Amount:** \$9,400,000**Letter of Intent:** Not Required**Full Proposal Submission Deadline:** July 2, 2018**Contacts:** Katharine J. Covert, E 9332, telephone: (703) 292-4950, email: kcovert@nsf.gov

- Lin He, E 9329, telephone: (703) 292-4956, email: lhe@nsf.gov

Grant Program: STEM + Computing K-12 Education (STEM+C)**Agency: National Science Foundation NSF PD 18-005Y****RFP Website:**https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505006&org=NSF&sel_org=NSF&from=fund

Brief Description: An innovative science, technology, engineering, mathematics and computing (STEM+C) workforce and well-educated citizenry are crucial to the Nation's prosperity, security and competitiveness. Preparation for the future workforce must begin in the earliest grades from preK-12, where students need to learn not only the science and mathematics central to these areas, but also how computational thinking is integral to STEM disciplines. Because of the powerful innovation and application of computing in STEM disciplines there is an urgent need for real-world, interdisciplinary, and computational preparation of students from the early grades through high school (preK-12) that will provide a strong foundation for mid-level technical careers and for continuing education in higher education. This is particularly important in the key science areas described in the National Science Foundation's [Big Ideas for Future NSF Investment](#). The STEM+C program supports research and development proposals related to new approaches to pre-K-12 STEM teaching and learning related to Harnessing the Data Revolution, Convergence Research and the Future of Work at the Human-Technology Frontier.

The STEM+C Program focuses on research and development of interdisciplinary and transdisciplinary approaches to the integration of computing within STEM teaching and learning for preK-12 students in both formal and informal settings. The STEM+C program supports research on how students learn to think computationally to solve interdisciplinary problems in science and mathematics. The program supports research and development that builds on evidence-based teacher preparation or professional development activities that enable teachers to provide excellent instruction on the integration of computation and STEM disciplines. Proposals should describe projects that are grounded in prior evidence and theory, are innovative or potentially transformative, and that will generate and build knowledge about the integration of computing and one or more STEM disciplines at the preK-12 level.

A proposal submitted to this program description should describe the integration of computing with one or more STEM disciplines. A proposal may focus on studies on the effects of integrating computational thinking with STEM disciplines or the challenges of implementing these potentially disruptive educational interventions. Proposed projects may develop models, assessments, and technological tools to support teaching and learning in this area as well as conduct research on these models, assessments, and tools.

Awards: Standard grants**Letter of Intent:** Not Required**Full Proposal Submission Deadline:** July 2, 2018**Contacts:** Arlene M. de Strulle adestrul@nsf.gov (703) 292-8620Chia Shen cshen@nsf.gov (703) 292-8447

Grant Program: Accelerating Discovery: Educating the Future STEM Workforce (AD)**Agency: National Science Foundation NSF PD 18-1998****RFP Website:**https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505552&org=NSF&sel_org=NSF&from=fund

Brief Description: A well-prepared, innovative science, technology, engineering, and mathematics (STEM) workforce is crucial to the Nation's prosperity and security. Future generations of STEM professionals are a key sector of this workforce, especially in the critical scientific areas described in the [Big Ideas for Future NSF Investments](#). To accelerate progress in these areas, the next generation of

STEM professionals will need to master new knowledge and skills, collaborate across disciplines, and shape the future of the human-technology interface in the workplace. As a result, NSF recognizes the need to support development of and research on effective educational approaches that can position the future STEM workforce to make bold advances in these Big Ideas.

In response to this need, the NSF's Education and Human Resources Directorate seeks to invest in projects that can educate the STEM workforce to advance discovery in the six research Big Ideas: Harnessing the Data Revolution; The Future of Work; Navigating the New Arctic; Multi-messenger Astrophysics; The Quantum Leap; and Understanding the Rules of Life. In addition to developing and implementing novel educational and/or training programs, these projects should simultaneously generate new knowledge about effective STEM education, by studying such programs and exploring related issues.

Specifically, NSF accepts proposals to support education research and development projects focused on re- or up-skilling the existing workforce; developing the skilled technical workforce; and/or preparing those at the undergraduate, graduate, or postdoctoral fellow/early career levels. We encourage projects to partner with industry, public, and private sectors to define the needs of tomorrow's workforce and develop educational and learning strategies to meet those needs. Proposals should address near-, mid-, and long-term challenges and opportunities facing the development of STEM professionals or anticipate new structures and functions of the STEM learning and teaching enterprise. Proposers are encouraged to include approaches that have the potential to increase and diversify participation in STEM. All proposals should contribute to one or more of the six research Big Ideas.

EHR is particularly interested in supporting innovative education research and development in two Big Ideas: [The Future of Work at the Human-Technology Frontier](#) (FW-HTF) and [Harnessing the Data Revolution for 21st Century Science and Engineering](#) (HDR). Projects of interest include: innovative uses of technology and big data to understand learning; educational approaches that prepare tomorrow's innovators to use technology and big data to understand the natural world; effects of advances in intelligent agents on STEM teaching and learning; and evaluation of disruptive educational interventions on long-term student outcomes.

Outcomes of these projects can enable the Nation to: better prepare its scientific and technical workforce for the future; use technological innovations effectively for education; and advance the frontiers of science. Proposals should describe projects that build on available evidence and theory, and that will generate evidence and build knowledge, while contributing to the education of the future STEM professionals.

Awards: Standard grants

Letter of Intent: Not Required

Full Proposal Submission Deadline: July 2, 2018; Window: April 2, 2018 - January 16, 2019

Contacts: Ellen Carpenter elcarpen@nsf.gov (703) 292-5104

Laura B. Regassa lregassa@nsf.gov (703) 292-2343

Grant Program: Dear Colleague Letter: Advancing Long-term Reuse of Scientific Data

Agency: National Science Foundation NSF 18-060

RFP Website: https://www.nsf.gov/pubs/2018/nsf18060/nsf18060.jsp?WT.mc_id=USNSF_179

Brief Description: NSF supports fundamental research grants that result in publications, primary data, samples, physical collections and other supporting materials created or gathered in the course of work performed under these grants.

Specifically, this DCL encourages two types of funding requests: (1) proposals for Conferences (i.e., community workshops and other events) that are designed to bring together stakeholders to explore opportunities to converge on innovative solutions to advancing public access; and (2) proposals for Early-Concept Grants for Exploratory Research (EAGER) for high-risk/high-reward innovative concepts and

pilot projects that yield new fundamental research discoveries from existing NSF-funded data or that ultimately result in deployment of ambitious, sustainable socio-technical infrastructure resources and capabilities that enhance and accelerate new discoveries from existing NSF-funded data. Research ideas that do not advance public access as narrowly defined in this DCL may be suitable for other solicitations such as Cyberinfrastructure for Sustained Scientific Innovation (CSSI) - Data and Software (see https://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf18531).

SPECIFIC GUIDANCE TO PROPOSERS RESPONDING PURSUANT TO THIS DCL

This DCL encourages funding requests aligned with one of the following three tracks:

- I. **Community track:** This track funds proposals for Conferences (i.e., community workshops and other events) that enable better data stewardship by the NSF research community, in particular of data produced and used by the community in the conduct of research and education. Topics include community activities to organize stakeholders (e.g., discipline experts, data repository managers, and data appraisal experts) to explore:
 - Community-specific agreements that identify the data of importance to the community; knowing what to keep helps determine what to throw away;
 - Common data types (e.g., volumetric, image, etc.) across multiple disciplines to harness tools and best practices in data stewardship and use;
 - Data repository findability, accessibility, interoperability, and reuse;
 - The minimal descriptive information for findability and accessibility of data; and
 - Best practices associated with data management plans.
- II. **Data reuse track.** This track encourages reuse of data created as a product of NSF-funded research. Research ideas are sought in two areas as described below.
 - EAGER proposals for high-risk/high-reward innovative studies that address development and testing of important science and engineering ideas and theories through use of existing data. Proposals that are responsive to this track may not involve collection of new data or field research; may not involve data created by an NSF Large Facility (see the list of NSF Large Facilities at <https://www.nsf.gov/bfa/lfo/docs/large-facilities-list.pdf>); and may not come from an investigator who is listed as a principal investigator (PI) or co-PI on an award that created the data set of use. Rather, proposals must:
 - Involve, for data proposed for use, publicly-available data generated through NSF funding; and
 - Agree to make public the details about their experiences reusing the data, including especially challenges associated with that reuse.
 - Proposals for Conferences (community workshops) that creatively employ data challenges, meetups, hackathons, or related activities. These activities enable education and workforce development, along with novel use of existing data created through NSF funding. The majority of the data (but not all) must be publicly available and the result of NSF-funded activities.
- III. **Socio-Technical Infrastructure.** This track encourages EAGER proposals for high-risk/high-reward innovative concepts and pilot projects that address one or more social and/or technical barriers that limit the findability, accessibility, and interoperability of research data in the US and internationally. Suggested topics include, but are not limited to, exploration of:
 - Utility of persistent identifiers early in the data lifecycle that facilitate discovery, filtering, indexing, and routing of the data objects;
 - Costs to repositories of legacy data objects made findable, accessible, interoperable, and reusable;
 - Metrics for assessing findability and accessibility of data;
 - Community-driven studies of data appraisal;
 - Actions to reduce adverse use factors that fit the norms of a community; and

- Principles for generation of data that are consciously designed for reuse.

Awards: Standard grants

Full Proposal Submission Deadline: The deadline for submission of Conference and EAGER proposals proposal submission date is May 23, 2018. Guidance on proposal preparation is given in Chapter II.E of the NSF PAPPG: for EAGER proposals see part 2 at https://www.nsf.gov/pubs/policydocs/pappg18_1/pappg_2.jsp#IIE2 and for Conference proposals see part 7 at https://www.nsf.gov/pubs/policydocs/pappg18_1/pappg_2.jsp#IIE7. Proposals may be submitted via Fastlane or Grants.gov. NSF anticipates that all awards will be made by September 2018.

Contacts: PIs are urged to discuss the suitability of their ideas with Beth Plale at bplale@nsf.gov prior to submission.

National Institutes of Health

Grant Program: BRAIN Initiative: Development and Validation of Novel Tools to Probe Cell-Specific and Circuit-Specific Processes in the Brain (R01 Clinical Trial Not Allowed)

Agency: National Institutes of Health RFA-MH-19-136

RFP Website: <https://grants.nih.gov/grants/guide/rfa-files/RFA-MH-19-136.html>

Brief Description: This funding opportunity announcement (FOA) is designed to support development and validation of novel tools to facilitate the detailed analysis of cells and circuits and provide insights into the neural circuitry and structure underlying complex behaviors. The human brain consists of an estimated one hundred billion neurons and more than one trillion supporting glial cells that are uniquely organized to confer the extraordinary computational activities of the brain. Cell types are categorized by their anatomical position, neurotransmitter content, dendritic and axonal connections, receptor profile, gene expression profile and distinct electrical properties. Although the human brain has long been the focus of numerous studies with many major achievements along the way, to date we remain largely ignorant about the specific details such as cell types and connections that are responsible for rapid information processing. Defining cellular and circuit-level function is dependent on detailed knowledge about the components and structure of the circuit. Such knowledge, in turn, is fundamental to understanding how these features underlie cognition and behavior, which should aid in the development of targeted cell-type and circuit-specific therapeutics to treat brain disorders. This initiative is focused on developing tools (or vastly improving existing tools) to enable access to individual cells and defined groups of cells within neuronal circuits. The tools sought through this FOA can include novel genetic or non-genetic methods for targeted delivery of genes, proteins, and chemicals to specific cells or tightly defined cell types and circuits.

Development of novel tools that will delineate anatomical connections between cells and expand our knowledge of circuit architecture and function is an area well poised for additional investment. Several efforts are currently underway to study large-scale, long-range connections, such as the NIH Human Connectome Project, as well as large scale rodent connectational studies. Recent development of new technologies (e.g., CLARITY, expansion microscopy, MerFISH, and several other imaging breakthroughs) allow an unprecedented three-dimensional view into the post-mortem brain. While still at an early stage, these exciting technologies hold promise for mapping short- and long-range connections throughout the brain. Coupled with improved activity monitoring technologies in awake, behaving animals, these new tools promise an understanding of circuitry in action. Further development of these technologies is crucial to push the envelope beyond our current capabilities. To this end, applicants from the biological sciences are encouraged to establish collaborations with nanobiologists, material scientists, engineers and colleagues in other disciplines to develop groundbreaking approaches to study brain activity.

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

Letter of Intent: August 27, 2018

Deadline: September 27, 2018, by 5:00 PM local time of applicant organization. All [types of non-AIDS applications](#) allowed for this funding opportunity announcement are due on this date. No late applications will be accepted for this Funding Opportunity Announcement. Applicants are encouraged to apply early to allow adequate time to make any corrections to errors found in the application during the submission process by the due date.

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

Agency: National Institutes of Health RFA-RM-18-007

RFP Website: <https://grants.nih.gov/grants/guide/rfa-files/RFA-RM-18-007.html>

Brief Description: The [NIH Director's Pioneer Award](#) supports individual scientists of exceptional creativity who propose highly innovative approaches to addressing major challenges in the biomedical or behavioral sciences towards the goal of enhancing human health. The NIH recognizes a unique and compelling need to promote diversity in the biomedical and behavioral research workforce and expects its efforts to lead to the recruitment of the most talented researchers from all groups. Thus, this Funding Opportunity Announcement encourages applications from talented researchers from diverse backgrounds underrepresented in biomedical/behavioral research, including underrepresented racial and ethnic groups, persons with disabilities, and women. Applications proposing research on any topic within the broad mission of NIH are welcome.

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

Pioneer awardees are required to commit the major portion (more than 6 person-months or at least 51%) to activities supported by the Pioneer Award research project in the first three years of the project period. Effort expended toward teaching, administrative, or clinical duties should not be included in this calculation. Awardees will be allowed to reduce effort to at least 4 person-months (33%) and at least 3 person-months (25%) in the fourth and fifth years, respectively, to help them transition to other sources of support, since Pioneer Awards cannot be renewed. Applicants with current research commitments equal to 6 person-months or more must adjust their effort on existing grants during the award to devote the required minimum effort to the Pioneer Award project. Applicants who will not be able to meet this requirement should not submit applications.

The NIH Director's Pioneer Award is part of the [High-Risk, High-Reward Research program](#) funded through the [NIH Common Fund](#), which supports cross-cutting programs that are expected to have exceptionally high impact. All Common Fund initiatives invite investigators to develop bold, innovative, and often risky approaches to address problems that may seem intractable or to seize new opportunities that offer the potential for rapid progress.

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

Letter of Intent: Not required

Deadline: September 14, 2018, by 5:00 PM local time of applicant organization. All [types of non-AIDS applications](#) allowed for this funding opportunity announcement are due on this date. No late applications will be accepted for this Funding Opportunity Announcement. Applicants are encouraged to apply early to allow adequate time to make any corrections to errors found in the application during the submission process by the due date.

Grant Program: BRAIN Initiative: Targeted BRAIN Circuits Projects- TargetedBCP (R01 Clinical Trial Not Allowed)

Agency: National Institutes of Health RFA-NS-18-030

RFP Website: <https://grants.nih.gov/grants/guide/rfa-files/RFA-NS-18-030.html>

Brief Description: This FOA is one of a family of "Integrated Approaches" NIH BRAIN FOAs that range from small or exploratory, targeted brain circuits projects with specific research deliverables (R21, R01) to large, team-research projects with exploratory aims (U01) or with extensive and elaborated goals and a 5-10 year horizon of discovery (U19). In each case, the FOAs are guided by BRAIN 2025 A Scientific Vision: "The Application of Integrated Technologies to Study Fundamental Questions in Neuroscience: Numerous long-standing problems in brain science will benefit dramatically from the integrated experimental approach made possible by the BRAIN Initiative." Potential applicants are encouraged to visit the NIH BRAIN Initiative website for information and guidance <https://www.braininitiative.nih.gov/funding/initiatives.htm>.

All FOAs in this family of initiatives emphasize the use of cutting-edge methods of activation and recording to understand the behavior of circuits at cellular and sub-second levels of spatial and temporal resolution; that is, at the level of the functional units of circuits. All FOAs welcome basic research using human or non-human animal subjects. However, there is a specific FOA for neurobiology research involving research opportunities employing invasive neural recording (Research Opportunities Using Invasive Neural Recording and Stimulating Technologies in the Human Brain). This family of initiatives also seeks advances in theory and/or analytics, and has a requirement of a data standards and management plan, as well as a data dissemination plan to facilitate use of the results by the research community.

Targeted Brain Circuits Projects

The primary goal of this FOA is to solicit research projects using innovative, methodologically-integrated approaches to understand how circuit activity gives rise to mental experience and behavior. The activity of neural circuits is the substrate of cognitive processes such as perception, attention, reasoning, intention, decision-making, and emotion. These internal activities are translated into patterns of activation that support simple motor behaviors, as well as more complex behaviors such as navigation and communication. Dysfunction of these large systems of neurons due to disease, injury, or developmental anomaly is the basis of neural and mental disorders. A mission of the NIH BRAIN Initiative is to understand how large scale neural systems contribute to cognitive and neurological function in both health and disease.

Targeted Brain Circuit Project R01 awards will support an individual laboratory or a small multi-PD/PI group. Supported projects will reflect the NIH BRAIN Initiative interests in the application of cutting-edge methodologies in the service of understanding brain circuit function at cellular and sub-second levels of resolution in ethologically relevant behaviors. Applications should offer specific, feasible research goals as endpoints within a 5-year term.

The proposed studies should relate to at least one of the seven major topic areas of the BRAIN 2025 report:

1. Discovering diversity: Identify and provide experimental access to the different cell types to determine their roles in the context of circuit function.
2. Maps at multiple scales: Generate structural and functional circuit diagrams that can span resolution from synapses to the whole brain.

3. The brain in action: Produce a dynamic picture of the functioning brain by developing and applying improved methods for large-scale monitoring of neural activity.

4. Demonstrating causality: Link brain activity to behavior with precise interventional tools that change neural circuit dynamics.

5. Identifying fundamental principles: Produce conceptual foundations about circuit dynamics and functional connectivity for understanding the biological basis of mental processes through development of new theoretical and data analysis tools.

6. Advancing human neuroscience: Develop innovative technologies to understand brain circuits and ensembles of circuits that inform understanding of the human brain and mechanisms for treating its disorders.

7. From BRAIN Initiative to the brain: Integrate new technological and conceptual approaches produced in Goals #1-6 to discover how dynamic patterns of neural activity are transformed into cognition, emotion, perception, and action in health and disease.

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

Letter of Intent: June 3, 2018

Deadline: September July 3, 2018; November 6, 2018; July 3, 2019; November 6, 2019; July 1, 2020; November 10, 2020 by 5:00 PM local time of applicant organization. All [types of non-AIDS applications](#) allowed for this funding opportunity announcement are due on these dates.

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

Grant Program: NIH Director's Early Independence Award (DP5 - Clinical Trial Optional)

Agency: National Institutes of Health RFA-RM-18-010

RFP Website: <https://grants.nih.gov/grants/guide/rfa-files/RFA-RM-18-010.html>

Brief Description: The [NIH Director's Early Independence Award](#) provides an opportunity for exceptional junior scientists to accelerate their entry into an independent research career by forgoing the traditional post-doctoral training period. Though most newly graduated doctoral-level researchers would benefit from post-doctoral training, a small number of outstanding junior investigators would benefit from skipping such training and launching essentially directly into an independent research career. For those select junior investigators who already have established a record of scientific innovation and research productivity and who have demonstrated unusual scientific vision and maturity, typical post-doctoral training would unnecessarily delay their entry into independent research. Also, importantly, the NIH Director's Early Independence Award provides an opportunity for institutions to invigorate their research programs by bringing in the fresh scientific perspectives of the awardees that they host.

To be eligible, the investigator, at the time of application, must have received the most recent doctoral degree or completed clinical training within the previous fifteen months or expect to do so within the following twelve months. **To be consistent with the updated [NIH definition of Early Stage Investigators](#), eligible clinical training includes clinical residency and clinical fellowship.** For full eligibility requirements, see [Section III. Eligibility Information](#). By the end of the award period, the Early Independence Award investigator is expected to be competitive for continued funding of his/her research program through other NIH funding activities and for a permanent research-oriented position.

The NIH recognizes a compelling need to promote diversity in the biomedical, behavioral, clinical and social sciences research workforce. The NIH expects its efforts towards diversifying the workforce to lead to the recruitment of the most talented researchers from all groups; to improve the quality of the educational and training environment; to balance and broaden the perspective in setting research priorities; to improve the ability to recruit subjects from diverse backgrounds into clinical research protocols; and to improve the Nation's capacity to address and eliminate health disparities. Applicant institutions are always encouraged to consider talented researchers from diverse backgrounds

underrepresented in biomedical research, including underrepresented racial and ethnic groups, persons with disabilities, and women for participation in all NIH-funded research opportunities.

Awards: Awards will be for up to \$250,000 in direct costs per year, plus applicable Facilities and Administrative (F&A) costs.

Letter of Intent: August 27, 2018

Deadline: September 27, 2018, by 5:00 PM local time of applicant organization. All [types of non-AIDS applications](#) allowed for this funding opportunity announcement are due on this date.

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

Grant Program: International Bioethics Research Training Program (D43 Clinical Trial Optional)

Agency: National Institutes of Health PAR-18-716

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-18-716.html>

Brief Description: The primary objective of proposed International Bioethics Research Training programs should be to support individuals with ethics expertise from a LMIC research intensive institution to develop the capabilities to conduct original empirical or conceptual research on critical ethical issues in health research in their countries. The proposed doctoral and/or long term postdoctoral training program should provide:

- A strong foundation in research design, methods, and analytic techniques appropriate for the proposed bioethics research area;
- The enhancement of the trainees' ability to conceptualize, analyze and solve bioethics research problems with increasing independence;
- Experience conducting bioethics research using state-of-the-art methods as well as presenting and publishing their research findings;
- The opportunity to interact with members of the international bioethics academic community at appropriate conferences and workshops; and
- The enhancement of the trainees' understanding of the bioethics theory and ethical practice related to global health research.

A secondary objective of proposed programs should be to provide training in the competencies necessary to sustain scholarly careers in leadership positions at institutions in the LMIC as well as teaching bioethics, leading ethical review of research and providing research ethics consultation.

The overall goal of this initiative is to contribute to the development of a sustainable critical mass of bioethics leaders at the LMIC research intensive institution to meet the needs for research ethics capacity in this country. Applicants should describe the specific needs for research ethics capacity, scholarship and leadership in the LMIC and how the results of the proposed doctoral and postdoctoral training will meet these needs at the end of the proposed award period. Applicants are encouraged to develop plans for post-training interaction and activities among the doctoral and postdoctoral trainees specifically to create a sustainable critical mass for bioethics leadership at LMIC institutions.

Awards: Applicants may request up to \$230,000 direct costs per year

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

Deadline: May 17, 2018, by 5:00 PM local time of applicant organization. All [types of non-AIDS applications](#) allowed for this funding opportunity announcement are due on these dates.

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

Grant Program: BRAIN Initiative: New Technologies and Novel Approaches for Large-Scale Recording and Modulation in the Nervous System (R01 Clinical Trial Not Allowed)

Agency: National Institutes of Health RFA-NS-18-020

RFP Website: <https://grants.nih.gov/grants/guide/rfa-files/RFA-NS-18-020.html>

Brief Description: This FOA is related to the recommendations in section III of the BRAIN 2025 Report, with the goal to 'produce a dynamic picture of the functioning brain by developing and applying improved methods for large-scale monitoring of neural activity'. Towards this end, the report calls for accelerated development of new and improved electrodes for large-scale recording, new and improved electrical and chemical optical sensors of neural activity, and new and improved instruments for optical monitoring of neural activity. These new technologies and approaches will provide unprecedented opportunities for exploring how the nervous system encodes, processes, utilizes, stores, and retrieves vast quantities of information. A better understanding of this dynamic neural activity will enable researchers to seek new ways to diagnose, treat, and prevent brain disorders. Moreover, this FOA is intended to support the core principles of technology validation and dissemination highlighted in the BRAIN 2025 Report.

This FOA seeks applications to conduct proof-of-concept development and testing of new technologies and novel approaches for large-scale recording and manipulation of neural activity, to enable transformative understanding of dynamic signaling in the nervous system.

An additional BRAIN FOA ([RFA-NS-18-019](#)) solicits applications for iterative refinement and validation of existing and emerging technologies for large-scale recording and manipulation of neural activity.

Applications are expected to address any or all of the following three general goals for the FOA:

1. Develop New Large-Scale Network Recording Capabilities

Recording dynamic neural activity from complete neural networks, over long periods, in any area of the brain is a challenging but essential goal. Advances in the exploration and development of new technologies for neural cell recording, including methods based on electrodes, microelectronics/microchips, imaging, molecular genetics, and nanoscience are encouraged. It is expected that progress will initially be tractable in non-human animals (invertebrate or vertebrate), but extrapolation to human circuits is an ultimate goal.

2. Develop Tools for Circuit Manipulation

The ability to activate and inhibit specific populations of neurons is key to understanding functional circuits, which will advance the scope of our knowledge from observation of neural phenomena to a mechanistic understanding of neural causation. A new generation of tools for optogenetics, pharmacogenetics, biochemical, electromagnetic and/or acoustic modulation needs to be developed for use in animals, and eventually in humans, to enable the immense potential of circuit manipulation.

3. Link Neural Activity to Behavior

The goal of this FOA is to produce technologies with potential to elucidate nervous system function, in health and disease, in the context of complex behaviors. Proposed technologies should be compatible with experiments in behaving animals and should be validated under in vivo experimental conditions. In addition, novel approaches for enabling large-scale neural recording or manipulation during complex behaviors are encouraged along with the computational and statistical tools necessary to link neural activity to behavior. In combination with concurrent measurement and manipulation of neuronal activity, applications may propose methods to enhance the ability to quantify and interpret animal behavior, at high temporal and spatial resolution, reliably and objectively, over long periods of time and under a broad set of conditions.

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

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

Deadline: May 15, 2018, October 29, 2018, May 1, 2019, October 29, 2019, May 1, 2020, and October 29, 2020, by 5:00 PM local time of applicant organization. All [types of non-AIDS applications](#) allowed for this funding opportunity announcement are due on these dates.

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

Department of Defense/US Army/DARPA/ONR

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

Agency: Department of Defense Naval Research Laboratory N00173-18-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/>. This announcement is an expression of interest only and does not commit the Government to make any award or to pay for any proposal preparation costs. The cost of proposal preparation for response to a BAA is not considered an allowable direct charge to any resultant contract or any other contract; however, it may be an allowable expense to the normal bid and proposal indirect cost specified in FAR 31.205-18.

Awards: Various

Proposal Deadline: May 9, 2019

Contact Information: Mary Johnson Contract Specialist Phone 202-767-2021

Grant Program: U.S. Army Research Institute for the Behavioral and Social Sciences Broad Agency Announcement for Basic, Applied, and Advanced Research (Fiscal Years 2018-2023)

Agency: Department of Defense Dept. of the Army – USAMRAA W911NF-18-S-0005

Website:

<https://www.fbo.gov/index?s=opportunity&mode=form&tab=core&id=e1ddf5bd04750f82fd3cd68126fd76c7>

Brief Description: The U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) announces the ARI FY18-23 Broad Agency Announcement for Basic, Applied, and Advanced Scientific Research. This Broad Agency Announcement, which sets forth research areas of interest to the United States Army Research Institute for the Behavioral and Social Sciences, is issued under the provisions of paragraph 6.102(d)(2) of the Federal Acquisition Regulation (FAR), which provides for the competitive selection of proposals. Proposals submitted in response to this BAA and selected for award are considered to be the result of full and open competition and in full compliance with the provisions of Public Law 98-369 (The Competition in Contracting Act of 1984) and subsequent amendments. The U.S. Army Research Institute for the Behavioral and Social Sciences is the Army's lead agency for the conduct of research, development, and analyses for the improvement of Army readiness and performance via research advances and applications of the behavioral and social sciences that address personnel, organization, training, and leader development issues. Programs funded under this BAA include basic research, applied research, and advanced technology development that can improve human performance and Army readiness.

Those contemplating submission of a proposal are encouraged to contact the ARI Technical Point of Contact (TPOC) for the respective topic area cited in the BAA. If the R&D warrants further inquiry and funding is available, submission of a proposal will be entertained. The recommended three-step sequence is (1) telephone call to the ARI TPOC or responsible ARI Manager, (2) white paper submission, (3) full proposal submission. Awards may be made in the form of contracts, grants, or cooperative agreements. Proposals are sought from educational institutions, non-profit/not-for-profit organizations, and commercial organizations, domestic or foreign, for research and development (R&D) in those areas specified in the BAA. The U.S. Army Research Institute for the Behavioral and Social Sciences encourages Historically Black Colleges and Universities/Minority Serving Institutions (HBCU/MSI) and small businesses to submit proposals for consideration. Foreign owned, controlled, or influenced organizations are advised that security restrictions may apply that could preclude their participation in these efforts. Government laboratories, Federal Funded Research and Development Centers (FFRDCs), and US Service Academies are not eligible to participate as prime contractors or recipients. However, they may be able to participate as subcontractors or subrecipients (eligibility will be determined on a case by case basis).

Awards: Various

Proposal Deadline: This BAA is a continuously open five-year announcement valid throughout the period beginning 30 April 2018 and ending 29 April 2023. New start awards are normally obligated early within each fiscal year. Amendments to this BAA will be posted to <https://www.fbo.gov> (FedBizOpps) and <http://www.grants.gov> when they occur. Interested parties are encouraged to periodically check these websites for updates and amendments.

Contact Information: Maria Nelson Contracting Officer Phone 919-541-4992
maria.d.nelson.civ@mail.mil

Grant Program: DoD Peer Reviewed Medical Research Program (PRMRP) Investigator-Initiated Research Award

Agency: Department of Defense Dept. of the Army – USAMRAA W81XWH18PRMRPIIRA

Website: <http://cdmrp.army.mil/funding/pa/FY18-PRMRP-IIRA.pdf>

Brief Description: The vision of the FY18 PRMRP is to improve the health and well-being of all military Service members, Veterans, and beneficiaries. The PRMRP challenges the scientific and clinical communities to address at least one of the FY18 PRMRP Topic Areas with original ideas that foster new directions along the entire spectrum of research and clinical care. The program seeks applications in laboratory, clinical, behavioral, epidemiologic, and other areas of research to advance knowledge in disease etiology, improve prevention, detection, diagnosis, treatment, and quality of life for those affected by a relevant disease or condition, and to develop and validate clinical care or public health guidelines.

All applications for PRMRP funding must specifically address at least one of the Topic Areas as directed by Congress and must be directly relevant to the healthcare needs of military Service members, Veterans, and/or beneficiaries. If the proposed research does not specifically address at least one of the FY18 PRMRP Topic Areas, the Government will administratively withdraw the application. The Government reserves the right to reassign the application's Topic Area if submitted under an inappropriate Topic Area.

Awards: The anticipated direct costs budgeted for the entire period of performance for a single PI FY18 PRMRP IIRA award will not exceed \$1.2M. The anticipated direct costs budgeted for the entire period of performance for an FY18 PRMRP IIRA award with the Partnering PI Option will not exceed \$1.5M.

Proposal Deadline:

Pre-Application Submission Deadline: 5:00 p.m. Eastern time (ET), June 12, 2018

Invitation to Submit an Application: July 2018

Application Submission Deadline: 11:59 p.m. ET, September 20, 2018

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

Grant Program: Computers and Humans Exploring Software Security (CHESS)

Agency: Department of Defense DARPA HR001118S0040

Website: <https://www.darpa.mil/work-with-us/opportunities>

Brief Description: DARPA is soliciting innovative research proposals to develop techniques and systems that will substantially accelerate software vulnerability research (VR). The goal of the CHESS program is to develop computer-human systems to rapidly discover all classes of vulnerability in complex software. These novel approaches for the rapid detection of vulnerabilities will focus on identification of system information gaps that require human assistance, generation of representations of these gaps appropriate for human collaborators, capture and integration of human insights into the analysis process, and the synthesis of software patches based on this collaborative analysis. 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. This Broad Agency Announcement (BAA) is being issued, and any resultant selection will be made, using procedures under Federal Acquisition Regulation (FAR) 6.102(d)(2) and 35.016. Any negotiations and/or awards will use procedures under FAR 15.4 (or 32 CFR § 200.203 for cooperative agreements). Proposals received as a result of this BAA shall be evaluated in accordance with evaluation criteria specified herein through a scientific review process.

Awards: Various

Proposal Deadline: Abstract Due Date: May 3, 2018, 12:00 noon (ET)

Proposal Due Date: June 15, 2018, 12:00 noon (ET)

Contact Information: Mr. Dustin Frazee, Program Manager, DARPA BAA Email: CHESS@darpa.mil

Grant Program: Notice of Intent for the Funding Opportunity for Bilateral Academic Research Initiative (BARI) Pilot Program

Agency: Department of Defense Dept of the Army -- Materiel Command W911NF-18-S-0007

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

Brief Description: This notice is provided to allow potential applicants sufficient time to develop meaningful collaborations and responsive applications. The BARI program supports basic research in science and engineering stemming from interactive collaborative efforts between U.S. institutions of higher education and U.K. institutions of higher education that is of potential interests to U.S. Department of Defense (DoD) and U.K. Ministry of Defense (MOD). The program is focused on international collaborative research efforts where teams from the United States and the United Kingdom combine unique skillsets and approaches to provide rapid advances in scientific areas of mutual interests to the U.S. DoD and UK MOD. The area of interest is artificial intelligence (AI) and collaborative decision making. The research goal is to progress beyond collaborative human-machine sense making to develop approaches that might also enable collaborative decision making. The end goal is for humans and technology to be effective parts of the same team, with a machine behaving as an equal team member that can reason as well as its human team mates. These teaming capabilities are an essential step toward a more general AI that is capable of true human-machine teaming.

Awards: TBA

Proposal Deadline: TBA

Contact Information: William Creech Contracting Officer
9195494387 william.a.creech3.civ@mail.mil

Grant Program: Proof of Concept Commercialization Pilot Program Innovation Corps @ Department of Defense (I-Corps @ DoD)

Agency: Department of Defense Dept of the Army -- Materiel Command W911NF-18-S-0004

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

Brief Description: The Department of Defense (DoD) is soliciting applications from current/recent DoD awardees on basic research topics to receive mentoring and funding to accelerate the transition and commercialization of the funded research. The I-Corps @ DoD program is designed to support the acceleration of basic research innovations from qualifying institutions by providing Principal Investigators (PIs) and students with training and mentorship in customer discovery and the commercialization process. The goals of this program are to spur the transition of fundamental research with potential defense relevance to the marketplace, to encourage collaboration between academia and industry, and to train students, faculty, and other researchers to understand innovation and entrepreneurship. There will be three outcomes of the I-Corps @ DoD program: 1) a clear go/no go decision regarding viability of products and services, 2) should the decision be to move the effort forward, a transition plan to do so, and 3) an understanding of what kind of minimum viable product demonstration would be required by key partners and customer segments.

The I-Corps @ DoD program is a pilot program modeled after the National Science Foundation (NSF) I-Corps™ program (Note: Trademark hereafter asserted and referred to as I-Corps). The key component of the I-Corps @ DoD program is the I-Corps Team. The I-Corps Team is comprised of the Technical Lead, the Entrepreneurial Lead and the Mentor. The Entrepreneurial Lead is typically a postdoctoral researcher, graduate student, or other student, possesses relevant technical knowledge and a deep commitment to investigate the commercial landscape surrounding the innovation. The Mentor brings entrepreneurial experience and serves as the principal guide in determining the technology disposition – Technical Leads/PIs ideally locate their own mentor, but can also contact the I-Corps @ DoD Program Manager for assistance with locating a mentor.

Awards: The Innovation Corps at the Department of Defense (I-Corps @ DoD) program is an opportunity for Principal Investigators (PIs) to learn how to commercialize their discoveries / innovations. Successful applicants will receive a grant of up to \$70,000 to attend a program that provides extensive training in product commercialization from industry experts and ‘serial entrepreneurs’ who have helped train over 1000 I-Corps™ Teams in how to bring their innovations to market.

White Paper Submission: 8 June 2018

Proposal Deadline: 6 July 2018

Contact Information: Kevin Bassler Grants Officer [Grants Officer Contact information](#)

Grant Program: 2019 Department of Defense Multidisciplinary Research Program of the University Research Initiative (MURI) - ARMY SUBMISSION

Agency: Department of Defense ONR, ARO, Air Force Office of Scientific Research

ONR # N00014-18-S-F006

ARO # W911NF18S0003

AFOSR # FOA-AFRL-AFOSR-2018-0001

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

Brief Description: The MURI program supports basic research in science and engineering at U.S. institutions of higher education (hereafter referred to as "universities") that is of potential interest to DoD. The program is focused on multidisciplinary research efforts where more than one traditional discipline interacts to provide rapid advances in scientific areas of interest to the DoD. As defined in the DoD Financial Management Regulation: Basic research is systematic study directed toward greater knowledge or understanding of the fundamental aspects of phenomena and of observable facts without specific

applications towards processes or products in mind. It includes all scientific study and experimentation directed toward increasing fundamental knowledge and understanding in those fields of the physical, engineering, environmental, and life sciences related to long-term national security needs. It is farsighted high payoff research that provides the basis for technological progress (DoD 7000.14-R, vol. 2B, chap. 5, para. 050201.B). DoD's basic research program invests broadly in many fields to ensure that it has early cognizance of new scientific knowledge.

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

Topic 1: Fundamental Limits on Information Latency

Topic 2: Molecularly Programmable Graphene Architecture (MPGA)

Topic 3: Identifying invariances for improved modeling and prediction of oceanographic phenomena

Awards: Various

White Paper Submission: White papers may be submitted via e-mail directly to a Research Topic Chief, via the United States Postal Service (USPS), or via a commercial carrier to the agency specified for the topic. For hard copy submissions, use the addresses provided in Section II. D. 2. a, entitled, "Address for Submission of Hard Copy White Papers." The due date and time for receipt of white papers is no later than 29 June 2018 (Friday) at 11:59 PM Eastern Time.

Proposal Deadline: Proposals must be submitted and received electronically through Grants.gov not later than 16 October 2018 (Tuesday) at 11:59 PM Eastern Time to be considered for selection. This is the final due date.

Contact Information: Kia McCormick Procurement Analyst Phone (919)549-4281
Dr. Ellen Livingston MURI Program Manager Office of Naval Research Email:
ellen.s.livingston@navy.mil

Grant Program: 2019 DEFENSE UNIVERSITY RESEARCH INSTRUMENTATION PROGRAM (DURIP)

Agency: Department of Defense Office of Naval Research AFOSR ARO

AFOSR: FOA-AFRL-AFOSR-2018-0002

ARO: W911NF18S0002

ONR: N00014-18-S-F007

Website: <https://www.onr.navy.mil/en/Contracts-Grants/Funding-Opportunities/Broad-Agency-Announcements>

Brief Description: As the capacity of the DoN Science and Technology (S&T) workforce is interconnected with the basic research enterprise and STEM education system, ONR recognizes the need to support efforts that can jointly improve STEM student outcomes and align educational efforts with Naval S&T current and future workforce needs. This announcement explicitly encourages projects that improve the capacity of education systems and communities to create impactful STEM educational experiences for students and workers. Submissions are encouraged to consider including active learning approaches and incorporating 21st century skill development. Projects must aim to increase student and worker engagement in STEM and enhance people with needed Naval STEM capabilities. ONR encourages applications to utilize current STEM educational research for informing project design and advancing our understanding of how and why people choose STEM careers and opportunities of naval relevance. While this announcement is relevant for any stage of the STEM educational system, funding efforts will be targeted primarily toward projects addressing the below communities or any combination of these communities: • Secondary education communities; • Post-Secondary communities; • Informal science communities; • Current naval STEM workforce communities. Project scope may range in size and complexity. Projects that are already established with prior funding sources or have established stakeholders are especially encouraged to consider the following scope areas: • Develop and implement

exploratory pilot projects that seek to create new educational experiences within educational and training communities. • Develop larger cohesive STEM education and training activities that strengthen the capacity of regional communities and stakeholders to improve STEM education and training. • Establish meetings of stakeholders that must seek to connect relevant people and organizations to explicitly develop broader projects for impacting entire communities.

Awards: Various

Submission of White Papers: As mentioned prior, white papers are a MANDATORY component of a two-part submission process. White papers must NOT be submitted through the Grants.gov application process. Instead, white papers are to be submitted via email to the attention of Dr. Michael Simpson at onr_stem@navy.mil as either a PDF or Microsoft Word 2010 compatible file. The subject line of the email shall read “N00014-18-S-F003 White Paper Submission.” The due date and time for receipt of white papers begins on 2 April 2018 and ends on 31 July 2018 (Tuesday) at 5:00 PM Eastern Time.

Proposal Deadline: Applications may only be submitted by invitation and received electronically through <https://www.grants.gov/> no later than 28 September 2018 (Friday) at 11:59 PM Eastern Time.

Contact Information: Dr. Michael Simpson Director of Education and Workforce Office of Naval Research 875 North Randolph Street Arlington VA 22203-1995 Email: onr_stem@navy.mil

Grant Program: Air Force Fiscal Year 2019 Young Investigator Research Program (YIP)

Agency: Department of Defense Air Force Office of Scientific Research FA9550-18-S-0002

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

Brief Description: The Fiscal Year 2019 Air Force Young Investigator Research Program (YIP) intends support young in career scientists and engineers who have received Ph.D. or equivalent degrees by 1 April 2012 or later showing exceptional ability and promise for conducting basic research. The program objective is to foster creative basic research in science and engineering; enhance early career development of outstanding young investigators; and increase opportunities for the young investigator to recognize the Air Force mission and related challenges in science and engineering. 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. 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. Please review the remainder of this announcement for additional information. We anticipate approximately thirty-six (36) awards under this competition if funds are available.

Please see the eligibility requirements in the solicitation: Doctorate no earlier than 01 Apr 2012

Awards: Most YIP awards are three (3) years in duration, funded up to \$150,000 per year for a total of approximately \$450,000. Proposals should be submitted in adherence to these guidelines.

Proposal Deadline: Proposals must be received electronically through Grants.gov by Friday, 01 Jun 2018 at 11:59 PM Eastern time to be considered. Technical or general pre-proposal inquiries and questions must be received in writing by electronic mail not later than Friday, 27 April 2018 to be considered.

Contact Information: MS. ELLEN M. ROBINSON, AFOSR/RTB Program Coordinator Telephone: (703) 588-8527 Email: afosryip@us.af.mil

General Inquires: MS. BRITTANY TURNER, AFOSR/PKC Procurement Analyst Email: brittany.turner.5@us.af.mil

Department of Education

Grant Program: Office of Innovation and Improvement (OII): Education Innovation and Research Program: Early-phase Grants

Agency: Department of Education CFDA Number 84.411C ED-GRANTS-041918-003

Website: <https://innovation.ed.gov/what-we-do/innovation/education-innovation-and-research-eir/>

Brief Description: The Education Innovation and Research (EIR) program, established under section 4611 of the Elementary and Secondary Education Act, as amended (ESEA), provides funding to create, develop, implement, replicate, or take to scale entrepreneurial, evidence-based, field-initiated innovations to improve student achievement and attainment for high-need students; and rigorously evaluate such innovations. The EIR program is designed to generate and validate solutions to persistent educational challenges and to support the expansion of those solutions to serve substantially larger numbers of students. The central design element of the EIR program is its multi-tier structure that links the amount of funding that an applicant may receive to the quality of the evidence supporting the efficacy of the proposed project, with the expectation that projects that build this evidence will advance through EIR's grant tiers: "Early-phase," "Mid-phase," and "Expansion." Applicants proposing innovative projects that are supported by limited evidence can receive relatively small grants to support the development, implementation, and initial evaluation of the practices; applicants proposing projects supported by evidence from rigorous evaluations, such as an experimental study (as defined in this notice), can receive larger grant awards to support expansion across the country. This structure provides incentives for applicants to: (1) Explore new ways of addressing persistent challenges that other educators can build on and learn from; (2) build evidence of effectiveness of their practices; and (3) replicate and scale successful practices in new schools, districts, and States while addressing the barriers to scale, such as cost structures and implementation fidelity. All EIR projects are expected to generate information regarding their effectiveness in order to inform EIR grantees' efforts to learn about and improve upon their efforts, and to help similar, non-EIR efforts across the country benefit from EIR grantees' knowledge. By requiring that all grantees conduct independent evaluations of their EIR projects, EIR ensures that its funded projects make a significant contribution to improving the quality and quantity of information available to practitioners and policymakers about which practices improve student achievement and attainment, for which types of students, and in what contexts. The Department awards three types of grants under this program: "Early-phase" grants, "Mid-phase" grants, and "Expansion" grants. These grants differ in terms of the level of prior evidence of effectiveness required for consideration for funding, the expectations regarding the kind of evidence and information funded projects should produce, the level of scale funded projects should reach, and, consequently, the amount of funding available to support each type of project. Early-phase grants provide funding to support the development, implementation, and feasibility testing of a program, which prior research suggests has promise, for the purpose of determining whether the program can successfully improve student achievement and attainment for high-need students. Early-phase grants must demonstrate a rationale (as defined in this notice). These Early-phase grants are not intended simply to implement established practices in additional locations or address needs that are unique to one particular context. The goal is to determine whether and in what ways relatively newer practices can improve student achievement and attainment for high-need students. This notice invites applications for Early-phase grants only. The notices inviting applications for Mid-phase and Expansion grants are published elsewhere in this issue of the Federal Register. Background: EIR is designed to offer opportunities for States, districts, schools, and educators to develop innovations and scale effective practices that address their most pressing challenges. Early-phase grantees are encouraged to make continuous improvements in project design and implementation before conducting a full-scale evaluation of effectiveness. Grantees should consider questions such as: How easy would it be for others to implement this practice, and how can its implementation be improved? How can I use data from early indicators to gauge impact, and what changes in implementation and student achievement do these early indicators suggest? By focusing on continuous improvement and iterative development, Early-phase grantees can make adaptations that are necessary to increase their practice's potential to be effective and

ensure that the EIR-funded evaluation assesses the impact of a thoroughly conceived practice. Early-phase applicants should develop, implement, and test the feasibility of their projects. The evaluation of an Early-phase project should be an experimental or quasi-experimental design study (as defined in this notice) that can determine whether the program can successfully improve student achievement and attainment for high-need students. Early-phase grantees' evaluation designs are encouraged to have the potential to meet the moderate evidence (as defined in this notice) threshold. The Department intends to provide grantees and their independent evaluators with evaluation technical assistance. This evaluation technical assistance could include grantees and their independent evaluators providing to the Department or its contractor updated comprehensive evaluation plans in a format as requested by the technical assistance provider and using such tools as the Department may request. Grantees will be encouraged to update this evaluation plan at least annually to reflect any changes to the evaluation, with updates consistent with the scope and objectives of the approved application.

Awards: Up to \$4,000,000. Estimated total funding: \$115,000,000

Proposal Deadline:

- Deadline for Notice of Intent to Apply: May 9, 2018
- Deadline for Transmittal of Applications: June 5, 2018
- Deadline for Intergovernmental Review: August 6, 2018

Contact Information: Julius Cotton ED Grants.gov FIND Systems Admin. Phone 202-245-6288 EducationGrantInquiries@ed.gov ; Program Manager: Kelly Terpak, U.S. Department of Education, 400 Maryland Avenue SW, Room 4W312, Washington, DC 20202-5900. Telephone: (202) 453-7122. Email: eir@ed.gov

Department of Energy

Grant Program: Building America Industry Partnerships and Research Priorities for High Performance Housing Innovation – 2018

Agency: Department of Energy DE-FOA-0001824

Website: <https://eere-exchange.energy.gov/#FoaIdc5aa2e1c-5e0d-4077-88e9-f789e6524aab>

Brief Description: The mission of BTO's Residential Buildings Integration (RBI) Program is to accelerate energy performance improvements in existing and new residential buildings using an integrated building systems approach to achieve peak energy performance. The RBI Program's market outcome goal is to reduce, by 2025, the energy used for space conditioning and water heating in single-family homes by 40% from 2010 levels. RBI's focus on space conditioning and water heating offers the best opportunities for influencing residential energy use.

With this FOA, RBI will select building science project teams in 2018 for the Building America Program to conduct early stage research and validation of energy performance improvements in existing and new residential buildings with integrated building systems approaches, and achieve optimal home energy performance. These Building America teams will work with industry partners and real world homes to develop and validate technologies and practices that achieve optimal energy and cost performance while effectively managing related risks (e.g., indoor air quality and moisture durability). This FOA builds on work begun in the 2015, 2016, and 2017 Building America FOAs, and is focused primarily on addressing remaining gaps and objectives in the Building America Research-to-Market Plan.

Building America seeks to fund projects with a high potential for significant impact. Successful applicants will present a relevant problem statement, compelling hypothesis and/or solution, and effective research question(s) to be answered or technology/practice to be validated. Successful applications will also include a well-developed plan for answering the research questions or validating the innovative technology/practice, and will describe a clear and compelling rationale linking successful project

outcomes to lasting impact in the housing industry. Teams should have strong partnerships with affected industry stakeholders, such as builders, remodelers, and/or manufacturers.

This FOA has two (2) topics, described below. Applicants may submit multiple applications, but each individual application must be submitted to either Topic 1 or Topic 2, not both. Applications will be evaluated using the technical review criteria of the selected topic.

Topic 1 - Baseline In-situ Fault Analysis in Residential Comfort Systems

Topic 2 - Integration of Advanced Residential Envelope and HVAC Systems

Topic 3 - Gap Analysis of Building Industry Standard Practices

The full Funding Opportunity Announcement is published at EERE-Exchange.energy.gov.

For questions and answers pertaining to this FOA, please reference the DE-FOA-0001824 Building America FAQ Log in FOA Documents.

The eXCHANGE system is currently designed to enforce hard deadlines for Letter of Intent and Full Application submissions. The APPLY and SUBMIT buttons automatically disable at the defined submission deadlines. The intention of this design is to consistently enforce a standard deadline for all applicants.

Applicants that experience issue with submissions PRIOR to the FOA Deadline: In the event that an Applicant experiences technical difficulties with a submission, the Applicant should contact the eXCHANGE helpdesk for assistance (exchangehelp@hq.doe.gov). The eXCHANGE helpdesk and/or the EERE eXCHANGE System Administrators (eXCHANGE@go.doe.gov) will assist the Applicant in resolving all issues.

Awards; Up to \$1,000,000; Available Funding: \$11,000,000

Submission Deadline: Jun 11, 2018 Submission Deadline for Full Applications: 06/11/2018, 5:00 pm ET; through EERE Exchange at: <https://eere-Exchange.energy.gov>, EERE's online application portal.

Contact Information: Mary Murray BTOResidentialBuildingsFOA@ee.doe.gov

Grant Program: Solid-State Lighting Advanced Technology Research and Development- 2018

Agency: Department of Energy DE-FOA-0001823

Website: <https://eere-exchange.energy.gov/#FoaIdb9afac73-0500-4ec6-9a22-ae5adeaa1652>

Brief Description: The U.S. Department of Energy's Building Technologies Office (BTO) Emerging Technologies (ET) Program is working in partnership with industry, national laboratories, and academia to develop innovative energy saving technologies, systems, tools, and models that could lead to a significant reduction in building energy consumption.

The ET Program has identified the program-specific goal of supporting the development of cost-effective technologies capable of reducing the energy use of typical buildings by 45% by 2030, relative to high-efficiency technologies available in 2010. Government investment through mechanisms such as the annual solid-state lighting (SSL) funding opportunity targets early-stage R&D enabling industry to develop novel technologies that can improve the efficiency and reduce the energy costs of the nation's buildings.

The objective of this funding opportunity is to select a diverse portfolio of early-stage R&D projects which can contribute to achieving:

- Maximized energy-efficiency of SSL products;
- Improved lifetime, color quality, and lighting system performance for SSL technology; and,
- Reduced costs of SSL sources and luminaires.

Success in this portfolio of early-stage R&D is expected to further contribute to the growth, leadership, and sustainability of domestic U.S. advanced manufacturing within the SSL industry.

An informational webinar is scheduled to take place on May 7, 2018 at 1:00 PM EDT. Please register for this webinar at <https://register.gotowebinar.com/register/4903250504106776579>. After registering, you will receive a confirmation email containing information about joining the webinar.

Awards: Up to \$1,500,000; Available Funding: \$15,000,000

Submission Deadline: Full Application Submission Deadline: 6/18/2018 5:00 PM EST

Contact Information: Contract Specialist Nicole E. Murray 412-386-7263 DE-FOA0001823@netl.doe.gov

NASA

Grant Program: ROSES 2018: Heliophysics Space Weather Operations to Research

Agency: NASA NNH18ZDA001N-HSWO2R

Website: <https://nspires.nasaprs.com/external/solicitations/summary.do?solId=%7BE17AD920-C9F2-600D-5913-6951AB56F31F%7D&path=open&method=init>

Brief Description: NASA's heliophysics strategic objective is to understand the Sun and its interactions with the Earth and the Solar System, including space weather. In this framework, the Heliophysics Research Program is guided by goals defined in the NASA 2014 Science Plan (available at <https://science.nasa.gov/about-us/science-strategy>) and the 2013 National Research Council Decadal Strategy for Solar and Space Physics report, Solar and Space Physics: A Science for a Technological Society (www.nap.edu/catalog.php?record_id=13060) and its purpose is to enable achieving these goals, which are: 1. Determine the origins of the Sun's activity and predict the variations in the space environment; 2. Determine the dynamics and coupling of Earth's magnetosphere, ionosphere, and atmosphere and their response to solar and terrestrial inputs; 3. Determine the interaction of the Sun with the Solar System and the interstellar medium; 4. Discover and characterize fundamental processes that occur both within the heliosphere and throughout the Universe. The Heliophysics Research Program seeks to understand phenomena, on a broad range of spatial and temporal scales, the fundamental processes that drive them, how these processes combine to create space weather events, and to enable a capability for predicting future space weather events. In concert with the other NASA science divisions (Planetary Science, Astrophysics, and Earth Science), the program shares responsibility for learning about the Earth, our solar system, the universe, and their interrelationships.

Awards: Standard Grants

Proposal Deadline: August 03, 2018

Contact: Terrance Onsager

Heliophysics Division

Science Mission Directorate

NASA Headquarters

Washington, DC 20546-0001

Telephone: (202) 358-1615

Email: terrance.g.onsager@nasa.gov

Grant Program: Early Stage Innovation (ESI)

Agency: NASA 80HQTR18NOA01-18ESI-B2

Website: <https://nspires.nasaprs.com/external/solicitations/summary!init.do?solId=%7B04D6F05D-EC44-7D17-7782-69E354E0D422%7D&path=open>

Brief Description: The National Aeronautics and Space Administration (NASA) Headquarters has released a solicitation, titled Early Stage Innovations (ESI), as an appendix to the Space Technology Mission Directorate (STMD) umbrella NASA Research Announcement (NRA) titled "Space Technology Research, Development, Demonstration, and Infusion 2018 (SpaceTech-REDDI-2018), on May 2, 2018. The solicitation is available by opening the NSPIRES homepage at <http://nspires.nasaprs.com/> by

selecting "Solicitations," then selecting "Open Solicitations," and, finally, selecting "Early Stage Innovations (ESI)."

STMD, and the Space Technology Research Grants (STRG) Program in particular, seek proposals from accredited U.S. universities to develop unique, disruptive, or transformational space technologies that have the potential to lead to dramatic improvements at the system level - performance, weight, cost, reliability, operational simplicity, or other figures of merit associated with space flight hardware or missions. Although progress under an award may be incremental, the projected impact at the system level must be substantial and clearly defined.

Our Nation's universities couple fundamental research with education, encouraging a culture of innovation based on the discovery of knowledge. Universities are, therefore, ideally positioned to both conduct fundamental space technology research and diffuse newly-found knowledge into society at large through graduate students and industrial, government, and other partnerships. STMD investments in space technology research at U.S. universities promote the continued leadership of our universities as an international symbol of the country's scientific innovation, engineering creativity, and technological skill. These investments also create, fortify, and nurture the talent base of highly skilled engineers, scientists, and technologists to improve America's technological and economic competitiveness.

Only accredited U.S. universities are eligible to submit proposals. Teaming is permitted - see solicitation for complete eligibility requirements as well as teaming restrictions.

A PI (see solicitation for restrictions) or Co-I may participate in no more than two proposals in response to this solicitation. The Appendix exclusively seeks proposals that are responsive to one of the six topics:

- Modeling for Small Satellite Electric Propulsion
- Smart and Autonomous Systems for Space
- Omni-Optical Antennas and Optical-Multiple-Access Technologies for Free-Space Near-Earth Satellite Communication
- Modeling Shock Layer Radiation and Chemical Kinetics for Planetary Entry
- Physical and Mechanistic Modeling of the Self-Reacting Friction Stir Welding Process
- Smart Tribological Mechanical Systems for Extreme Temperature Space Environments

Awards: Up to \$500,000

Notice of Intent: Not Required

Proposal Deadline: June 20, 2018

Contact: Claudia M. Meyer, NASA Space Technology Research Grants Program Exec Phone: 202-358-4458 Fax: 202-358-3602

Grant Program: Astrophysics Data Analysis

Agency: NASA NNH18ZDA001N-ADAP

Website: <https://nspires.nasaprs.com/external/solicitations/summary.do?solId=%7B3E84A8DB-8B71-2451-EB02-2111D9EEA891%7D&path=open&method=init>

Brief Description: The Astrophysics Data Analysis Program (ADAP; program element D.2) supports research with a primary emphasis on the analysis of archival data from current and past NASA 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. The program now also supports the analysis of publicly available data from the Neutron star Interior Composition Explorer (NICER) and some approved Guest Observer (GO) programs using Spitzer, even if those observations have yet to be executed, or the data are still within their proprietary period.

Awards: Standard Grants, Available Funds: \$7,000,000

Notice of Intent: Not Required

Proposal Deadline: May 17, 2018

Contact: Douglas M. Hudgins Astrophysics Division Science Mission Directorate NASA Headquarters
Washington, DC 20546-0001 Telephone: (202) 358-0988 Email: Douglas.M.Hudgins@nasa.gov

Grant Program: Advanced Information Systems Technology

Agency: NASA NNH18ZDA001N-AIST

Website: <https://nspires.nasaprs.com/external/solicitations/summary.do?solId=%7BC0D379E0-B4A8-6B97-7B0C-7F5409CD2442%7D&path=open&method=init>

Brief Description: Advanced information systems play a critical role in the collection, handling, and management of the vast amounts of Earth science data, both in space and on the ground. Advanced computational systems and technology concepts that enable the capture, transmission, and dissemination of terabytes of data are essential to NASA's vision of a distributed observational network. ESTO's Advanced Information Systems Technology (AIST) program employs an end-to-end approach to develop these critical technologies—from the space segment, where the information pipeline begins, to the end user, where knowledge is advanced. Two major AIST thrusts are in progress: (1) support to a new observing strategy involving the integration of observations from orbital, airborne and in situ instruments along with models into a sensor web to advance the state of the art understanding of physical processes and natural phenomena, and (2) Analytic Centers focusing on a scientific investigation, where data from many sources, computational resources and tools are harmonized to improve the ability of the investigator to discover new knowledge.

Awards: Standard Grants

Notice of Intent: TBD

Proposal Deadline: TBD

Contact: Michael M. Little Earth Science Technology Office Telephone: (301) 286-7404 Email: Michael.M.Little@nasa.gov

National Endowment of Humanities

Grant Program: Research and Development

Agency: National Endowment of Humanities

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

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

This program recognizes that finding solutions to complex problems often requires forming interdisciplinary project teams, bringing together participants with expertise in the humanities; in preservation; and in information, computer, and natural science.

All projects must demonstrate how advances in preservation and access would benefit the cultural heritage community in supporting humanities research, teaching, or public programming.

Awards: Up to \$350,000

Research and Development offers two funding tiers in order to address projects at all stages of development and implementation.

Tier I: Planning and Basic Research

Tier I provides awards up to \$75,000 for a period of performance of one to two years. This level supports the following activities:

- planning and preliminary work for large-scale research and development projects; and
- stand-alone basic research projects, such as case studies, experiments, or the development of methods, models, and tools.

Tier II: Advanced Implementation

Tier II provides awards up to \$350,000 for a period of performance of one to three years. This level supports projects at a more advanced stage of implementation for the following activities:

- the development of standards, practices, methodologies, or workflows for preserving and creating access to humanities collections; and
- applied research addressing preservation and access issues concerning humanities collections.

Proposal Deadline: June 7, 2018

Contact: Contact the staff of NEH's Division of Preservation and Access at preservation@neh.gov and 202-606-8570. Applicants who are deaf or hard of hearing can contact NEH via Federal Relay (TTY users) at 800-877-8399.

Grant Program: Digital Humanities Advancement Grants

Agency: National Endowment of Humanities

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

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

Through a special partnership with NEH, the Institute of Museum and Library Services (IMLS) anticipates providing additional funding to this program to encourage innovative collaborations between museum or library professionals and humanities professionals to advance preservation of, access to, use of, and engagement with digital collections and services. IMLS and NEH may jointly fund some DHAG projects that involve collaborations with museums and/or libraries.

Digital Humanities Advancement Grants may involve

- creating or enhancing experimental, computationally-based methods, techniques, or infrastructure that contribute to the humanities;
- pursuing scholarship that examines the history, criticism, and philosophy of digital culture and its impact on society, or explores the philosophical or practical implications and impact of digital humanities in specific fields or disciplines; or
- revitalizing and/or recovering existing digital projects that promise to contribute substantively to scholarship, teaching, or public knowledge of the humanities.

Awards: Up to \$375,000

Proposal Deadline: June 5, 2018

Contact: Contact the Office of Digital Humanities (ODH) via e-mail at odh@neh.gov.

National Institute for Health Care Management Foundation

Grant Program: Grand Challenges Exploration (GCE)

Agency: National Institute for Health Care Management Foundation

Website: <https://www.nihcm.org/grants/research-grants>

Brief Description: NIHCM Foundation supports innovative investigator-initiated research with high potential to inform improvements to the U.S. health care system. Projects must advance the existing knowledge base in the areas of health care financing, delivery, management and/or policy. In the first six years of the program, we have awarded nearly \$1.7 million to support 30 studies.

Awards: NIHCM Foundation is making approximately \$400,000 available and expects to fund 7 to 8 studies from this amount.

Proposal Deadline: Interested researchers must submit a brief letter of inquiry (LOI) outlining their study idea by 5:00 PM EDT on July 9, 2018.

Contact: For questions related to this initiative, please contact Julie Schoenman at 202-296-4192 or nihcm[at]nihcm.org. Please specify “RESEARCH GRANT QUESTION” in the email subject line.

The Michael J. Fox Foundation

Grant Program: Non-Pharmacological Interventions for the Treatment of Gait and Balance Disturbances

Agency: The Michael J. Fox Foundation

Website: <https://www.michaeljfox.org/research/grant-detail.php?id=37>

Brief Description: The Michael J. Fox Foundation will award one-to-two-year grants to test non-pharmacological interventions for the treatment of gait and balance disturbances in people with Parkinson’s disease (PD). We are particularly interested in proof-of-concept, validation and data-analysis projects.

This program seeks proposals for research studying the therapeutic benefit of:

- Assistive devices (e.g., back or leg braces)
- Novel technologies (e.g., laser or wearable devices)
- Rehabilitative therapy programs (e.g., occupational or physical therapy)

Gait and balance disturbances in PD can lead to falls, injury, disability and diminished quality of life. While existing dopamine therapies offer therapeutic benefit in treating motor dysfunction in PD, pharmacological-based interventions may not fully ameliorate challenges in gait and balance.

MJFF will prioritize projects that aim to demonstrate proof of concept of methods, feasibility of use and reasonable merit to help gait and balance disturbance in PD. Promising novel technologies must have at least a prototype available to test for proof of concept. Projects also may aim to analyze preliminary existing data around devices or programs. At the end of the proposed project period, technology or approach has the potential to be quickly integrated into patient care.

Awards: TBD

Funding Opportunity Seminar: May 10, 2018; 12.00 PM

Pre-Proposals: May 31, 2018

Proposal Deadline: August 20, 2018

American Diabetes Association

Grant Program: Pathway Program

Agency: American Diabetes Association

Website: <https://professional.diabetes.org/meetings/pathway-stop-diabetes%C2%AE>

Brief Description: *The American Diabetes Association “Pathway” Program* invites nominations from a “broad range of disciplines, including biology, chemistry,

engineering, mathematics and physics. The Association encourages nomination of individuals from diverse backgrounds, including minorities that are underrepresented in research.”

Pathway seeks to bring new investigators and new perspectives to diabetes research. Supporting scientists with different backgrounds and experience is critical to achieving that objective. Pathway accepts nominations for exceptional investigators with medical and scientific backgrounds who propose innovative basic, clinical, translational, behavioral, epidemiological and health services research relevant to any type of diabetes, diabetes-related disease state or complication. Pathway solicits nominations for candidates in all disciplines as applied to diabetes including medicine, biology, chemistry, computing, physics, mathematics and engineering. In addition, nomination of scientists from diverse backgrounds, including minority groups that are underrepresented in biomedical research, is strongly encouraged.

Three Award Categories: –

- Post-docs,
- Early Career
- Established Investigators.

Limited Nomination: NJIT can submit only one nomination.

Draft nominations should be sent to Eric Blitz (eric.blitz@njit.edu) and Atam Dhawan (dhawan@njit.edu) by June 1 for internal evaluation.

Proposal Deadline: July 2, 2018 at 4:00 p.m. CST.

Streamlyne Question of the Week

Question: **Can I change project start and end dates after I have submitted for approval?**

Answer: When a proposal is routed for approval certain information is locked to ensure that the information at the various approval levels (department, college, and university) remains constant. This is intended to guarantee that the authority of academic leadership (e.g., chairs and deans) is recognized in the system.

The start and end dates are included in the data that is locked. If you need to change the dates of a proposal already submitted for approval, you will have to recall the proposal, make the necessary changes, and resubmit for approval.

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

Streamlyne Contacts

Two user manuals on Streamlyne have been added on the Streamlyne website <http://www.njit.edu/research/streamlyne/>

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

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

How-to-do-Videos

New “How to Do” videos have been posted on the research website <http://www5.njit.edu/research/streamlyne/>. These videos show step-by-step process on the following tasks:

- ◆ [How to Begin Proposal Submission in Streamlyne](#)
- ◆ [How to Input Proposal Budget](#)
- ◆ [How to Process Approvals](#)
- ◆ [How to Upload Proposal Attachments](#)
- ◆ [How to Search for a Proposal that is in Route](#)
- ◆ [Difference Between "Prime Sponsor Code" and "Sponsor Code"](#)
- ◆ [How to Select an RR Budget, RR Sub-award or Modular Budget](#)
- ◆ [How to Add a Student/Summary](#)
- ◆ [Participant Support Categories](#)
- ◆ [Supplies Specific Category Materials](#)
- ◆ [How to Create a Modular Budget](#)

Also, the following links may be helpful:

- ◆ [Streamlyne Benefits for Proposal Submission and Grant Management](#)
- ◆ [Grants.gov Presentation on Online Proposal Submission Systems](#)
- ◆ [Streamlyne Newsletter V2017.1](#)
- ◆ [Streamlyne FAQs](#)

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

John McCarthy, NCE Director of Research; (973) 596-3247; john.p.mccarthy@njit.edu
Cristo Leon, CSLA Director of Research; (973) 596-6426; cristo.e.yanezleon@njit.edu
Sean Andrews, YWCC Director of Research; (973) 596-5352; sean.t.andrews@njit.edu
Iris Pantoja, NCE, CoAD and MTSM Project Manager; 973-596-4483; irp3@njit.edu
