

NJIT Research Newsletter

Issue: ORN-2018-06

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

Streamlyne Question of the Week: Page 2

Recent Awards: Page 2

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

Webinars and Events: Page 4

Grant Opportunities: Page 7

Streamlyne Update: Page 23

Grant Opportunity Alerts

Keywords and Areas Included in the Grant Opportunity Alert Section Below

NSF: Computer Science for All (CSforAll:RPP) Researcher Practitioner Partnerships; Formal Methods in the Field (FMitF); US-EU Internet Core & Edge Technologies (ICE-T); Integrative Strategies for Understanding Neural and Cognitive Systems; Cultivating Cultures for Ethical STEM; Cyberinfrastructure for Sustained Scientific Innovation (CSSI) - Data and Software

NIH: NIH Support for Conferences and Scientific Meetings (Parent R13); Shared Instrumentation for Animal Research (SIFAR) Grant Program (S10); Shared Instrumentation Grant (SIG) Program (S10); High-End Instrumentation (HEI) Grant Program (S10); Cutting-Edge Basic Research Awards (CEBRA) (R21); Lab to Marketplace: Tools for Brain and Behavioral Research (R43/R44); Innovation Corps (I-Corps™) at NIH Program for NIH and CDC Translational Research

Department of Defense/US Army/DARPA/ONR: 2018 Office of Naval Research Basic Research Opportunity: "Advancing Artificial Intelligence for the Naval Domain"; 2018 ERDC Broad Agency Announcement ; Driven and Nonequilibrium Quantum Systems (DRINQS); FY 2018 Office of Naval Research (ONR) Navy and Marine Corps Science, Technology, Engineering & Mathematics (STEM), Millimeter-Wave Digital Arrays (MIDAS); Education and Workforce Program; Fiscal Year (FY) 2018 Funding Opportunity Announcement (FOA) for the Office of Naval Research (ONR)

Department of Energy: OPEN 2018; State Energy Program 2017 Competitive Awards

NASA: Astrophysics Research and Analysis; NASA Fellowship Activity 2018

National Endowment of Humanities: Fellowships; Institutes for Advanced Topics in the Digital Humanities

Streamlyne Update: New How-to-do Videos

Streamlyne Question of the Week

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

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

Recent Research Grant and Contract Awards

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

PI: Gennady Gor (PI)

Department: Chemical, Biological and Pharmaceutical Engineering

Grant/Contract Project Title: Travel Grant for International Workshop on Characterization of Porous Materials

Funding Agency: NSF

Duration: 04/01/18-05/31/19

PI: Yi Chen (PI)

Department: School of Management

Grant/Contract Project Title: A Study of Patient Decision Making by Big Data Analytics

Funding Agency: The Leir Foundation, Inc.

Duration: 03/01/17-02/28/19

PI: Janice Daniel (PI), A. Bladikas (Co-PI) and S. Bagheri (Co-PI)

Department: Civil and Environmental Engineering

Grant/Contract Project Title: Seat Belt Usage Study - 2018

Funding Agency: NSJDOT

Duration: 10/01/17-09/30/18

PI: Somenath Mitra (PI)

Department: Chemistry and Environmental Sciences

Grant/Contract Project Title: Biomass Conversion to Acrylonitrile Monomer-Precursor for Production of Carbon Fibers

Funding Agency: DOE

Duration: 12/18/17-05/31/19

PI: Treena Arinzeh (PI)

Department: Biomedical Engineering

Grant/Contract Project Title: Evaluation of the Cytocompatibility of Integra Matrices

Funding Agency: Integra Life Sciences

Duration: 01/19/15-04/30/18

PI: Kamalesh Sirkar (PI)

Department: Chemical, Biological and Pharmaceutical Engineering

Grant/Contract Project Title: (MAST Center) Membrane-Based Removal of Ammonia from a Waste Stream and its Recovery

Funding Agency: W.R. Grace & Co.

Duration: 01/01/18-12/31/18

PI: Tara Alvarez (PI)

Department: Biomedical Engineering

Grant/Contract Project Title: High Definition Transcranial Direct Current Stimulation (HD-tDCS) for Sensory Deficits in Complex Traumatic Brain Injury

Funding Agency: US Army

Duration: 09/30/17-09/29/18

In the News...

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

New Negotiations to Raise R&D Budget for Science: Although it is too early to say exactly how that additional domestic cash, if approved, will be allocated, some science agencies appear to be in line to benefit. Lawmakers in the Senate, for example, have proposed giving the National Institutes of Health (NIH) a \$2 billion increase in 2018, \$1 billion more than a raise proposed by the House of Representatives. The new deal tags \$2 billion over 2 years for NIH on top of about \$500 million it would receive in 2018 from the 21st Century Cures Act. The agreement would make an NIH increase somewhere between the House and Senate levels much more likely, if Congress can finally complete work on the 2018 spending package. (So far, the government has been funded by a series of so-called continuing resolutions that have essentially frozen agency spending at 2017 levels.) The National Science Foundation (NSF) could also benefit. The House, for example, has proposed keeping NSF's research budget flat in 2018, at about \$6 billion. But Representative John Culberson (R-TX), chairman of the appropriations subcommittee that oversees NSF's budget, has said he would move [to give it additional funding if Congress raised the caps](#).

R&D Investment: Before hearing testimony from [France Córdova](#), director of the National Science Foundation, and [Walter Copan](#), director of the National Institute of Standards and Technology, senators voiced alarm about America's shrinking lead in R&D investment. Cory Gardner (R-Colo.) co-sponsor of the 2017 American Innovation and Competitiveness Act, noted that while the United States still performs 26 percent of global R&D, "China is quickly closing the gap and is now spending about 21 percent of the global R&D total." Bill Nelson (D-Fla.) added: "At this rate, China may soon eclipse the U.S., and we will lose the competitive advantage that has made us the most powerful economy in the world." More information is posted on the website <https://www.commerce.senate.gov/public/index.cfm/hearings?ID=99ED6261-9C59-4B88-9F91-8D60E64787FE>

AI and Robotics: "The Pentagon's upcoming budget request will include increases to research funding for artificial intelligence and man-machine teaming," CQ reports, citing the vice chairman of the Joint Chiefs of Staff, U.S. Air Force Gen. Paul Selva. "Technology should enable war fighters to see, sense, decide and act faster, he said. . . Pentagon technologists haven't quite 'cracked the nut' on man-machine teaming yet, he said, referring to the practice of using machines to enhance a person's ability, like exo-skeleton suits."

Energy Innovation: Patents Increase: "The number of U.S. Patent and Trade Office patents granted in sustainable energy technologies doubled between 2009 and 2015. Six technologies—solar, hybrid and electric vehicles, smart grid, fuel cell, battery, capture and storage of carbon and other greenhouse gases—have led growth of these patents," the Indicators report. "U.S. inventors received the largest share of sustainable energy patents in 2016 (43%), followed by Japan (20%), and the EU (16%). Patenting by U.S. inventors has been led by four technologies—hybrid and electric vehicles, solar, smart grid, and energy storage," "Patents granted to South Korea more than quadrupled between 2009 and 2016, led by growth in energy storage, solar, hybrid/electric, and battery technologies." "Overall, the United States is the largest producer of high-technology manufacturing output with China being the largest global producer in the ICT manufacturing industries."

Webinar and Events

Event: Math Frontiers Monthly Webinar Series

Sponsor: National Academies

When: February 13, 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.

This is the only registration page for all webinars in the series. ***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.

February 13, 2018: *Mathematics of the Electric Grid*

Professors [Sean Meyn](#) and [Steven Low](#) will discuss mathematical applications for the preservation, stability, and resilience of the electric grid and other modern power systems.

March 13, 2018: *Probability for People and Places*

Professors [Kenneth L. Lange](#) and [Gregory F. Lawler](#) will discuss applications of probability theory, including how DNA results are used to calculate family ancestry. Application areas include investment analytics and game theory.

April 10, 2018: *Social and Biological Networks*

Professor [Alessandro Vespignani](#) and others will discuss the mathematics of social and biological networks and how the analysis of these networks can lead to new and exciting discoveries.

May 8, 2018: *Mathematics of Redistricting*

Professors [Jonathan Mattingly](#) and [Karen Saxe](#) will discuss the mathematics of political redistricting—the process of redrawing congressional and state legislative electoral districts.

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

Event: S-STEM 2018 Webinars

When: January 29, 2018 from 1.00 PM to 3.00 PM

February 6, 2018 from 3.00 PM to 5.00 PM

February 12, 2018 from 12.00 PM to 2.00 PM

Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=244322&org=NSF

Brief Description: Submissions to the NSF Scholarships in Science, Technology, Engineering, and Mathematics (S-STEM) Program are due by 5:00 p.m. local time Wednesday, 28 March 2018 in response to NSF solicitation 17-527. To answer any questions you may have about your potential submission, NSF S-STEM Program Directors will host a series of webinars in January and February. Please note that the webinars will be given in two styles: traditional and flipped. The first half-hour of a traditional webinar will consist of an overview of the program itself; this will be followed by a question-and-answer session. The entirety of a flipped webinar will be devoted to questions--the hosts of a flipped webinar will not give an overview of the program. To prepare for the flipped webinar, participants will be expected to have carefully read the solicitation ([click here](#)) and/or viewed the videos (bottom of this page) which will soon be updated with current versions. Additional information is available on the [NSF S-STEM program page](#).

Information about the FY2018 S-STEM webinars for prospective investigators is below:

Webinar 3

When: noon to 2:00 p.m. ET Thursday, 15 February

URL: <http://bit.ly/2E45aVo> Meeting number (access code): 742 904 512. Meeting

password: uVCjCm?2

Host: Ron Buckmire (mathematics, rbuckmir@nsf.gov)

Style: Traditional

NSF uses the conferencing program WebEx for webinars. To join a meeting, follow the associated link or URL. If you haven't used WebEx before, a small piece of software will be downloaded to your machine via your web browser. Once you join, make sure that "Call Using Computer" is displayed and then click on the big button to connect your audio. Video isn't required--to turn yours on, click the toggle.

To Join the webinar: Register at the above URL

Event: Mathematical Sciences Research Institutes

Sponsor: NSF

When: February 20, 2018 from 2.00 PM to 3.30 PM

Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=244064&org=NSF

Brief Description: This webinar will cover the [program solicitation \(NSF 17-553\)](#) and requirements for submission of proposals to the *Mathematical Sciences Research Institutes* program. There will be a question-and-answer session following the discussion.

Mathematical Sciences Research Institutes are national resources that aim to advance research in the mathematical sciences through programs supporting discovery and dissemination of knowledge in mathematics and statistics and enhancing connections to related fields in which the mathematical sciences can play important roles. Institute activities help focus the attention of some of the best mathematical minds on problems of particular importance and timeliness. Institutes are also community resources that involve a broad segment of U.S.-based mathematical sciences researchers in their activities. The goals of the Mathematical Sciences Research Institutes program include advancing research in the mathematical sciences, increasing the impact of the mathematical sciences in other disciplines, and expanding the talent base engaged in mathematical research in the United States.

The NSF Division of Mathematical Sciences invites proposals for projects that contribute to this important, influential activity.

- Webinar: February 20, 2018
- Letters of Intent due: December 14, 2018
- Proposals due: March 14, 2019

To join the webinar: Please register at

<https://nsf.webex.com/nsf/j.php?RGID=rfc62542ea791967e36b6bcd7991d9318> by February 16, 2018.

Event: Cyberinfrastructure for Sustained Scientific Innovation (CSSI) Program Webinar

Sponsor: NSF

When: February 23, 2018 from 1.00 PM to 2.30 PM

Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=244064&org=NSF

Brief Description: This solicitation focuses upon the integration of the data and software elements of advanced cyberinfrastructure. By integrating two major and long-running NSF program solicitations, Data Infrastructure Building Blocks (DIBBs) and Software Infrastructure for Sustained Innovation (SI2), under a single umbrella called [Cyberinfrastructure for Sustained Scientific Innovation \(CSSI\)](#), NSF seeks to enable funding opportunities that are flexible and responsive to the evolving and emerging needs in integrated data and software cyberinfrastructure.

The goal of the integrated CSSI program is to create a cyberinfrastructure (CI) ecosystem that spans all levels of the data and software stack and scales from individual or small groups of innovators to large community resources. The program addresses all aspects of cyberinfrastructure, from embedded sensor systems and instruments, to desktops and high-end data and computing systems, to major instruments and facilities. The program will continue to nurture the interdisciplinary processes required to support the entire data and software lifecycle, and will successfully integrate development and support with innovation and research. Furthermore, the program will result in the development of sustainable CI communities that transcend scientific and geographical boundaries. The program envisions vibrant partnerships among academia, government laboratories and industry, including international entities, for the development and stewardship of a sustainable infrastructure that can enhance productivity and accelerate innovation in science and engineering. Furthermore, integrated education activities will play a key role in developing and sustaining the cyberinfrastructure over time and in creating a workforce capable of fully realizing its potential to transform science and engineering.

To join the webinar: Please register at

<https://nsf.webex.com/nsf/onstag/g.php?MTID=e279566f7eb3399c4952a0e83c3c22acb>

by

11:59pm EDT on Thursday February 22, 2018.

Grant Opportunities

National Science Foundation

Grant Program: Computer Science for All (CSforAll:RPP) Researcher Practitioner Partnerships

Agency: National Science Foundation NSF 18-537

RFP Website: <https://www.nsf.gov/pubs/2018/nsf18537/nsf18537.htm>

Brief Description: This program aims to provide *all* U.S. students the opportunity to participate in computer science (CS) and computational thinking (CT) education in their schools at the preK-12 levels. With this solicitation, the National Science Foundation (NSF) focuses on researcher-practitioner partnerships (RPPs) that foster the research and development needed to bring CS and CT to all schools. Specifically, this solicitation aims to provide high school teachers with the preparation, professional development (PD) and ongoing support that they need to teach rigorous computer science courses; preK-8 teachers with the instructional materials and preparation they need to integrate CS and CT into their teaching; and schools and districts the resources needed to define and evaluate multi-grade pathways in CS and CT.

Awards: Standard grants; **Anticipated Funding Amount:** \$20,000,000

Letter of Intent: Not Required

Full Proposal Submission Deadline: May 09, 2018

Contacts: Janice Cuny, Program Officer, CISE/CNS, telephone: (703) 292-8489, email: jcuny@nsf.g

Grant Program: Formal Methods in the Field (FMitF)

Agency: National Science Foundation NSF 18-536

RFP Website: <https://www.nsf.gov/pubs/2018/nsf18536/nsf18536.htm>

Brief Description: The Formal Methods in the Field (FMitF) program aims to bring together researchers in formal methods with researchers in other areas of computer and information science and engineering to jointly develop rigorous and reproducible methodologies for designing

and implementing correct-by-construction systems and applications with provable guarantees. FMitF encourages close collaboration between two groups of researchers. The first group consists of researchers in the area of formal methods, which, for the purposes of this solicitation, is broadly defined as principled approaches based on mathematics and logic, including modeling, specification, design, program analysis, verification, synthesis, and programming language-based approaches. The second group consists of researchers in the “field,” which, for the purposes of this solicitation, is defined as a subset of areas within computer and information science and engineering that currently do not benefit from having established communities already developing and applying formal methods in their research. Initially the program will limit the field to these four areas that stand to directly benefit from a grounding in formal methods: computer networks, cyber-human systems, machine learning, and operating/distributed systems. However other field(s) may emerge as priority areas for the program in future years, subject to the availability of funds.

Each proposal must have at least one Principal Investigator (PI) or co-PI with expertise in formal methods and at least one with expertise in one or more of these fields: computer networks, cyber-human systems, machine learning, and operating/distributed systems. Proposals are expected to address the fundamental contributions to both formal methods and the respective field(s), and should include a proof of concept in the field along with a detailed evaluation plan that discusses intended scope of applicability, trade-offs and limitations. All proposals are expected to contain a detailed collaboration plan that clearly highlights and justifies the complementary expertise of the PIs in the designated areas, and describes the mechanisms for continuous bi-directional interaction.

Awards: Standard grants; **Anticipated Funding Amount:** \$8,000,000

Letter of Intent: Not Required

Full Proposal Submission Deadline: May 08, 2018

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

- Anindya Banerjee, Program Director, telephone: (703) 292-7885, email: abanerje@nsf.gov
- Dan R. Cosley, Program Director, telephone: (703) 292-8491, email: dcosley@nsf.gov

Grant Program: US-EU Internet Core & Edge Technologies (ICE-T)

Agency: National Science Foundation NSF 18-535

RFP Website: <https://www.nsf.gov/pubs/2018/nsf18535/nsf18535.htm>

Brief Description: The Division of Computer and Network Systems (CNS) within the National Science Foundation's (NSF) Directorate for Computer and Information Science and Engineering (CISE) supports research and education activities that seek to develop a better understanding of the fundamental properties of computer and network systems. The Networking Technology and Systems (NeTS) program in the CNS division supports transformative research on fundamental scientific and technological advances leading to the development of Next Generation Internet (NGI) and Advanced Wireless Networking (AWN) systems and technologies.

NSF/CISE and the European Commission's (EC) Directorate General for Communication Networks, Content and Technology (DG CONNECT) seek to enable US and European Union (EU) researchers to collaborate to address compelling research challenges in NGI and AWN. Topics of interest include, but are not limited to, software-defined infrastructures; network function virtualization; resource management in support of content delivery; open data architectures for shared, federated research infrastructures; advanced wireless technologies; and research software tools to support advanced wireless and smart city/community testbeds.

This NSF solicitation is expected to align with a related effort in the EC's Horizon 2020's Work Programme for 2018-2020. For funding under this solicitation, US investigators must describe: 1) collaborative research, 2) research collaboration initiation activities, or 3) research fellowships with counterpart EU investigators who have received, or are requesting funding separately under the EC Horizon 2020 Programme area on Information and Communication Technologies (ICT).

Awards: Standard grants; **Anticipated Funding Amount:** \$2,500,000

Each RC award may be up to \$300,000 over three years, and will be made to US organizations, pending availability of funds. Each RI award may be up to \$100,000 over up to 1 year, and will be made to US organizations, pending availability of funds. Each RF award may be up to \$50,000 over up to 1 year, with a fellowship duration of 2-6 months, and will be made to US organizations, pending availability of funds.

Letter of Intent: Not Required

Full Proposal Submission Deadline: May 07, 2018

Contacts: John "Jack" Brassil, telephone: (703) 292-8950, email: jbrassil@nsf.gov

- Monisha Ghosh, telephone: 703-292-8746, email: mghosh@nsf.gov

Grant Program: Integrative Strategies for Understanding Neural and Cognitive Systems

Agency: National Science Foundation NSF 18-533

RFP Website: <https://www.nsf.gov/pubs/2018/nsf18533/nsf18533.htm>

Brief Description: The complexities of brain and behavior pose fundamental questions in many areas of science and engineering, drawing intense interest across a broad spectrum of disciplinary perspectives while eluding explanation by any one of them. Rapid advances within and across disciplines are leading to an increasingly interwoven fabric of theories, models, empirical methods and findings, and educational approaches, opening new opportunities to understand complex aspects of neural and cognitive systems through integrative multidisciplinary approaches.

This program calls for innovative, convergent, boundary-crossing proposals that can best capture those opportunities and map out new research frontiers. NSF seeks proposals that are bold and risky, and transcend the perspectives and approaches typical of disciplinary research efforts. This cross-directorate program is one element of NSF's broader effort directed at Understanding the Brain, a multi-year activity that includes NSF's participation in the Brain Research through Advancing Innovative Neurotechnologies (BRAIN) Initiative (<https://www.nsf.gov/brain/>). NSF envisions a connected portfolio of transformative, integrative projects that create synergistic links across investigators and communities, yielding novel ways of tackling the challenges of understanding the brain in action and in context.

This solicitation extends the NCS program for three years, from FY2018 through FY2020, and offers the FRONTIERS proposal class, for larger projects, in FY2019. Integrative projects will be supported at scales reflecting increasing levels of collaboration and coordination toward strategic, potentially transformative research goals.

The program focuses on four aspects of neural and cognitive systems that are current targets of converging interdisciplinary interests. NCS projects must advance the foundations of one or more of these focus areas, as described further within the solicitation:

1. ***Neuroengineering and Brain-Inspired Concepts and Designs***
2. ***Individuality and Variation***
3. ***Cognitive and Neural Processes in Realistic, Complex Environments***
4. ***Data-Intensive Neuroscience and Cognitive Science***

Proposals must address both risk and reward: **high-risk, high-payoff approaches are expected.** Proposals must also be consistent with the missions of the participating directorates, while going beyond the scope of any NSF core program, or they will not be considered responsive to the solicitation.

Awards: Standard grants; **Anticipated Funding Amount:** \$15,000,000

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

February 20, 2018

FOUNDATIONS, FY2018 competition

December 07, 2018

FRONTIERS, FY2019 competition

Full Proposal Submission Deadline: April 17, 2018

Contacts: NCS Program Team, telephone: (703) 292-2485, email: ncs@nsf.gov

Grant Program: Cultivating Cultures for Ethical STEM

Agency: National Science Foundation NSF 18-532

RFP Website: <https://www.nsf.gov/pubs/2018/nsf18532/nsf18532.htm>

Brief Description: Cultivating Cultures for Ethical STEM (CCE STEM) funds research projects that identify (1) factors that are effective in the formation of ethical STEM researchers and (2) approaches to developing those factors in all the fields of science and engineering that NSF supports. CCE STEM solicits proposals for research that explores the following: 'What constitutes responsible conduct for research (RCR), and which cultural and institutional contexts promote ethical STEM research and practice and why?' Factors one might consider include: honor codes, professional ethics codes and licensing requirements, an ethic of service and/or service learning, life-long learning requirements, curricula or memberships in organizations (e.g. Engineers without Borders) that stress responsible conduct for research, institutions that serve under-represented groups, institutions where academic and research integrity are cultivated at multiple levels, institutions that cultivate ethics across the curriculum, or programs that promote group work, or do not grade. Do certain labs have a 'culture of academic integrity'? What practices contribute to the establishment and maintenance of ethical cultures and how can these practices be transferred, extended to, and integrated into other research and learning settings?

Successful proposals typically have a comparative dimension, either between or within institutional settings that differ along these or among other factors, and they specify plans for developing interventions that promote the effectiveness of identified factors.

CCE STEM research projects will use basic research to produce knowledge about what constitutes or promotes responsible or irresponsible conduct of research, and how to best instill students with this knowledge. In some cases, projects will include the development of interventions to ensure responsible research conduct.

Awards: Standard grants; **Anticipated Funding Amount:** \$3,150,000

Letter of Intent: Not Required;

Limit on Number of Proposals per Organization: 1

Only one proposal may be submitted by an eligible organization, as defined above, in which a member of their organization serves as the PI. Potential PIs are advised to contact their institutional office of research regarding processes used to select proposals for submission. Organizations submitting more than one proposal will be notified and given one week from notification to select one proposal for consideration. If one is not selected in that time period, all of those proposals will be returned without review. There is no limit on the number of proposals under which an organization may be included as a non-lead collaborator or sub-awardee.

Full Proposal Submission Deadline: April 17, 2018

Contacts: Frederick M. Kronz (SBE), telephone: (703) 292-7283, email: fkronz@nsf.gov

- Cassandra M. Dudka (OISE), telephone: (703) 292-7250, email: cdudka@nsf.gov
 - Robert D. Fleischmann (BIO), telephone: (703) 292-7191, email: rfleisch@nsf.gov
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Grant Program: Cyberinfrastructure for Sustained Scientific Innovation (CSSI) - Data and Software

Agency: National Science Foundation NSF 18-531

RFP Website: <https://www.nsf.gov/pubs/2018/nsf18531/nsf18531.htm>

Brief Description: The Cyberinfrastructure for Sustained Scientific Innovation (CSSI) umbrella program encompasses the long-running Data Infrastructure Building Blocks (DIBBs) and Software Infrastructure for Sustained Innovation (SI2) programs, as NSF seeks to enable funding opportunities that are flexible and responsive to the evolving and emerging needs in data and software cyberinfrastructure.

The CSSI umbrella program anticipates four classes of awards:

1. **Elements** (either *Data Elements* or *Software Elements*): These awards target small groups that will create and deploy robust capabilities for which there is a demonstrated need that will advance one or more significant areas of science and engineering.
2. **Framework Implementations** (either *Data Frameworks* or *Software Frameworks*): These awards target larger, interdisciplinary teams organized around the development and application of common infrastructure aimed at solving common research problems faced by NSF researchers in one or more areas of science and engineering, resulting in a sustainable community framework serving a diverse community or communities.
3. **Planning Grants for Community Cyberinfrastructure** (either *Community Data Cyberinfrastructure Planning Grants* or *Community Software Cyberinfrastructure Planning Grants*): Planning awards focus on the establishment of long-term capabilities in cyberinfrastructure, which would serve a research community of substantial size and disciplinary breadth.
4. **Community Cyberinfrastructure Implementations** (either *Community Data Cyberinfrastructure Implementations* or *Community Software Cyberinfrastructure Implementations*): These Community Software Cyberinfrastructure Implementations focus on the establishment of long-term hubs of excellence in cyberinfrastructure and technologies, which will serve a research community of substantial size and disciplinary breadth.

Awards: Standard grants; **Anticipated Funding Amount:** \$34,000,000

Letter of Intent: Not Required;

Full Proposal Submission Deadline: April 18, 2018

Contacts: Vipin Chaudhary, Program Director, CISE/OAC, telephone: (703) 292-2254, email: CSSIQueries@nsf.gov

- Amy Walton, Program Director, CISE/OAC, telephone: (703) 292-4538, email: CSSIQueries@nsf.gov
 - Rajiv Ramnath, Program Director, CISE/OAC, telephone: (703) 292-4776, email: CSSIQueries@nsf.gov
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National Institutes of Health

Grant Program: NIH Support for Conferences and Scientific Meetings (Parent R13 Clinical Trial Not Allowed)

Agency: National Institutes of Health PAR-18-648

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PA-18-648.html>

Brief Description: The purpose of the NIH Research Conference Grant (R13) is to support high quality scientific conferences that are relevant to the NIH's mission and to the public health. A conference is defined as a symposium, seminar, workshop, or any other organized and formal meeting, whether conducted face-to-face or via the internet, where individuals assemble (or meet virtually) for the primary purpose to exchange technical information and views or explore or clarify a defined subject, problem, or area of knowledge, whether or not a published report results from such meeting. The NIH recognizes the value to members of the research community and all other interested parties in supporting such forums.

A critical part of the application for NIH conference support is the documentation of appropriate representation of individuals from nationally underrepresented groups in the planning and implementation of, and participation in, the proposed conference. This includes selection of organizing committee members, speakers, and other invited participants, such as session chairs and panel discussants as well as general attendance. Underrepresented groups include individuals from nationally underrepresented racial and ethnic groups, individuals with disabilities, individuals from disadvantaged backgrounds, and women. See NIH Notice of Interest in Diversity, [NOT-OD-18-129](#). "Appropriate representation" can be determined by reviewing the availability of scientists from nationally underrepresented groups known to be working in a particular field of biomedical or behavioral research to the anticipated geographic conference area. If the application does not reflect appropriate representation, no award will be issued until program staff members are assured of concerted, effective recruitment and outreach efforts.

Awards: Application budgets are not limited but need to reflect the actual needs of the proposed project. The appropriate [NIH Conference Grant Contact](#) should be consulted for guidance regarding any IC-specific budget limitations.

Letter of Intent: Not Required

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

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

Grant Program: Shared Instrumentation for Animal Research (SIFAR) Grant Program (S10 Clinical Trial Not Allowed)

Agency: National Institutes of Health PAR-18-599

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-18-599.html>

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

NIH-funded investigators use many different vertebrate and invertebrate animals in biomedical research, including worms, flies, fish, and rodents. This Funding Opportunity Announcement (FOA) supports instrumentation requests related to all animal species needed for

NIH-supported biomedical research. NIH-funded investigators rely on a broad spectrum of technologies including nuclear magnetic resonance (NMR) and mass spectrometers, DNA and protein sequencers, biosensors, electron and confocal microscopes, cell-sorters, and biomedical imagers. This FOA supports requests for all available technologies to enhance research using animals or related biological materials such as tissue, cells, or germplasm, for the ultimate benefit of human health.

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

For example, applicants may request integrated systems to support animal research in any field of biomedical research, such as neurophysiology, cardiac physiology, immunology, developmental biology or neurobehavioral sciences. Similarly relevant are series of instruments for high-throughput experiments in research areas such as genomics, phenotyping, or metabolomics. Clusters of instruments may improve surgical approaches by incorporating robotics and real-time decision-making procedures based on imaging or molecular characterizations of tissue. A combination of microfluidics-related technologies with high-throughput and high-content screening may advance phenotyping procedures. Likewise, a combination of optical imaging, flow-cytometry, and mass spectrometry may improve and speed up molecular profiling. Also appropriate are integrated systems for cognitive-behavioral studies or advanced monitoring set-ups for comprehensive physiological and metabolic assessment.

Awards: Applications will be accepted for commercially available instruments only. At least one item of the requested instrumentation must cost at least \$50,000, after all applicable discounts. No instrument in a cluster can cost less than \$20,000, after all applicable discounts. There is no upper limit on the cost of each instrument, but the maximum award is \$750,000. Since the cost of the various instruments will vary, it is anticipated that the amount of the award will also vary.

Letter of Intent: Not Required

Deadline: May 31, 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: Cutting- Shared Instrumentation Grant (SIG) Program (S10 Clinical Trial Not Allowed)

Agency: National Institutes of Health PAR-18-600

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-18-600.html>

Brief Description: The purpose of this funding opportunity is to continue the Shared Instrumentation Grant (SIG) Program administered by ORIP. The objective of the Program is to make available to institutions expensive research instruments that can only be justified on a shared-use basis and that are needed for NIH-supported projects in basic, translational or clinical areas of biomedical and bio-behavioral research. The SIG Program provides funds to purchase or upgrade a single item of expensive, state-of-the-art, specialized, commercially available instrument or an integrated instrumentation system. An integrated instrumentation system is one in which the components, when used in conjunction with one another, perform a function that no

single component could provide. The components must be dedicated to the system and not used independently.

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

Instruments must be for research purposes only.

Awards: Applications will be accepted that request a single, commercially available instrument or an integrated system. The minimum award is \$50,000. There is no upper limit on the cost of the instrument, but the maximum award is \$600,000. Since the cost of the various instruments will vary, it is anticipated that the amount of the award will also vary.

It is expected that applicants will employ the best economical approaches, including securing academic discounts, to formulate the cost-effective budget while meeting users' scientific needs.

Letter of Intent: Not Required

Deadline: May 31, 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: High-End Instrumentation (HEI) Grant Program (S10 Clinical Trial Not Allowed)

Agency: National Institutes of Health PAR-18-598

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-18-598.html>

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

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

To facilitate the introduction of advanced cutting-edge instrumentation technologies to biomedical fields a risk-return trade-off is allowed when certain classes of instruments are requested. Accordingly, the HEI program supports the acquisition of unique instruments developed by reliable commercial vendors, provided the instruments are guaranteed by the manufacturer's one-year warranty. Due to the novelty of the technologies and the uniqueness of their implementation, specialized and technologically savvy groups of investigators will be qualified to lead the adoption of such instruments for biomedical research and the development of

innovative biomedical applications. Therefore, if such novel instrument is requested, the applicant should demonstrate special technical expertise, merging physical and biological sciences. Also, the applicant must provide a detailed training for the investigators listed in the application about the use of the novel technology to advance their research. Instruments must be for research purposes only.

Awards: Applications will be accepted that request a single, commercially available instrument or integrated system. The minimum award is \$600,001. There is no upper limit on the cost of the instrument, but the maximum award is \$2,000,000. Since the cost of the various instruments will vary, it is anticipated that the size of the award also will vary.

Letter of Intent: Not Required

Deadline: May 31, 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: Cutting-Edge Basic Research Awards (CEBRA) (R21-Clinical Trial Optional)

Agency: National Institutes of Health PAR-18-437

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-18-437.html>

Brief Description: Pharmacological, neurobiological, behavioral, cell biological and genetic research has provided insight into how addictive drugs exert their actions on the brain and other organs. Neurobiological, behavioral and cognitive studies have shown how addictive drugs affect behavior and information processing in the brain, and have helped to elucidate the normal behavioral and neurobiological processes that are "hijacked" by addictive substances. They have also helped us understand motivational aspects of SUDs and other relevant behaviors, emotional regulation, and decision-making processes.

Basic science discoveries have consistently been the basis for many major advances in both clinical and applied SUD research and have contributed to the development and implementation of successful treatment strategies for SUDs and pain. Basic research has also led to the discovery of new targets for medications, non-addictive treatments for pain, the development of new technologies that enhance prevention and treatment programs for SUDs, and new approaches for statistical analysis of epidemiological and clinical trials data. Basic research to establish new animal models and new methods to synthesize small molecules and immunotherapies has supported the development of new medications to treat SUDs. Basic research has also addressed how addictive substances interact with viral infections such as HIV, HBV, and HCV. In addition, new technologies and approaches, such as nanobiology, bioengineering, epigenomics, computational science, imaging methods and optogenetics have had a significant impact on cutting-edge research. However, there is still a need to increase our understanding of SUDs and related disorders through basic research in all these areas in order to develop effective diagnostic, treatment and prevention interventions to alleviate the pain and devastation of addiction.

Awards: The combined budget for direct costs for the two year project period may not exceed \$275,000. No more than \$150,000 in direct costs may be requested in any single year.

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

Deadline: August 20, 2018; December 20, 2018; August 20, 2019; December 20, 2019; August 20, 2020; and December 18, 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: Lab to Marketplace: Tools for Brain and Behavioral Research (R43/R44 - Clinical Trial Optional)

Agency: National Institutes of Health PAR-18-565

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-18-565.html>

Brief Description: The NIH and other research sponsors invest a significant amount of funds in the development of new technologies to study the brain and behavior, from basic and clinical perspectives, through a variety of mechanisms, including, from NIH, the R01, R21, R33, P01, P41, and P50 grants. This investment has produced a large number of technologies that include hardware (e.g., instruments, devices, etc.), software (e.g., computational models, informatics tools, data analytic methods, etc.) and wetware (e.g., cell-free assays, bioactive agents, imaging probes, etc.). While these technologies are put to good use by their developers, such non-commercial developers devote little attention to making their tools robust and easy to use by the broad research community. Consequently, the promise of these advanced technologies is often realized only by the tools' developers and their close associates. Moreover, ongoing support to maintain and update technologies in non-commercial settings is difficult to obtain.

In contrast, tools that are commercially available need to be sturdy and easy to use, and commercial success often provides the means for continued maintenance and improvements of the underlying technology. This funding opportunity announcement (FOA) is intended to help move useful technologies from non-commercial laboratories into the commercial marketplace by encouraging SBIR grant applications from small businesses for further development of such technologies that are relevant to the missions of the sponsoring NIH Institutes and Centers. The supported research and development will likely include making the tools more robust and easy to use, and will likely require close collaboration between the original developers of these technologies and SBCs. These partnerships may be accomplished in any of a number of ways, including the use of multiple program directors/principle investigators.

Awards: Budgets of up to total \$450,000 per year total cost for Phase I awards and \$750,000 per year total cost for Phase II awards, and \$1,000,000 per year total cost for Phase IIB may be requested

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

Deadline: [Standard dates](#) apply, by 5:00 PM local time of applicant organization.

*** Note new SBIR/STTR Standard Due 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: Special Program Announcement for 2018 Office of Naval Research Basic Research Opportunity: "Advancing Artificial Intelligence for the Naval Domain"

Agency: Department of Defense N00014-18-R-SN05

Website:

<https://www.fbo.gov/index?s=opportunity&mode=form&id=e82dda458211deb4dc7c9d76cbd90b39&tab=core&cvview=0>

Brief Description: ONR is interested in receiving white papers and proposals in support of advancing artificial intelligence for future naval applications. Work under this program will consist of basic research, and it will be funded under Budget Activity 1 (as defined in DoD

Financial Management Regulation Vol. 2B, Ch. 5). The overall S&T effort is envisioned to be conducted at the Technology Readiness Level (TRL) 1-3 stage.

Topic 1: Title: Integration of Domain Knowledge and Machine Learning

The main objective is to develop a principled computational framework for integrating domain knowledge and machine learning for fast and robust learning of diverse, complex concepts and tasks with light supervision. A complementary objective is to gain insights into how humans incorporate prior knowledge and learning from scant data to improve their skills and learn new concepts and tasks, and use these insights to inform the computational framework.

Topic 2 Title: Artificial Intelligence in support of Collaborative Complex Decision-Making

The objectives for this topic are: (i) to advance the scientific understanding of collaborative complex decision-making and (ii) to develop AI technologies that actively inform and assist either in individual tasks or in the overall decision-making process. Key features of the desired technologies are that they possess the ability to assess the relative meaning and task/context-sensitive importance of new or changing information, and convey or explain the basis of their recommendations in human-understandable terms.

Topic 3 Title: Decentralized Perception and Planning in Dynamic Environments

Advances in surveillance technology have led to large volumes of increasingly complex data streams. The challenge of deriving intelligence from such massive, distributed, and diverse data sources--often providing observations without bound--is a challenging issue for the Navy. To exploit the full potential of the data, the intricate dependencies within and among the data streams must be captured. This includes development of computational methods that model various dependencies that cope with noisy and incomplete data sources, integrate information from multiple sensing modalities, and coherently propagate and output measures of uncertainty. The goal of this topic is to develop the underlying science and tractable computational methods that enable flexible and resilient approaches to learning, sharing, reasoning, and exploiting representations of the mission intent for situational awareness by a team of agents within a more rigorous closed-loop framework.

Awards: Various

White Papers Deadline: March 22, 2018

Full Proposal Deadline: May 11, 2018

Contact Information: Dr. Marc Steinberg, ONR 35, 703-696-5115, marc.steinberg@navy.mil

Dr. Behzad Kamgar-Parsi, ONR 31, 703-696-5754, behzad.kamgarparsi@navy.mil

Grant Program: 2018 ERDC Broad Agency Announcement

Agency: Department of Defense W912HZ-18-BAA-01

Website:

<https://www.fbo.gov/index?s=opportunity&mode=form&id=26ed7ee8e4a65aa2487a81ebdf0ca239&tab=core&cvview=0>

Brief Description: The U.S. Army Engineer Research and Development Center (ERDC) has issued a Broad Agency Announcement (BAA) for various research and development topic areas. The ERDC consists of the Coastal and Hydraulics Lab (CHL), the Geotechnical and Structures Lab (GSL), the Reachback Operations Center (UROC), the Environmental Lab (EL) and the Information Technology Lab (ITL) in Vicksburg, Mississippi, the Cold Regions Research and Engineering Lab (CRREL) in Hanover, New Hampshire, the Construction Engineering Research Lab (CERL) in Champaign, Illinois, and the Geospatial Research Laboratory (GRL) in Alexandria, Virginia. The ERDC is responsible for conducting research in the broad fields of hydraulics, dredging, coastal engineering, instrumentation, oceanography, remote sensing, geotechnical engineering,

earthquake engineering, soil effects, vehicle mobility, self-contained munitions, military engineering, geophysics, pavements, protective structures, aquatic plants, water quality, dredged material, treatment of hazardous waste, wetlands, physical/mechanical/ chemical properties of snow and other frozen precipitation, infrastructure and environmental issues for installations, computer science, telecommunications management, energy, facilities maintenance, materials and structures, engineering processes, environmental processes, land and heritage conservation, and ecological processes. The BAA is available as an attachment to this posting and is also available at <http://erdc.usace.army.mil>. The BAA is open until superseded. Proposals may be accepted at any time.

Awards: Various

Proposal Deadline: January 31, 2019

Contact Information: For questions regarding proposals to CHL, GSL, EL, ITL, CRREL, and UROC submit your question to the following e-mail address: ERDC-BAA@usace.army.mil. You may also contact Frank Spears at 601-634-3908 or via email at Frank.Spears@usace.army.mil.

Grant Program: Driven and Nonequilibrium Quantum Systems (DRINQS)

Agency: Department of Defense HR001118S0024

Website: <https://www.darpa.mil/work-with-us/opportunities?oFilter=2>

Brief Description: The performance of quantum sensors and devices is intimately dependent on the time the underlying system retains its quantum properties, namely its coherence time, T_2 . Interactions within the system and with a noisy environment are typically the limiting factors of T_2 ; therefore, the best devices require extremely clean control signals and cryogenic operation to reduce thermal noise. This has limited the applicability and adoption of quantum technology in various applications of interest to national security, including high performance clocks for holdover in GPS-denied environment and magnetometers for magnetic navigation and life-science imaging. Over the last couple of years, a new paradigm for overcoming the limitations of coherence in large-scale quantum systems has been proposed: the coherence of a system may be stabilized by driving it out of equilibrium. One example of this phenomenon is a discrete time crystal (DTC). In this driven system, a combination of interactions and disorder force the system into a state in which it thermalizes at a much lower rate than when not driven. In addition, the system exhibits an increased resilience against perturbations in the drive than in the absence of interactions and disorder. This phenomenon has recently been experimentally observed with trapped ions and Nitrogen-Vacancy (NV) color centers in diamond. Another example is the stabilization of coherence in quantum materials when driven with strong electromagnetic fields, such as the inducement of superconductivity at high temperatures using laser pulses, albeit for a short period of time. Novel non-equilibrium phases may be produced by selectively exciting phonons thus changing the structural and electronic properties of the material in a controlled way.

Awards: Various

Proposal Deadline:

Abstract Due Date: February 13, 2018, 4:00 p.m. o FAQ Submission Deadline: March 26, 2018, 4:00 p.m. See Section VIII.A. o Full Proposal Due Date: April 2, 2018, 4:00 p.m

Applications must be received no later than 28 September 2018 (Friday) at 11:59 PM ET

Contact Information: R. Alejandra Lukaszew, Program Manager, DARPA/DSO DRINQS@darpa.mil

Grant Program: FY 2018 Office of Naval Research (ONR) Navy and Marine Corps Science, Technology, Engineering & Mathematics (STEM), Education and Workforce Program

Agency: Department of Defense N00014-18-S-F003

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.

Awards: Various

Proposal Deadline:

White Papers must be received between 2 April 2018 (Monday) with a deadline of 31 July 2018 (Tuesday) at 5:00 PM Eastern Time

Applications must be received no later than 28 September 2018 (Friday) at 11:59 PM ET

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: Millimeter-Wave Digital Arrays (MIDAS)

Agency: Department of Defense DARPA HR001118S0020

Website:

<https://www.fbo.gov/index?s=opportunity&mode=form&id=d8c414aaf7c707bc4f7ac896a7b68b29&tab=core&cvview=0>

Brief Description: DARPA seeks innovative proposals for the development of element-level digital beamforming array technology at millimeter wave frequencies. The primary goal of the program is to develop and demonstrate a tile building block sub-array (>16 elements) that supports scaling to large arrays (100⁺-10,000+) in the 18-50 GHz band. It is expected that this will be enabling hardware for multi-function, multi-beam phased array applications and emerging massive multiple-input-multiple-output (MIMO) techniques in communication and sensing.

Awards: Various

Proposal Deadline: Mar 26, 2018 The full proposal must be submitted via the DARPA BAA website on or before 1:00 p.m., EST 26 March 2018 in order to be considered during the initial round of selections; however, proposals received after this deadline may be received and evaluated up to five months (150 days) from date of posting on FedBizOpps.

Contact Information: HR001118S0020@darpa.mil

Grant Program: C4ISR, Information Operations and Information Technology System Research

Agency: Department of Defense N66001-17-S-3601

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

Brief Description: The Space and Naval Warfare Systems Center, Pacific (SSC Pacific) is soliciting white papers and proposals in accordance with Federal Acquisition Regulation (FAR) 6.102(d) (2), FAR 35.016 and Department of Defense Grant and Agreement Regulations (DoDGARS) 22.315(a) which provides for competitive selection of basic research, applied research, advanced technology development, and advanced component development and prototype (hereinafter referred to as research). Submissions in response to this announcement shall be for areas relating to the advancement of Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) capabilities, enabling technologies for Information Operations and Cyber Operations, and Information Technology systems. Accordingly, proposals selected for award are considered to be the result of full and open competition and fully compliant with PL 98-369, "The Competition in Contracting Act of 1984." This BAA is for procurement contracts (hereinafter referred to as contracts), grants, cooperative agreements, and other transactions. Proposed research should investigate unique and innovative approaches for defining and developing next generation integratable C4ISR capabilities and command suites.

Awards: Various

Proposal Deadline: May 14, 2018

Contact Information: David Roden Administrative Specialist Phone 619-553-2087

Grant Program: Defense Enterprise Science Initiative (DESI)

Agency: Department of Defense FA9550-18-S-B001

Website: <https://www.grants.gov/web/grants/view-opportunity.html?oppId=299112>

Brief Description: The Department of Defense (DoD) Defense Enterprise Science Initiative (DESI) is a pilot program that supports use-inspired basic research performed by university-industry teams. DESI is sponsored by the Office of the Assistant Secretary of Defense for Research and Engineering (OASD/R&E), and is run in collaboration with the Air Force Research Lab (AFRL), the Air Force Office of Scientific Research (AFOSR), and the Army Research Office (ARO).

Awards: Award Ceiling: \$6,000,000

Proposal Deadline: February 28, 2018

Contact Information: Calvin Scott Grantor Phone 703-696-7308

Department of Energy

Grant Program: OPEN 2018

Agency: Department of Energy DE-FOA-0001858

Website: <https://arpa-e-foa.energy.gov/#FoaIded06b7da-00fc-49eb-9ac0-22e052e62640>

Brief Description: This FOA marks the fourth OPEN solicitation in the history of ARPA-E. The previous OPEN solicitations were conducted at the inception of the agency in 2009 and again in 2012 and 2015. OPEN 2018 therefore continues the three-year periodic cycle for ARPA-E OPEN solicitations. An OPEN solicitation provides a vitally important mechanism for the support of innovative energy R&D that complements the other primary mechanism, which is through the solicitation of research projects in focused technology programs. ARPA-E's focused programs

target specific areas of technology that the agency has identified, through extensive interaction with the appropriate external stakeholders, as having significant potential impact on one or more of the Mission Areas described in Section I.A of the FOA. Awards made in response to the solicitation for focused programs support the aggressive technical targets established in that solicitation. Taken in total, ARPA-E's focused technology programs cover a significant portion of the spectrum of energy technologies and applications.

ARPA-E's OPEN FOAs ensure that the agency does not miss opportunities to support innovative energy R&D that falls outside of the topics of the focused technology programs or that develop after focused solicitations have closed. OPEN FOAs provide the agency with a remarkable sampling of new and emerging opportunities across the complete spectrum of energy applications and allow the agency to "take the pulse" of the energy R&D community. OPEN FOAs have been and will continue to be the perfect complement to the agency's focused technology programs – a unique combination of approaches for supporting the most innovative and current energy technology R&D. Indeed, one third of the sixty projects featured in the first two volumes describing ARPA-E impacts stem from OPEN solicitations (<https://arpa-e.energy.gov/?q=site-page/arpa-e-impact>). Potential applicants to this FOA are strongly encouraged to examine the OPEN projects in these two volumes and all of the projects supported in the previous three OPEN solicitations (<https://arpa-e.energy.gov/?q=site-page/open>) for examples of the creative and innovative R&D ARPA-E seeks in its OPEN solicitations.

Awards; Up to \$10,000,000; Available Funding: \$100,000,000

Submission Deadline: Applicants are strongly encouraged to submit their applications at least 48 hours in advance of the submission deadline.

- Concept Paper Submission Deadline: 02/02/2018 5:00 PM ET
- Full Application Submission Deadline: 3/16/2018 5:00 PM ET

Contact Information:

- ExchangeHelp@hq.doe.gov

Please contact the email address above for questions regarding ARPA-E's online application portal, ARPA-E eXCHANGE.

- ARPA-E-CO@hq.doe.gov

Please contact the email address above for questions regarding Funding Opportunity Announcements. ARPA-E will post responses on a weekly basis to any questions that are received. ARPA-E may re-phrase questions or consolidate similar questions for administrative purposes.

NASA

Grant Program: Astrophysics Research and Analysis

Agency: NASA NNH17ZDA001N-APRA

Website:

<https://nspires.nasaprs.com/external/solicitations/summary.do?sollid=%7BFA4087E9-4195-3F70-F210-1B856CACD947%7D&path=open&method=init>

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

Technology Readiness Level (TRL) 1 through TRL9. The emphasis of this program element is on technologies and investigations that advance NASA astrophysics missions and goals.

The APRA program seeks to support research that addresses the best possible (i) state-of-the-art detector technology development for instruments that may be proposed as candidate experiments for future space flight opportunities; (ii) science and/or technology investigations that can be carried out with instruments flown on suborbital sounding rockets, stratospheric balloons, or other platforms; and (iii) supporting technology, laboratory research, and/or (with restrictions) ground-based observations that are directly applicable to space astrophysics missions. To meet these goals, proposals are solicited in the following five broad categories:

- Suborbital/Suborbital-class Investigations
- Detector Development
- Supporting Technology
- Laboratory Astrophysics
- Ground-Based Observations.

Awards: Various

Notice of Intent: January 26, 2018

Proposal Deadline: March 15, 2018

Contact: Michael R. Garcia Astrophysics Division Science Mission Directorate NASA Headquarters Washington, DC 20546-0001 Telephone: (202) 358-1053 Email: Michael.R.Garcia@nasa.gov

Grant Program: NASA Fellowship Activity 2018

Agency: NASA NNH18ZHA003N

Website: <https://spacegrant.carthage.edu/live/news/17617-call-for-proposals-nasa-fellowship-activity-2018>

<https://nspires.nasaprs.com/external/solicitations/summary!init.do?solId=%7b1CA633C8-7767-8658-6260-F318694A347B%7d&path=open>

Brief Description: NASA Fellowship Activity 2018 is seeking student authored and independently conceived graduate research proposals responding to a NASA Research Opportunity listed in the solicitation. The purpose of the NASA Fellowship Activity 2018 is to support the vitality and diversity of the STEM workforce of NASA and the United States by training and funding graduate students during their STEM academic endeavors and providing access to NASA, its content, unique facilities, and STEM experts. The program details and requirements are outlined in the solicitation document. To be eligible to submit a proposal, candidates must be U.S. citizens or naturalized citizens who hold a bachelor's degree in a STEM field earned before Aug. 31, 2018. Candidates must be enrolled in a master's or doctoral degree program no later than Sept. 1, 2018, and intend to pursue a research-based Masters or Ph.D. program in a NASA-relevant field.

Awards: Anticipated Funding Amount: \$1,500,000

Notice of Intent: Not Required

Proposal Deadline: March 20, 2018

Contact: <http://nspires.nasaprs.com/> (help desk available at (202) 479-9376)

National Endowment of Humanities

Grant Program: Fellowships

Agency: National Endowment of Humanities

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

Brief Description: Fellowships support individuals pursuing advanced research that is of value to humanities scholars, general audiences, or both. Recipients usually produce articles, monographs, books, digital materials, archaeological site reports, translations, editions, or other scholarly resources in the humanities.

Applicants interested in research projects that require digital expression and digital publication are encouraged to apply for [NEH-Mellon Fellowships for Digital Publication](#).

Awards: NEH has increased the Fellowships monthly stipend from \$4,200 to \$5,000. As a result, the minimum award is now \$30,000 (for six months of full-time work). The maximum award is now \$60,000 (for twelve months of full-time work).

Proposal Deadline: April 11, 2018

Contact: Contact NEH's Division of Research Programs at 202-606-8200 or fellowships@neh.gov.

Grant Program: Institutes for Advanced Topics in the Digital Humanities

Agency: National Endowment of Humanities

Website: <https://www.neh.gov/grants/odh/institutes-advanced-topics-in-the-digital-humanities>

Brief Description: The Institutes for Advanced Topics in the Digital Humanities (IATDH) program supports national or regional (multistate) training programs for scholars, humanities professionals, and advanced graduate students to broaden and extend their knowledge of digital humanities. Through this program NEH seeks to increase the number of humanities scholars and practitioners using digital technology in their research and to broadly disseminate knowledge about advanced technology tools and methodologies relevant to the humanities.

The institutes may be a single opportunity or offered multiple times to different audiences. Institutes may be as short as a few days and held at multiple locations or as long as six weeks at a single site. For example, training opportunities could be offered before or after regularly occurring scholarly meetings, during the summer months, or during appropriate times of the academic year. The duration of a program should allow for full and thorough treatment of the topic.

These professional development programs may focus on a particular computational method, such as network or spatial analysis. They may also target the needs of a particular humanities discipline or audience.

Awards: Up to \$250,000

Proposal Deadline: March 13, 2018

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

Streamlyne Contacts

It has been very exciting to introduce Streamlyne as the new tool for Grant Management. Streamlyne is simplifying the pre-award proposal submission processes promoting shared information technology (IT), and improving the timeliness of grant close out. Currently Streamlyne system has been customized in the following areas:

- Download the package with all forms – there are still some exceptions to this as the federal government continues to change some of the standard forms.

- Validation error prior to submission – this allows to review the package for errors
- Work Flow approval transparent to all users
- Budget forms customized to NSF and/or S2S
- Sub-award budgets easily download – this will allow better management of the award

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