

# NJIT Research Newsletter

Issue: ORN-2018-11

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**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/>.

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## Grant Opportunity Alerts

Keywords and Areas Included in the Grant Opportunity Alert Section Below

**NSF:** Small Business Technology Transfer Program Phase I (STTR); Small Business Innovation Research Program Phase I (SBIR); Planning Grants for Engineering Research Centers (ERC); Future of Work at the Human - Technology Frontier: Advancing Cognitive and Physical Capabilities (FW-HTF); Cybersecurity Innovation for Cyberinfrastructure (CICI); Innovations at the Nexus of Food, Energy and Water Systems (INFEWS); Coupling, Energetics, and Dynamics of Atmospheric Regions (CEDAR); Partnerships between Science and Engineering Fields and the NSF TRIPODS Institutes; Smart and Connected Health (SCH)

**NIH:** BRAIN Initiative: New Technologies and Novel Approaches for Large-Scale Recording and Modulation in the Nervous System (R01); NEI Translational Research Program (TRP) to Develop Novel Therapies and Devices for the Treatment of Visual System Disorders (R24); New Concepts and Early - Stage Research for Large - Scale Recording and Modulation in the Nervous System (R21); Ruth L. Kirschstein National Research Service Award (NRSA) Individual Predoctoral Fellowship; Ruth L. Kirschstein National Research Service Award (NRSA) Individual Postdoctoral Fellowship; Ruth L. Kirschstein National Research Service Award (NRSA)

**Department of Defense/US Army/DARPA/ONR:** Air Force Fiscal Year 2019 Young Investigator Research Program (YIP); Army Research Institute for the Behavioral and Social Sciences Broad Agency Announcement for Basic Scientific Research (2018); 2018 ERDC Broad Agency Announcement; FY 2018 Office of Naval Research (ONR) Navy and Marine Corps Science, Technology, Engineering & Mathematics (STEM)

**Department of Energy:** Critical Water Issues Prize Competition RFI; Solid Oxide Fuel Cells Core Technology Research; Flexible Combined Heat and Power for Grid Reliability and Resiliency

**EPA (Environmental Protection Agency):** 2018 Healthy Communities Grant Program; FY 2019 Pollution Prevention Grant Program

**NASA:** Astrophysics Data Analysis; Discovery Data Analysis; Advanced Information Systems Technology  
**National Endowment of Humanities:** Fellowships; Fellowships for Advanced Social Science Research on Japan  
**Robert Wood Johnson Foundation:** Integrative Action for Resilience: Progress Through Community-Research Partnerships  
**Bill & Melinda Gates Foundation:** Grand Challenges Exploration (GCE)  
**Whitehall Foundation:** Research Grants in Neurobiology  
**Streamlyne Update:** New How-to-do Videos

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### Streamlyne Question of the Week

Question: How can I review budget reports and print out a detailed budget summary to a prospective sponsor/collaborator for review purposes?

Answer: Once you have developed your budget in Streamlyne, go to the left-hand menu of your proposal development document and select **Budget Versions**.

- 1) The **Budget Versions** screen will show the budget versions you have worked on. Select the version that is complete, assign it as “final” and change the budget status from “incomplete” to “complete”.
- 2) On the left-hand menu of the budget screen, select **Budget Actions**.
- 3) On the **Budget Actions**, select the option **Print Forms**.
- 4) The **Print Forms** screen will show several reports. These reports provide summary as well as details and specific calculations for review.

1	Budget Costshare Summary Report	Print
2	Budget Cumulative Report	Print
3	Budget Salary Report	Print
4	Budget Summary Report	Print
5	Budget Summary Total Report	Print
6	Industrial Budget Report	Print
7	Industrial Cumulative Budget Report	Print

You can print and save PDF versions of any or all reports by the following steps:

1. Click the section header to expand the Print Forms section.
2. Identify which form you would like to print.
3. If you would like to capture any relevant budget comments on the form, click the corresponding Print Budget Comments checkbox.
4. Click the corresponding Print button to generate a PDF of the form.
5. Your operating system will prompt you to open or save the downloaded PDF. Follow these prompts to save the document.
6. Repeat Steps 2 through 5 until all desired forms are generated.

You may also elect to print out a budget summary in the “NSF” format or in a generic budget table format. You can do so by the following steps:

1. On the left-hand side menu of the Proposal Development Document, select the **Proposal Actions** tab.
2. On the **Proposal Actions** screen, select **Print**.
3. Select **Show** under the Print Sponsor Form Packages". On this screen, there are options to select individual budget periods as well as a summary budget.

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

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### **Special Announcement**

#### **2018 NJIT President's Forum and Faculty Research Showcase**

March 26, 2018; Ballroom A and B, Campus Center

**2018 NJIT President's Forum and Faculty Research Showcase** will start with the Keynote and President's Forum Lecture from Dr. Wendy Nilsen, Program Director for the Smart and Connected Health Program in the Directorate for Computer & Information Science & Engineering at the National Science Foundation. The showcase will introduce new faculty who joined NJIT in AY2018 with their brief oral presentations followed by electronic poster session. The electronic poster and networking session will include electronic poster presentations by new faculty and faculty seed grant recipients.

#### Agenda

- |                      |   |
|----------------------|---|
| 10.00 AM - 10.15 AM: | Welcome Remarks<br>Joel Bloom, President<br>Vince DeCaprio, Vice Chair, BOT<br>Fadi Deek, Provost and Senior Executive VP |
| 10.15 AM - 10.20 AM: | Speaker Introduction<br>Atam Dhawan, Senior Vice Provost for Research   |
| 10.20 AM - 11.30 AM: | President's Forum: Keynote Lecture<br>Dr. Wendy Nilsen, Program Director, NSF   |
| 11.30 AM - 12.30 PM: | Lunch and Networking  |
| 12.30 PM - 2.00 PM:  | New Faculty Presentations   |
| 2.00 PM - 3.00 PM:   | Poster Presentations and Networking Session:<br>New Faculty and Faculty Seed Grant Recipients                             |

**Speaker Bio:** Wendy Nilsen, Ph.D. is a Program Director for the Smart and Connected Health Program in the Directorate for Computer & Information Science & Engineering at the National Science Foundation. Her work focuses on the intersection of technology and health. This includes a wide range of methods for data collection, advanced analytics and the creation of effective cyber-human systems. Her interests span the areas of sensing, analytics, cyber-physical systems,

information systems, big data and robotics. More specifically, her efforts include: serving as co-chair of the Health Information Technology Research and Development working group of the Networking and Information Technology Research and Development Program; the lead for the NSF/NIH Smart and Connected Health announcement; convening workshops to address methodology in technology in health research; serving on numerous federal technology initiatives; and, leading training institutes. Previously, Wendy was at the National Institutes of Health.

**Keynote Lecture: Solving Wicked Problems with Science**

**Abstract:** Science is changing rapidly and new transdisciplinary approaches are resulting in transformative change across domains. Complex issues, such as in healthcare, have begun to be addressed with convergent approaches that involve expertise from a range of diverse disciplines. This has resulted in new methods and findings that could not have happened a decade earlier. Computing, information science, informatics and engineering are especially poised to contribute to these changes by bringing sophisticated techniques to partnerships in the biomedical and bio-behavioral realms. This talk will cover some current advances and a vision for a smarter community, using the area of health and medicine as an example.

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This President's forum is a featured event in the Albert Dorman Honors College Colloquium Series and is made possible in part by the generous support of the DeCaprio Family.

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**Internal Competition for Limited Submission**

**Grant Program: Cybersecurity Innovation for Cyberinfrastructure (CICI)**

**Agency: National Science Foundation NSF 18-547**

**RFP Website:** <https://www.nsf.gov/pubs/2018/nsf18547/nsf18547.htm>

**Brief Description:** The objective of the Cybersecurity Innovation for Cyberinfrastructure (CICI) program is to develop, deploy and integrate security solutions that benefit the scientific community by ensuring the integrity, resilience and reliability of the end-to-end scientific workflow. CICI seeks three categories of projects:

1. **Secure Scientific Cyberinfrastructure:** These awards seek to secure the scientific workflow by encouraging novel and trustworthy architectural and design approaches, models and frameworks for the creation of a holistic, integrated security environment that spans the entire scientific CI ecosystem;
2. **Collaborative Security Response Center:** This single award targets the development of a community resource to provide security monitoring, analysis, expertise, and resources Research & Education (R&E) cyberinfrastructure staff, regardless of physical location or organization; and
3. **Research Data Protection:** These awards provide solutions that both ensure the provenance of research data and reduce the complexity of protecting research data sets regardless of funding source.

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

**Limit on Number of Proposals per Organization:** Organizations are limited to 2 CICI proposals. These eligibility constraints will be strictly enforced in order to treat everyone fairly and consistently. In the event that an organization exceeds this limit, proposals received within the limit will be accepted based on earliest date and time of proposal submission (i.e., the first two

proposals received will be accepted and the remainder will be returned without review). No exceptions will be made.

**Limit on Number of Proposals per PI or Co-PI:** An individual can participate as PI, co-PI or senior personnel on no more than two CICI proposals. Note that any individual whose biographical sketch is provided as part of the proposal will be considered as Senior Personnel in the proposed activity, irrespective of whether that individual will receive financial support from the project.

**Internal Competition:** Please inform **Atam Dhawan, Senior Vice Provost for Research at [dhawan@njit.edu](mailto:dhawan@njit.edu)** by **April 2, 2018, if you intend to submit a proposal as PI or Co-PI.** In case there are more than two intents of submissions are received, there will be an internal competition set for submission of pre-proposals. Please note that no intent of proposal submission will be accepted after April 2, 2018 for selection of proposals for submission to NSF.

**Letter of Intent:** Not Required

**Full Proposal Submission Deadline:** June 04, 2018

**Contacts:** Kevin Thompson, Program Director, CISE/OAC, telephone: (703) 292-4220, email: [kthomps@nsf.gov](mailto:kthomps@nsf.gov)

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### **Recent Research Grant and Contract Awards**

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

**PI:** Shawn Chester (PI)

**Department:** Mechanical and Industrial Engineering

**Grant/Contract Project Title:** CAREER: Modeling and Experiments on Chemically Reacting Polymeric Materials

**Funding Agency:** NSF

**Duration:** 08/01/18-07/31/23

**PI:** Sergei Adamovich (PI)

**Department:** Biomedical Engineering

**Grant/Contract Project Title:** Kessler Research Agreement to Develop Medical Research Programs

**Funding Agency:** Kessler Foundation

**Duration:** 03/01/18-02/28/19

**PI:** Kurt Rohloff (PI)

**Department:** Computer Science

**Grant/Contract Project Title:** "OPERA - Safeware"

**Funding Agency:** DARPA

**Duration:** 07/27/15-07/26/19

**PI:** Lou Kondic (PI)

**Department:** Mathematical Sciences

**Grant/Contract Project Title:** Structure Evolution during Phase Separation in Colloids under Microgravity

**Funding Agency:** NASA

**Duration:** 08/16/16-08/15/18

**PI:** Siva Nadimpalli (PI)

**Department:** Mechanical and Industrial Engineering

**Grant/Contract Project Title:** Mechanics of Binder-Particle Interaction in Composite Battery Electrodes

**Funding Agency:** Office of Naval Research

**Duration:** 04/01/17-05/13/19

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### **In the News...**

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

**Global R&D 2018 Forecast:** Ten years ago, the largest industrial R&D organizations were automotive and pharmaceutical /biotechnology companies, dominated by the likes of Volkswagen, General Motors, Pfizer, Roche, Johnson & Johnson and Novartis. Their annual R&D expenditures ranged between \$1 and \$8 billion. The life science companies are still responsible for more than \$180 billion in R&D in 2018. But R&D in the life science industry is growing at about 4% per year, while the aggregate R&D in the Information & Communication Technology (ICT) industry is growing at more than 5% per year, with global R&D spending of more than \$225 billion—nearly 30% more than that of the life science industry. The top five R&D spending organizations are also ICT companies—Amazon, Google/Alphabet, Microsoft, Facebook and Intel. ICT R&D annual expenditures now range between \$10 and \$24 billion and these “frightful five” collectively spent more than \$60 billion on R&D in 2017—about the same as the U.S. Federal Government spent on non-defense R&D. These companies also have stock evaluations that dominate the overall stock market with annual growth valuations between 25% and 50% in 2017. ICT, in fact, has become a global driving force. With its artificial intelligence (AI), autonomous systems, robotics and virtual environment systems, ICT looks to change the overall technological environment within 10 to 15 years. It has been noted that about 60% of the children being born today will work in jobs in 20 years that don’t even exist today.

Another continuing trend is that on a global level—not just in the U.S.—government support of R&D has declined by 2.4% since 2010, according to data collected by the Organization for Economic Cooperation and Development (OECD). Businesses during this same accounting period (2010 to 2014) also were noted as increasing their R&D spending by 2.5%, with most advanced economies providing preferential tax treatment to industrial R&D investments. This particular trend is expected to continue into the foreseeable future.

From the ***2018 Global R&D Forecast Report*** posted on the website [http://digital.rdmag.com/researchanddevelopment/2018\\_global\\_r\\_d\\_funding\\_forecast?pg=1#pg1](http://digital.rdmag.com/researchanddevelopment/2018_global_r_d_funding_forecast?pg=1#pg1)

**Department of Defense Science and Technology Programs:** DARPA Director Steven Walker said "the advanced electronics industry is at an inflection point. Design work and fabrication now required to keep on pace is becoming ever more difficult and expensive, and the pace of homegrown innovation is slowing." DARPA's Electronics Resurgence Initiative (ERI) aims to create technology that marginalizes traditional circuit technology. "Over the next four years, ERI will commit hundreds of millions of dollars to nurture research in advanced materials, circuit design tools, and new system architectures." A key ERI component is the Joint University

Microelectronics Program (JUMP) "to build up a fundamental research base in fields underlying microelectronic technologies." Walker also said DARPA "is now framing and leading the 'third-wave' of AI," involving "contextual reasoning, the ability to effectively convey to human users how and why specific decisions are made." The full House Armed Services committee will likely consider the National Defense Authorization Act May 9. See all the defense science agency. More information is posted on the website <https://armedservices.house.gov/hearings/review-and-assessment-fiscal-year-2019-budget-request-department-defense>

**Intelligence Advanced Research Projects Activity (IARPA) Report:** Part of the Director of National Intelligence office, IARPA sponsors "high-risk, high-payoff research" that tackles complex, multidisciplinary problems" and that "delivers innovative technology for future overwhelming intelligence advantage. Only less than 15 percent of research at the little-known Intelligence Advanced Research Projects Activity is classified. It specializes in analysis of torrents of data, "anticipatory intelligence" on events like the Arab Spring or disease outbreaks, collection, and computing. Programs can last three to five years, but IARPA will also fund 12-18-month "seedlings." In one respect, IARPA is a traditional spy shop. Access to the building is "not user friendly." PowerPoint presentation from Program Manager Kristen Jordan is posted on the website <https://seafle.asee.org/d/1583f4cbbb/files/?p=/2018%20ERC%20Annual%20Conference/Tuesday/6.%20Building%20New%20Engagements%20with%20Fed.%20Agencies/Jordan%20%20Kristen%20IARPA%20Overview.pdf>

**NSF Opens Prep Competition for Next-Gen ERCs:** The National Science Foundation's venerable Engineering Research Centers program "is placing greater emphasis on research that leads to societal impact, including convergent approaches, engaging stakeholder communities, and strengthening team formation," NSF says in announcing a **planning grant competition**. It "is designed to foster and facilitate the engineering community's thinking about how to form convergent research collaborations. To participate in the upcoming ERC competition, one is not required to submit a planning grant proposal nor to receive a planning grant." The solicitation follows an NSF-commissioned study by the National Academies, "**A New Vision for Center-based Engineering Research**," and response to the study by the Engineering Directorate's advisory committee and by current ERC grantees at a meeting late last fall. NSF's announcement cites the Academies' call for "a deliberate, early-stage process for the development and formation of the best research teams to tackle complex, high-impact societal problems using the Team Science best practices. The RFP is included in the Grant Opportunity section in this newsletter. <https://www.nsf.gov/pubs/2018/nsf18549/nsf18549.htm>

**NIH Big Data Strategy:** The National Institutes of Health is seeking reaction to its draft **Strategic Plan for Data Science**, which NIH describes as "the interdisciplinary field of inquiry in which quantitative and analytical approaches, processes, and systems are developed and used to extract knowledge and insights from increasingly large and/or complex sets of data." The agency seeks responses on the "appropriateness of the goals of the plan and of the strategies and implementation tactics proposed to achieve them; opportunities for NIH to partner in achieving these goals; additional concepts that should be included in the plan; performance measures and milestones that could be used to gauge the success of elements of the plan and inform course corrections"; or another relevant topic. More information is posted in the NIH notice NOT-OD-18-134 posted on the website <https://grants.nih.gov/grants/guide/notice-files/NOT-OD-18-134.html>

## **Webinar and Events**

### **Event: BIGDATA Program Webinar**

**Sponsor: NSF**

**When: March 20, 2018 from 1.00 PM to 2.00 PM**

**Website:** [https://www.nsf.gov/events/event\\_summ.jsp?cntn\\_id=244800&org=NSF](https://www.nsf.gov/events/event_summ.jsp?cntn_id=244800&org=NSF)

**Brief Description:** The *BIGDATA* program seeks novel approaches in computer science, statistics, computational science, and mathematics leading towards the further development of the interdisciplinary field of *data science*. The program also seeks innovative applications in domain science, including social and behavioral sciences, education, physical sciences, and engineering, where data science and the availability of big data are creating new opportunities for research and insights not previously possible.

The solicitation invites two categories of proposals:

- **Foundations (BIGDATA: F):** those developing or studying fundamental theories, techniques, methodologies, and technologies of broad applicability to big data problems, motivated by specific data challenges and requirements; and
- **Innovative Applications (BIGDATA: IA):** those engaged in *translational* activities that employ new big data techniques, methodologies, and technologies to address and solve problems in specific application domains. Projects in this category must be collaborative, involving researchers from domain disciplines and one or more methodological disciplines, e.g., computer science, statistics, mathematics, simulation and modeling, etc.

Proposals are expected to be well motivated by specific big data problems in one or more science and engineering research domains. All proposals are expected to clearly articulate the big data aspect(s) that motivate the research. *Innovative Applications* proposals must provide clear examples of the impacts of the big data techniques, technologies and methodologies on applications in one or more domains.

This webinar will cover the BIGDATA program solicitation, [NSF 18-539](#), submission requirements, and program updates. Program updates include:

- Many participating NSF directorates/divisions have provided research themes and topics of interest.
- The cloud usage option continues in FY 2018. The Cloud Costing and Annual Usage Plan is now a maximum of two pages. In addition, an Excel Workbook describing cloud usage plans, if any, is now required to be submitted separately by email within five business days after the last day of the solicitation submission window.

There will be a question and answer session following the presentation.

**To Participate in the Webinar:** please register

at: <https://nsf.webex.com/nsf/onstage/g.php?MTID=ec39dc438eec9aaf4cc8ebf101e4a0166>

by 11:59pm EDT on Monday March 19, 2018.

### **Event: Partnerships between Science and Engineering Fields and the NSF TRIPODS Institutes Webinar**

**Sponsor: NSF**

**When: March 20, 2018 from 2.00 PM to 4.00 PM**

**Website:** [https://www.nsf.gov/events/event\\_summ.jsp?cntn\\_id=244739&org=NSF](https://www.nsf.gov/events/event_summ.jsp?cntn_id=244739&org=NSF)

**Brief Description:** The *Partnerships between Science and Engineering Fields and the NSF TRIPODS Institutes (TRIPODS + X)* solicitation seeks to expand the scope of the TRIPODS program beyond the foundations community by engaging researchers across other NSF disciplines and the



TRIPODS research teams in collaborative activities. TRIPODS + X projects will foster relationships between researchers in science & engineering domains and foundational data scientists by leveraging existing NSF investments in the TRIPODS organizations. Working in concert with a TRIPODS organization, a TRIPODS + X project would focus on data-driven research challenges motivated by applications in one or more science and engineering domains or other activities aimed at building robust data science communities.

This webinar will cover the solicitation and submission requirements. There will be a question and answer session following the discussion.

**To join the webinar: WebEx instructions for participants to join:**

Copy registration URL below into your browser or click on it to register

<https://nsf.webex.com/nsf/onstage/g.php?MTID=eda8e9149ecc8919409af5c781679fc8d>

**Password:** Tripods18!

**Event: EPA National Grants Webinar**

**Sponsor: EPA**

**When: March 21, 2018 from 1.00 PM to 2.30 PM**

**Website:** <https://register.gotowebinar.com/register/1881359341448649473>

**EPA Region 2 Webinar:**

**When: March 21, 2018 from 2.30 PM to 4.00 PM**

**Website:** <http://epawebconferencing.acms.com/r2p2grantwebinar>

**Brief Description:** Attendees are advised to connect early (12:45 pm to 1:00 pm EDT) to ensure proper connection and to type in questions. The webinar link works best when using the Google Chrome browser. Connection problems may result when using Internet Explorer or Microsoft Edge. This webinar will focus on the intent of awarding P2 Grants, the Program's National Emphasis Areas, the evaluation criteria and grant reporting requirements. Time will also be time set aside to answer questions. Potential applicants are strongly encouraged to attend this information session. For those unable to attend, a recording of the webinar will be made available and Frequently Asked Questions and Answers from the webinar will be posted to EPA's P2 Grant page (<https://www.epa.gov/p2/grant-programs-pollution-prevention>)

**To join the webinar:** Please register at above URL.

**Event: CISE CAREER Proposal Writing Workshop**

**Sponsor: NSF**

**When: April 9, 2018 from 8.30 AM to 5.15 PM**

**Website:** [https://www.nsf.gov/events/event\\_summ.jsp?cntn\\_id=244552&org=NSF](https://www.nsf.gov/events/event_summ.jsp?cntn_id=244552&org=NSF)

**Brief Description:** The NSF Directorate for Computer & Information Science & Engineering (CISE) will host a one-day workshop on CAREER Proposal Writing on April 9, 2018. This workshop will be held at the new headquarters of the National Science Foundation in Alexandria, VA. The goal of this workshop is to introduce junior CAREER-eligible faculty to the NSF CAREER program and help them to prepare their CAREER proposals to target CISE programs. Attendees will have the opportunity to improve their skills in proposal writing, as well as to interact with NSF program directors from different CISE divisions (CCF, CNS, IIS and OAC) and recent NSF CAREER awardees. The workshop is also open to multidisciplinary researchers with a CISE-specific focus, including cyber-infrastructure. The workshop includes presentations and discussions on proposal preparation, experience sharing, a mock panel, and meetings with Program Directors from various research programs within CISE. In order to attend this event, registration is required on or before March 10, 2018.

**For more information and to register, please visit:** <https://cisecareerworkshop.web.unc.edu/>

**Event: Math Frontiers Monthly Webinar Series**

**Sponsor: National Academies**

**When: April 10, 2018 from 2.00 PM**

**Website:** [http://sites.nationalacademies.org/deps/bmsa/deps\\_183972](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](http://nas.edu/mathfrontiers).

**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](http://sites.nationalacademies.org/deps/bmsa/deps_183972)

## **Grant Opportunities**

### **National Science Foundation**

#### **Grant Program: Small Business Technology Transfer Program Phase I (STTR)**

**Agency: National Science Foundation NSF 18-551**

**RFP Website:** <https://www.nsf.gov/pubs/2018/nsf18551/nsf18551.htm>

**Brief Description:** The NSF STTR program focuses on transforming scientific discovery into products and services with commercial potential and/or societal benefit. Unlike fundamental research, the NSF STTR program supports startups and small businesses in the creation of innovative, disruptive technologies, getting discoveries out of the lab and into the market.

The NSF STTR Program funds early or "seed" stage research and development. The program is designed to provide equity-free funding and entrepreneurial support at the earliest stages of company and technology development.

The STTR program is Congressionally mandated and intended to support scientific excellence and technological innovation through the investment of federal research funds to build a strong national economy by stimulating technological innovation in the private sector; strengthening the role of small business in meeting federal research and development needs; increasing the commercial application of federally supported research results; and fostering and encouraging participation by socially and economically disadvantaged and women-owned small businesses. The STTR program at NSF solicits proposals from the small business sector consistent with NSF's mission to promote the progress of science; to advance the national health, prosperity, and welfare; and to secure the national defense.

**Awards:** Fixed award grants; **Anticipated Funding Amount:** \$9,000,000

**Letter of Intent:** Not Required

**Full Proposal Submission Deadline:** June 14, 2018

**Contacts:** Henry Ahn, Biomedical (BM) Technologies, telephone: (703) 292-7069, email: [hahn@nsf.gov](mailto:hahn@nsf.gov)

- Peter Atherton, Information Technologies (IT), telephone: (703) 292-8772, email: [patherto@nsf.gov](mailto:patherto@nsf.gov)
- Anna Brady-Estevez, Chemical and Environmental Technologies (CT), telephone: (703) 292-7077, email: [abrady@nsf.gov](mailto:abrady@nsf.gov)

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#### **Grant Program: Small Business Innovation Research Program Phase I (SBIR)**

**Agency: National Science Foundation NSF 18-550**

**RFP Website:** <https://www.nsf.gov/pubs/2018/nsf18550/nsf18550.htm>

**Brief Description:** The NSF SBIR program focuses on transforming scientific discovery into products and services with commercial potential and/or societal benefit. Unlike fundamental research, the NSF SBIR program supports startups and small businesses in the creation of innovative, disruptive technologies, getting discoveries out of the lab and into the market.

The NSF SBIR Program funds early or "seed" stage research and development. The program is designed to provide equity-free funding and entrepreneurial support at the earliest stages of company and technology development.

The SBIR program is Congressionally mandated and intended to support scientific excellence and technological innovation through the investment of federal research funds to build a strong national economy by stimulating technological innovation in the private sector; strengthening the role of small business in meeting federal research and development needs;

increasing the commercial application of federally supported research results; and fostering and encouraging participation by socially and economically disadvantaged and women-owned small businesses. The SBIR program at NSF solicits proposals from the small business sector consistent with NSF's mission to promote the progress of science; to advance the national health, prosperity, and welfare; and to secure the national defense.

**Awards:** Fixed award grants; **Anticipated Funding Amount:** \$33,750,000

**Letter of Intent:** Not Required

**Full Proposal Submission Deadline:** June 14, 2018

**Contacts:** Henry Ahn, Biomedical (BM) Technologies, telephone: (703) 292-7069, email: [hahn@nsf.gov](mailto:hahn@nsf.gov)

- Peter Atherton, Information Technologies (IT), telephone: (703) 292-8772, email: [patherto@nsf.gov](mailto:patherto@nsf.gov)
  - Anna Brady-Estevez, Chemical and Environmental Technologies (CT), telephone: (703) 292-7077, email: [abrady@nsf.gov](mailto:abrady@nsf.gov)
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### **Grant Program: Planning Grants for Engineering Research Centers (ERC)**

**Agency:** National Science Foundation NSF 18-549

**RFP Website:** <https://www.nsf.gov/pubs/2018/nsf18549/nsf18549.htm>

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

**Awards:** Standard grants; **Anticipated Funding Amount:** \$4,000,000

**Letter of Intent:** Not Required

**Full Proposal Submission Deadline:** June 06, 2018

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

- Dana L. Denick, telephone: (703) 292-8866, email: [ddenick@nsf.gov](mailto:ddenick@nsf.gov)
  - Deborah J. Jackson, telephone: (703) 292-7499, email: [djackson@nsf.gov](mailto:djackson@nsf.gov)
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### **Grant Program: Future of Work at the Human - Technology Frontier: Advancing Cognitive and Physical Capabilities (FW-HTF)**

**Agency:** National Science Foundation NSF 18-548

**RFP Website:** <https://www.nsf.gov/pubs/2018/nsf18548/nsf18548.htm>

**Brief Description:** The landscape of jobs and work is changing at unprecedented speed, driven by the development of new technologies that have moved from the factory floor to an expanding array of knowledge and service occupations. These changes promise benefits to the Nation in the creation of new industries and occupations, increased productivity, opportunity for innovation, and sustained global leadership. But there are risks as well. Technological advances scale back the need for some workers, and in some cases, eliminate job sectors, with consequences to displaced workers who must adapt to emerging new technologies and the changing economy through retraining and reskilling.

The Future of Work at the Human-Technology Frontier (FW-HTF) is one of 10 new and far-sighted [Big Ideas](#) for Future Investments announced by NSF in 2016. NSF aims to respond to the challenges and opportunities of the changing landscape of jobs and work by supporting convergent research to: understand and develop the human-technology partnership; design new technologies to augment human performance; illuminate the emerging socio-technological landscape and understand the risks and benefits of new technologies; and foster lifelong and pervasive learning with technology. In order to be nimble and responsive to new opportunities and challenges as they are recognized, focus areas for the FW-HTF solicitation, the centerpiece of the FW-HTF Big Idea, may change from year to year.

This solicitation focuses on advancing cognitive and physical capabilities in the context of human-technology interactions. The solicitation will support two themes: Theme 1 will focus on **Foundations for Augmenting Human Cognition** and Theme 2 will focus on **Embodied Intelligent Cognitive Assistants**. In shaping projects responsive to these two themes, PIs consider the importance of understanding, anticipating, and shaping the larger implications at the individual, institutional, corporate, and national levels, including issues arising from the needs or consequences for training and education. In addition, projects should be framed in terms of their focus on the potential contribution toward (a) transforming the frontiers of science and technology for human performance augmentation and workplace skill acquisition; (b) improving both worker quality of life and employer financial metrics; (c) enhancing the economic and social well-being of the country; and (d) addressing societal needs through research on learning and instruction in the context of augmentation. Projects must include a Collaboration Plan which outlines the way in which the project will leverage and integrate multiple disciplinary perspectives.

Two classes of proposals — differing in scope, duration, and team size — will be considered through this solicitation:

- Small projects may be requested for a total budget ranging from \$750,000-1,500,000 for a period of 3 to 5 years; and
- Large projects may be requested for a total budget ranging from \$1,500,001-3,000,000 for a period of 3 to 5 years.

**Awards:** Standard grants; **Anticipated Funding Amount:** \$27,000,000

**Letter of Intent:** Required by April 16, 2018

**Full Proposal Submission Deadline:** June 04, 2018

**Contacts:** Jie Yang - CISE, telephone: (703) 292-4768, email: [jyang@nsf.gov](mailto:jyang@nsf.gov)

- David Corman - CISE, telephone: (703) 292-8754, email: [dcorman@nsf.gov](mailto:dcorman@nsf.gov)
- Alexandra Medina-Borja - EHR, telephone: (703) 292-7557, email: [amedinab@nsf.gov](mailto:amedinab@nsf.gov)

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## **Grant Program: Cybersecurity Innovation for Cyberinfrastructure (CICI)**

**Agency:** National Science Foundation NSF 18-547

**RFP Website:** <https://www.nsf.gov/pubs/2018/nsf18547/nsf18547.htm>

**Brief Description:** The objective of the Cybersecurity Innovation for Cyberinfrastructure (CICI) program is to develop, deploy and integrate security solutions that benefit the scientific community by ensuring the integrity, resilience and reliability of the end-to-end scientific workflow. CICI seeks three categories of projects:

4. **Secure Scientific Cyberinfrastructure:** These awards seek to secure the scientific workflow by encouraging novel and trustworthy architectural and design approaches,

models and frameworks for the creation of a holistic, integrated security environment that spans the entire scientific CI ecosystem;

5. **Collaborative Security Response Center:** This single award targets the development of a community resource to provide security monitoring, analysis, expertise, and resources Research & Education (R&E) cyberinfrastructure staff, regardless of physical location or organization; and
6. **Research Data Protection:** These awards provide solutions that both ensure the provenance of research data and reduce the complexity of protecting research data sets regardless of funding source.

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

**Limit on Number of Proposals per Organization:** Organizations are limited to 2 CICI proposals. These eligibility constraints will be strictly enforced in order to treat everyone fairly and consistently. In the event that an organization exceeds this limit, proposals received within the limit will be accepted based on earliest date and time of proposal submission (i.e., the first two proposals received will be accepted and the remainder will be returned without review). No exceptions will be made.

**Limit on Number of Proposals per PI or Co-PI:** An individual can participate as PI, co-PI or senior personnel on no more than two CICI proposals. Note that any individual whose biographical sketch is provided as part of the proposal will be considered as Senior Personnel in the proposed activity, irrespective of whether that individual will receive financial support from the project.

**Internal Competition:** Please inform **Atam Dhawan, Senior Vice Provost for Research at [dhawan@njit.edu](mailto:dhawan@njit.edu) by April 2, 2018, if you intend to submit a proposal as PI or Co-PI.** In case there are more than two intents of submissions are received, there will be an internal competition set for submission of pre-proposals. Please note that no intent of proposal submission will be accepted after April 2, 2018 for selection of proposals for submission to NSF.

**Letter of Intent:** Not Required

**Full Proposal Submission Deadline:** June 04, 2018

**Contacts:** Kevin Thompson, Program Director, CISE/OAC, telephone: (703) 292-4220, email: [kthompso@nsf.gov](mailto:kthompso@nsf.gov)

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**Grant Program: Innovations at the Nexus of Food, Energy and Water Systems (INFEWS)**

**Agency: National Science Foundation NSF 18-545**

**RFP Website:** <https://www.nsf.gov/pubs/2018/nsf18545/nsf18545.htm>

**Brief Description:** Humanity depends upon the Earth's physical resources and natural systems for food, energy, and water (FEW). However, both the physical resources and the FEW systems are under increasing stress. It is becoming imperative that we determine how society can best integrate social, ecological, physical and built environments to provide for growing demand for food, energy and water in the short term while also maintaining appropriate ecosystem services for the future. Known stressors in FEW systems include governance challenges, population growth and migration, land use change, climate variability, and uneven resource distribution. The interconnections and interdependencies associated with the FEW Nexus pose research grand challenges. To meet these grand challenges, there is a critical need for research that enables new means of adapting societal use of FEW systems.

The INFEWS program seeks to support research that conceptualizes FEW systems broadly and inclusively, incorporating social and behavioral processes (such as decision making and governance), physical processes (such as built infrastructure and new technologies for more

efficient resource utilization), natural processes (such as biogeochemical and hydrologic cycles), biological processes (such as agroecosystem structure and productivity), and cyber-components (such as sensing, networking, computation and visualization for decision-making and assessment). Investigations of these complex systems may produce discoveries that cannot emerge from research on food or energy or water systems alone. It is the synergy among these components in the context of sustainability that will open innovative science and engineering pathways to produce new knowledge, novel technologies, and innovative predictive capabilities. The overarching goal of the INFEWS program is to catalyze well-integrated, convergent research to transform understanding of the FEW Nexus as integrated social, engineering, physical, and natural systems in order to improve system function and management, address system stress, increase resilience, and ensure sustainability. The NSF INFEWS activity is designed specifically to attain the following goals:

1. Significantly advance our understanding of the food-energy-water system of systems through quantitative, predictive and computational modeling, including support for relevant cyberinfrastructure;
2. Develop real-time, cyber-enabled interfaces that improve understanding of the behavior of FEW systems and increase decision support capability;
3. Enable research that will lead to innovative and integrated social, engineering, physical, and natural systems solutions to critical FEW systems problems;
4. Grow the scientific workforce capable of studying and managing the FEW system of systems, through education and other professional development opportunities.

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

Projects submitted to Tracks 1-2 (Track 1, modelling; Track 2, solutions) will request three to five years of support with a total budget less than or equal to \$2,500,000 per project.

Projects submitted to Track 3 (Track 3, RCN) will request four or five years of support with a total budget less than or equal to \$750,000 per project.

**Letter of Intent:** Not Required

**Full Proposal Submission Deadline:** September 26, 2018

**Contacts:** Thomas Torgersen, Co-Chair, Directorate for Geosciences, telephone: (703) 292-4738, email: [ttorgers@nsf.gov](mailto:ttorgers@nsf.gov)

- James W. Jones, Co-Chair, Directorate for Engineering, telephone: (703) 292-4458, email: [jwjones@nsf.gov](mailto:jwjones@nsf.gov)
- Deborah Winslow, telephone: (703) 292-7315, email: [dwinslow@nsf.gov](mailto:dwinslow@nsf.gov)

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**Grant Program: Coupling, Energetics, and Dynamics of Atmospheric Regions (CEDAR)**

**Agency: National Science Foundation NSF 18-544**

**RFP Website:** <https://www.nsf.gov/pubs/2018/nsf18544/nsf18544.htm>

**Brief Description:** The Coupling, Energetics, and Dynamics of Atmospheric Regions (CEDAR) program is a broad-based research program with the goal of understanding the behavior of atmospheric regions from the middle atmosphere upward through the thermosphere and ionosphere into the exosphere in terms of coupling, energetics, chemistry, and dynamics on regional and global scales. These processes are related to the sources of perturbations that propagate upward from the lower atmosphere as well as to solar radiation and particle inputs from above. The activities within this program combine observations from ground based and space based platforms, theory and modeling.

**Awards:** Standard grants; **Anticipated Funding Amount:** \$1,000,000

**Letter of Intent:** Not Required

**Full Proposal Submission Deadline:** Proposals Accepted Anytime

**Contacts:** Ruth S. Lieberman, telephone: (703) 292-8529, email: [rlieberm@nsf.gov](mailto:rlieberm@nsf.gov)

- Irfan S. Azeem, telephone: (703) 292-8520, email: [sazeem@nsf.gov](mailto:sazeem@nsf.gov)
  - Carrie E. Black, telephone: (703) 292-2426, email: [cblack@nsf.gov](mailto:cblack@nsf.gov)
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**Grant Program: Partnerships between Science and Engineering Fields and the NSF TRIPODS Institutes**

**Agency: National Science Foundation NSF 18-542**

**RFP Website:** <https://www.nsf.gov/pubs/2018/nsf18542/nsf18542.htm>

**Brief Description:** The National Science Foundation's (NSF's) Directorates for Computer & Information Science & Engineering (CISE) and Mathematical & Physical Sciences (MPS) recently launched the [Transdisciplinary Research in Principles of Data Science \(TRIPODS\) Phase I program](#) with the goal of promoting long-term, interdisciplinary research and training activities that engage theoretical computer scientists, statisticians, and mathematicians in developing the theoretical foundations of data science. Twelve TRIPODS Phase I Institutes were established in FY17 (see [https://www.nsf.gov/news/news\\_summ.jsp?cntn\\_id=242888](https://www.nsf.gov/news/news_summ.jsp?cntn_id=242888)).

The *Partnerships between Science and Engineering Fields and the NSF TRIPODS Institutes (TRIPODS + X)* solicitation seeks to expand the scope of the TRIPODS program beyond the foundations community by engaging researchers across other NSF disciplines and the TRIPODS research teams in collaborative activities. TRIPODS + X projects will foster relationships between researchers in science & engineering domains and foundational data scientists by leveraging existing NSF investments in the TRIPODS organizations. Working in concert with a TRIPODS organization, a TRIPODS + X project would focus on data-driven research challenges motivated by applications in one or more science and engineering domains or other activities aimed at building robust data science communities.

The award titles, principal investigators and institutions for the TRIPODS Phase I projects are listed below:

- [UA-TRIPODS: Building Theoretical Foundations for Data Sciences](#): Hao Zhang, University of Arizona
- [Foundations of Model Driven Discovery from Massive Data](#): Jeffery Brock, Brown University (Convergence and EPSCoR co-funding)
- [Berkeley Institute on the Foundations of Data Analysis](#): Michael Mahoney, University of California, Berkeley
- [TRIPODS: Towards a Unified Theory of Structure, Incompleteness and Uncertainty in Heterogeneous Graphs](#): Lise Getoor, University of California, Santa Cruz
- [From Foundations to Practice of Data Science and Back](#): John Wright, Columbia University
- [TRIPODS: Data Science for Improved Decision-Making: Learning in the Context of Uncertainty, Causality, Privacy, and Network Structures](#): Kilian Weinberger, Cornell University (Convergence co-funding)
- [Transdisciplinary Research Institute for Advancing Data Science \(TRIAD\)](#): Xiaoming Huo, Georgia Institute of Technology
- Collaborative Research: TRIPODS Institute for Optimization and Learning: Katya Scheinberg, [Lehigh University](#); Han Liu, [Northwestern University](#); Francesco Orabona, [State University of New York at Stony Brook](#)
- [Institute for Foundations of Data Science \(IFDS\)](#): Piotr Indyk, Massachusetts Institute of Technology



- [Topology, Geometry, and Data Analysis \(TGDA@OSU\): Discovering Structure, Shape, and Dynamics in Data](#): Tamal Dey, The Ohio State University
- [Algorithms for Data Science: Complexity, Scalability, and Robustness](#): Sham Kakade, University of Washington  
[Institute for Foundations of Data Science](#): Stephen Wright, University of Wisconsin-Madison (Convergence co-funding)

**Awards:** Standard grants; **Anticipated Funding Amount:** \$10,710,000

**Letter of Intent:** Not Required

**Full Proposal Submission Deadline:** May 29, 2018

**Contacts:** Nandini Kannan, Program Director, Division of Mathematical Sciences, MPS/DMS, telephone: (703) 292-8104, email: [nakannan@nsf.gov](mailto:nakannan@nsf.gov)

- Tracy Kimbrel, Program Director, Division of Computing and Communication Foundations, CISE/CCF, telephone: (703) 292-7924, email: [tkimbrel@nsf.gov](mailto:tkimbrel@nsf.gov)
- Rahul T. Shah, Program Director, Division of Computing and Communication Foundations, CISE/CCF, telephone: (703) 292-2709, email: [rshah@nsf.gov](mailto:rshah@nsf.gov)

**Grant Program: Smart and Connected Health (SCH) Connecting Data, People and Systems**

**Agency: National Science Foundation NSF 18-541**

**RFP Website:** <https://www.nsf.gov/pubs/2018/nsf18541/nsf18541.htm>

**Brief Description:** The goal of the interagency Smart and Connected Health (SCH): Connecting Data, People and Systems program is to accelerate the development and integration of innovative computer and information science and engineering approaches to support the transformation of health and medicine. Approaches that partner technology-based solutions with biomedical and biobehavioral research are supported by multiple agencies of the federal government including the National Science Foundation (NSF) and the National Institutes of Health (NIH). The purpose of this program is to develop next-generation multidisciplinary science that encourages existing and new research communities to focus on breakthrough ideas in a variety of areas of value to health, such as networking, pervasive computing, advanced analytics, sensor integration, privacy and security, modeling of socio-behavioral and cognitive processes and system and process modeling. Effective solutions must satisfy a multitude of constraints arising from clinical/medical needs, barriers to change, heterogeneity of data, semantic mismatch and limitations of current cyberphysical systems and an aging population. Such solutions demand multidisciplinary teams ready to address issues ranging from fundamental science and engineering to medical and public health practice.

The SCH program:

- takes a coordinated approach that balances theory with evidenced-based analysis and systematic advances with revolutionary breakthroughs;
- seeks cross-disciplinary collaborative research that will lead to new fundamental insights; and
- encourages empirical validation of new concepts through research prototypes, ranging from specific components to entire systems.

The purpose of this interagency program solicitation is to support the development of technologies, analytics and models supporting next generation health and medical research through high-risk, high-reward advances in computer and information science, engineering and technology, behavior and cognition. Collaborations between academic, industry, and other organizations are strongly encouraged to establish better linkages between fundamental science,

medicine and healthcare practice and technology development, deployment and use. This solicitation is aligned with national reports calling for new partnerships to facilitate major changes in health and medicine, as well as healthcare delivery and is aimed at the fundamental research to enable these changes. Realizing the promise of disruptive transformation in health, medicine and/or healthcare will require well-coordinated, multi-disciplinary approaches that draw from the computer and information sciences, engineering, social, behavioral, cognitive and economic sciences, biomedical and health research.

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

**Letter of Intent:** Not Required

**Full Proposal Submission Deadline:** May 22, 2018

**Contacts:** Wendy Nilsen, Directorate for Computer and Information Science and Engineering, Division of Information and Intelligent Systems, telephone: (703) 292-2568, email: [wnilsen@nsf.gov](mailto:wnilsen@nsf.gov)

- Jack Brassil, Directorate for Computer and Information Science and Engineering, Division of Computer and Network Systems, telephone: (703) 292-8950, email: [jbrassil@nsf.gov](mailto:jbrassil@nsf.gov)
- Georgia-Ann Klutke, Directorate for Engineering, Division of Civil, Mechanical and Manufacturing Innovation, telephone: (703) 292-2443, email: [gaklutke@nsf.gov](mailto:gaklutke@nsf.gov)
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## **National Institutes of Health**

**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.

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## **Grant Program: NEI Translational Research Program (TRP) to Develop Novel Therapies and Devices for the Treatment of Visual System Disorders (R24 Clinical Trial Optional)**

**Agency:** National Institutes of Health PAR-18-707

**RFP Website:** <https://grants.nih.gov/grants/guide/pa-files/PAR-18-707.html>

**Brief Description:** The objective of this FOA is to encourage collaborative research that facilitates the translation of focused laboratory and animal studies into novel resources for the treatment of ocular diseases. Translational research may target new or previously identified genes, molecules, and/or pathways that are appropriate for therapeutic intervention. The broad scope of this program intended to cover all visual system diseases and disorders that are relevant to the mission of the NEI. The concept is to bring teams of experts together to create a pipeline for therapy and/or medical device development. The scope of the proposed research should be beyond the capabilities and resources of one research laboratory. For example, development of gene therapy may require research teams with expertise in the pathophysiology of the disease, clinical experience in the manifestations and treatments currently available, cell biologists able to contribute resources such as therapeutic genes and vectors capable of appropriate tissue targeting and gene expression, and with animal models appropriate for toxicology and efficacy testing. Rational drug design may require different scientific disciplines to identify and validate

appropriate therapeutic targets, devise suitable delivery systems, and test the efficacy and safety of such agents in animal models.

### **Examples**

The following are presented as general examples and are not intended to be exclusive nor to limit creativity and innovation.

- Gene Therapy: Including vector design and therapeutic strategies where the replacement of one mutated gene may be curative or in pathological conditions where temporary expression of a transferred gene could result a beneficial clinical effect.
- Cell-based therapies: transplantation of cells expressing various angiostatic or neurotrophic factors might represent another approach. Autologous grafts of such cells alone or after transfection to express a desirable gene product. Expression of trophic factors might achieve generic rescue effects on selected cell populations, possibly circumventing the need to target specific gene defects.
- Stem cell therapy: human adult bone-marrow-derived stem cells and Induced Pluripotent Stem (iPS) cells aimed at rescuing or replacing degenerating cells.
- Rational drug design: characterization of pathways leading to cell degeneration and death in order to identify novel targets for therapeutic intervention in retinal diseases or the identification of neuroprotection strategies that might halt or slow the degenerative process.
- Small molecules: development of compounds that show promise for treating visual disorders, but are not yet suitable for clinical testing for ocular diseases.
- Prosthesis and other devices: Medical Devices may include sensory substitution, disease treatment, and assistive technologies. For example, retinal prosthetics that transform light to electrical signals that stimulate the remaining retinal neurons to produce visual percepts. Devices to deliver therapeutic agents to eye tissue as well as assistive technologies that aid people with low-vision or blindness with their everyday activities of life.

**Awards:** Applicants may request up to \$1.5 million per year direct costs

**Letter of Intent:** Not Required

**Deadline:** April 10, 2018; April 10, 2019; April 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.

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### **Grant Program: BRAIN Initiative: New Concepts and Early - Stage Research for Large - Scale Recording and Modulation in the Nervous System (R21 Clinical Trial Not Allowed)**

**Agency:** National Institutes of Health RFA-EY-18-001

**RFP Website:** <https://grants.nih.gov/grants/guide/rfa-files/RFA-EY-18-001.html>

**Brief Description:** This FOA is related to the recommendations in sections II.2, II.3, and II.4 from the BRAIN 2025 Report. These three recommendations call for accelerated development of new large-scale recording technologies and tools for neural circuit manipulation. 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.

Achieving these goals requires the ability to record simultaneously from thousands or tens-of-thousands of neurons contributing to the dynamic activity in a neural circuit. The relevant activity may be in clusters of cells packed closely together or may be in widely distributed circuits. Current microelectrode and imaging technologies are limited in the number of cells from which activity can be isolated and sampled simultaneously, by the size or location of the area to be sampled, by the depth of penetration, and by the invasiveness of the technique that might prohibit their use in human experimentation. Non-invasive technologies suitable for use in humans are currently limited in spatial resolution and temporal dynamics, as well as in their reflection of ongoing electrical activity in circuit elements. This FOA seeks entirely new ideas, concepts and/or approaches from physics and engineering, and biology, for how these limitations might be overcome to enable increased recording capabilities on the scale of one or more orders of magnitude beyond that of current technology.

This FOA also seeks novel ideas for technology capable of manipulating activity in circuits that overcome the limitations of current invasive and non-invasive approaches. Dissecting the function of neural circuits requires the ability to manipulate neural activity in order to investigate underlying mechanisms and demonstrate causality. Current technologies such as microstimulation and optogenetic approaches are limited in specificity, temporal dynamics, and by the invasiveness of the technique.

Applications are expected to propose the development of ideas in the earliest stages for entirely new approaches for large-scale neural recording and/or manipulation of neural activity. Such ideas could encompass unique and innovative combinations of existing technology that create a synergistic result. An important goal is to stimulate new thinking and concepts for accelerating development of novel technologies that break current barriers to neural recording and/or manipulation. In addition to experimental approaches, this FOA may support early-stage testing using calculations, simulations, computational models, or other mathematical techniques for demonstrating that the signal sources and/or measurement technologies are theoretically capable of meeting the demands of large-scale recording or manipulation of circuit activity in humans or animal models. The support might also be used for building and testing phantoms, prototypes, in-vitro or other bench-top models in order to validate underlying theoretical assumptions in preparation for future FOAs aimed at proof-of-concept testing in animal models.

**Awards:** The combined direct cost budget for the two-year project period may not exceed \$300,000. No more than \$200,000 may be requested in any single year.

**Letter of Intent:** Not Required

**Deadline:** May 1, 2018, October 29, 2018, May 1, 2019, October 29, 2019, May 1, 2020, 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.

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

**Agency: National Institutes of Health PA-18-671**

**RFP Website:** <https://grants.nih.gov/grants/guide/pa-files/PA-18-671.html>

**Brief Description:** The overall goal of the NIH Ruth L. Kirschstein National Research Service Award (NRSA) program is to help ensure that a diverse pool of highly trained scientists is available in appropriate scientific disciplines to address the Nation's biomedical, behavioral, and clinical research needs. NRSA fellowships support the training of pre- and postdoctoral scientists,

dual-degree investigators, and senior researchers. More information about NRSA programs may be found at the [Ruth L. Kirschstein National Research Service Award \(NRSA\)](#) website.

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

**Awards:** Award budgets are composed of stipends, tuition and fees, and institutional allowance. Individuals may receive up to 5 years of aggregate Kirschstein-NRSA support at the predoctoral level (up to 6 years for dual degree training, e.g., MD/PhD), and up to 3 years of aggregate Kirschstein-NRSA support at the postdoctoral level, including any combination of support from institutional training grants (e.g., T32) and an individual fellowship award. This F31 award program only supports dissertation research training.

**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.

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## **Grant Program: Ruth L. Kirschstein National Research Service Award (NRSA) Individual Postdoctoral Fellowship (Parent F32)**

**Agency:** National Institutes of Health PA-18-670

**RFP Website:** <https://grants.nih.gov/grants/guide/pa-files/PA-18-670.html>

**Brief Description:** The overall goal of the NIH Ruth L. Kirschstein National Research Service Award (NRSA) program is to help ensure that a diverse pool of highly trained scientists is available in appropriate scientific disciplines to address the Nation's biomedical, behavioral, and clinical research needs. NRSA fellowships support the training of pre-and postdoctoral scientists, dual-degree investigators, and senior researchers. More information about NRSA programs may be found at the [Ruth L. Kirschstein National Research Service Award \(NRSA\)](#) website.

The purpose of the Ruth L. Kirschstein National Research Service Award (NRSA) Individual Postdoctoral Fellowship (Parent F32) is to support promising applicants during their mentored postdoctoral training under the guidance of outstanding faculty sponsors. The proposed research and training plan should enhance the individual's potential to develop into a productive, independent researcher by providing strong mentorship, appropriate training and career development opportunities, and strong institutional support and commitment. The training plan should be explicitly designed to facilitate the fellow's transition to the next career stage and should explain how, in combination with the candidate's prior training and experience, it will contribute to the individual's research career goals.

**Awards:** Award budgets are composed of stipends, tuition and fees, and institutional allowance. Individuals may receive up to 5 years of aggregate Kirschstein-NRSA support at the predoctoral level (up to 6 years for dual degree training, e.g., MD/PhD), and up to 3 years of aggregate

Kirschstein-NRSA support at the postdoctoral level, including any combination of support from institutional training grants (e.g., T32) and an individual fellowship award.

**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.

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### **Department of Defense/US Army/DARPA/ONR**

**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](mailto:afosryip@us.af.mil)

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

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**Grant Program: Army Research Institute for the Behavioral and Social Sciences Broad Agency Announcement for Basic Scientific Research (2018)**

**Agency: Department of Defense Dept of the Army -- Materiel Command W911NF-18-S-0001**

**Website:** <https://www.grants.gov/web/grants/view-opportunity.html?oppId=301433>

**Brief Description:** The basic research program supports research projects that are designed to expand fundamental knowledge and discover general principles in the behavioral and social sciences. In addition to looking for proposals that provide for programmatic efforts to develop and evaluate psychological and behavioral theory, ARI strongly encourages Applicants to propose novel, state-of-the-art, and multidisciplinary approaches that address difficult problems. A key consideration in the decision to support a research proposal is that its findings are likely to stimulate new, basic behavioral research which, in turn, will lead to improved performance of Army personnel and their units.

Proposals may address both traditional behavioral issues as well as psychophysiological (to include neuroscience) and network science approaches to social phenomena, memory, cognition, and personality.

ARI will not support proposals through this BAA that are primarily applied research projects (e.g., human factors studies or training program evaluations) or purely focused on physiology, psychopathology, or behavioral health. Collaboration is encouraged among institutions of higher education (IHE's), non-profit organizations and commercial organizations.

A proposal should describe its contribution to theory and how its results might lead to basic behavioral research that would be meaningful to the Army. Those contemplating submission of a proposal are encouraged to submit a White Paper before submitting a full proposal. Submission of a White Paper before a full proposal allows earliest determination of the potential for funding and minimizes the labor and cost associated with the submission of a full proposal that may have minimal probability of being selected for funding.

While all proposals will be considered, ARI has identified the following five (5) domains as particularly germane to its basic research needs. This list is neither comprehensive nor exclusive and ARI is especially open to proposals that combine or cut across these domains. Furthermore, proposals that adopt multi- or interdisciplinary approaches to research questions are encouraged. These domains include:

1. Personnel Testing and Performance
2. Leader Development
3. Organizational Effectiveness
4. Learning in Formal and Informal Environments
5. Culture.

**Early Career Proposals.** To foster the development of innovative and creative researchers, ARI also solicits proposals from Applicants with individuals who are early in their research careers and have never received ARI funding as a Principal Investigator.

**Awards:** Various Funding Programs

**Proposal Deadline:**

White Paper submissions must be received by: 11:59 PM/2359 Hours Eastern Daylight Time (EDT) on 4 April 2018

Proposal submissions must be received by: 5:00 PM/1700 Hours Eastern Daylight Time (EDT) on 15 June 2018

**Contact Information:** Questions regarding White Papers must be submitted in writing to [gregory.a.ruark.civ@mail.mil](mailto:gregory.a.ruark.civ@mail.mil) by: 5:00 PM/1700 Eastern Daylight Time (EDT) on 30 March 2018

Questions regarding Proposals must be submitted in writing to [brandon.s.hill24.civ@mail.mil](mailto:brandon.s.hill24.civ@mail.mil) by: 5:00 PM/1700 Eastern Daylight Time (EDT) on 8 June 2018



**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](mailto:ERDC-BAA@usace.army.mil). You may also contact Frank Spears at 601-634-3908 or via email at [Frank.Spears@usace.army.mil](mailto:Frank.Spears@usace.army.mil).

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**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](mailto:onr_stem@navy.mil)

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## **Department of Energy**

### **Grant Program: Critical Water Issues Prize Competition RFI**

**Agency:** Department of Energy DE-FOA-0001899

**Website:** <https://eere-exchange.energy.gov/#Foald45c72943-674f-484c-8592-1b95b0906387>

**Brief Description:** The U.S. Department of Energy seeks to understand the key technical and other barriers that may prevent long-term access to low-cost water supplies that could be best addressed through challenges and prize competitions. For the purposes of this Request for Information (RFI), challenges and prize competitions are tools and approaches the Federal government and others can use to engage a broad range of stakeholders, including the general public, in developing solutions to difficult problems. Challenges and prize competitions rely on competitive structures to drive innovation among participants and usually offer rewards (financial and/or other) to winners and/or finalists. DOE may use the information provided through this RFI to develop challenges and prize competitions to address key water issues. This RFI is not designed to solicit input on DOE's broader R&D efforts on affordable water.

**Submission Deadline:** Responses to this RFI must be submitted electronically to [WaterPrizeRFI@ee.doe.gov](mailto:WaterPrizeRFI@ee.doe.gov) no later than 5:00pm (ET) on May 14, 2018. Responses must be provided as attachments to an email. It is recommended that attachments with file sizes exceeding 25MB be compressed (i.e., zipped) to ensure message delivery. Responses must be provided as a Microsoft Word (.docx) attachment to the email, and no more than 5 pages in length per category of questions, 12 point font, 1 inch margins. Only electronic responses will be accepted.

**Contact Information:** [EERE-ExchangeSupport@hq.doe.gov](mailto:EERE-ExchangeSupport@hq.doe.gov)

This email address is for EERE Exchange Technical Support.

- [waterprizerfi@ee.doe.gov](mailto:waterprizerfi@ee.doe.gov)

This email address is for submission of RFI responses.

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### **Grant Program: Solid Oxide Fuel Cells Core Technology Research**

**Agency:** Department of Energy DE-FOA-0001853

**Website:** <https://www.netl.doe.gov/business/solicitations/details?title=4bff5699-c11b-4230-b25e-ba5c79c4ad89>

**Brief Description:** The goal of this Funding Opportunity Announcement (FOA) is to seek innovative research and development projects to support fuel cells system manufacturers in addressing issues related to cost and reliability of fuel cells systems. Applications are sought in two areas of interest (AOI) that include AOI 1 – Solid Oxide Fuel Cells (SOFC) Core Technology Research and AOI 2 – Core Technology Research and Development (R&D) in Support of Near-Term SOFC Power Systems Prototype Tests. visit [FedConnect](#) for more.

**Awards;** Up to \$2,000,000; Available Funding: \$9,500,000

**Submission Deadline:** April 30, 2018

**Contact Information:** Charles C. Tomasiak [Charles.Tomasiak@NETL.DOE.GOV](mailto:Charles.Tomasiak@NETL.DOE.GOV)

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**Grant Program: Flexible Combined Heat and Power for Grid Reliability and Resiliency**

**Agency:** Department of Energy DE-FOA-0001750

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

**Brief Description:** The U.S. Department of Energy's (DOE) Office of Energy Efficiency and Renewable Energy's (EERE) Advanced Manufacturing Office (AMO) seeks to conduct research and development activities to further the utilization of cost-effective, highly efficient combined heat and power (CHP) via Funding Opportunity Announcement (FOA) DE-FOA-0001750. The FOA includes two areas of interest to research enabling technologies for CHP systems that are specifically designed to provide cost-effective support to the electric grid. Such systems would have the benefits of conventional CHP while at the same time being able to sell electricity to and serve as a stabilizing factor for the Grid.

**Informational Webinar:** EERE will conduct one informational webinar during the FOA process. It will be held before the due date for the Concept Papers. Attendance is not mandatory and will not positively or negatively impact the overall review of any Applicant submissions.

Please register for the Applicant Webinar on March 2, 2018 10:00 AM EDT at:

<https://attendee.gotowebinar.com/register/376450080550801153>

**Awards;** Up to \$1,500,000; Available Funding: \$10,000,000

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

- Concept Paper Submission Deadline: 03/23/2018 5:00 PM ET
- Full Application Submission Deadline: 05/03/2018 5:00 PM ET

**Contact Information:** [EERE-ExchangeSupport@hq.doe.gov](mailto:EERE-ExchangeSupport@hq.doe.gov)

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**EPA (Environmental Protection Agency)**

**Grant Program: 2018 Healthy Communities Grant Program**

**Agency:** EPA EPA-R1-HC-2018

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

**Brief Description:** The Healthy Communities Grant Program is EPA New England's main competitive grant program to work directly with communities to support EPA's "Back-to-Basics" agenda to reduce environmental risks, protect and improve human health and improve the quality of life. The Healthy Communities Grant Program will achieve this through identifying and funding projects that:

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

**Awards:** Up to \$25,000

**Estimated Total Program Funding:** \$250,000

**Notice of Intent:** Not Required

**Proposal Deadline:** April 13, 2018

**Contact:** Katie Marrese EPA New England 5 Post Office Square, Suite 100 (OEP06-2) E-mail: Boston, MA 02109-3912 Phone: 617-918-1658 Fax: 617-918-0658 [Marrese.Katie@epa.gov](mailto:Marrese.Katie@epa.gov)

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**Grant Program: FY 2019 Pollution Prevention Grant Program**

**Agency:** EPA EPA-HQ-OPPT-2018-001

**Website:** <https://www.epa.gov/sites/production/files/2018-03/documents/2018rfpp2grant.pdf>

**Brief Description:** EPA is announcing a grant competition to fund two-year Pollution Prevention assistance agreements for projects expected to be performed in each EPA region that provide technical assistance and/or training to businesses/facilities to help them adopt source reduction approaches (also known as “pollution prevention” or “P2”). P2 means reducing or eliminating pollutants from entering any waste stream or otherwise released into the environment prior to recycling, treatment, or disposal. In keeping with the Pollution Prevention Act of 1990, EPA is encouraging P2 because implementing these approaches can result in reductions in toxic pollutants, the use of water, energy and other raw materials, while also lowering business costs. For this current round of grants, EPA is putting additional emphasis on documenting and sharing the P2 best practices and innovations identified and developed through these grants so that others can replicate these approaches and outcomes. Therefore, in general, grant recipients must document and report on the P2 recommendations where they are provided to businesses/facilities as part of the technical assistance, and at a later date, report on P2 actions adopted by the businesses/facilities that received the technical assistance and training (alternative reporting provisions are available if technical assistance is broadly provided to businesses/facilities – see Section VI.C.3.b.). If necessary, awardee budgets and workplans may allot time and/or set-aside funds from the potential two years of federal funding provided for an optional third-year to collect and report on the P2 approaches adopted. States, state entities and federally-recognized tribes and intertribal consortia are eligible to apply.

If Congress appropriates Fiscal Year (FY) 2018 and 2019 funds for the P2 Program at levels comparable to FY 2017 funding levels, the EPA may award a total of approximately \$9.38 million in federal P2 grant funding for these two-year assistance agreements (approximately \$4.69 million in FY 2018 funds and approximately \$4.69 million in FY 2019 funds). P2 awards are expected to be performed in each EPA region and will be funded in the form of grants or cooperative agreements. Please note that notwithstanding the potential amounts stated above, these amounts are estimates only and the amount of grant funding awarded will be dependent on Congressional appropriations, funding availability, the quality of proposals received, satisfactory performance and other applicable considerations.

**Awards:** NY, NJ: Region 2 – Federal awards may be in the range of \$40,000 – \$300,000, issued over a two-year funding period (between \$20,000 - \$150,000 incrementally funded per year).

**Estimated Total Program Funding:** \$9,380,000

**Notice of Intent:** Not Required

**Proposal Deadline:** April 26, 2018

**Contact:** EPA Region 2 NJ, NY, PR, VI Alex Peck U.S. EPA Region 2 290 Broadway, 25th Floor (PSPMMB) New York, NY 10007-1866 Phone: 212-637-3758 Email address: [peck.alex@epa.gov](mailto:peck.alex@epa.gov)

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## NASA

### **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](mailto:Douglas.M.Hudgins@nasa.gov)

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### **Grant Program: Discovery Data Analysis**

**Agency:** NASA NNH18ZDA001N-DDAP

**Website:**

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

**Brief Description:** The objective of the Discovery Data Analysis Program (DDAP) is to enhance the scientific return of Discovery Program missions and broaden the scientific participation in the analysis of data, both recent and archived, collected by Discovery missions. Spacecraft data used in DDAP investigations must be available in the Planetary Data System (PDS; <https://pds.nasa.gov/>), or equivalent publicly accessible archive(s), at least 30 days prior to the Step-2 submission deadline for DDAP proposals. Spacecraft data that have not been placed in such archives are not eligible for use in DDAP investigations. In all cases, it is the responsibility of the DDAP investigator to acquire any necessary data. Investigators are encouraged to contact the archive for assistance in identifying specifics of available datasets. Datasets to be used in the proposed work must be clearly and specifically identified in the proposal. NASA puts no other restriction on the status or condition of the data. However, regardless of the archive(s) used, if the data to be analyzed have known issues that might represent an obstacle to analysis, the proposers must demonstrate clearly and satisfactorily how such potential difficulties will be overcome. In other words, it is the proposer's responsibility to demonstrate clearly that the public data are of sufficient quantity and quality to achieve the project's science goals.

**Awards:** Standard Grants

**Step-1 Proposal:** August 30, 2018

**Step-2 Proposal Deadline:** November 01, 2018

**Contact:** Thomas S. Statler Planetary Science Division Science Mission Directorate NASA Headquarters Washington, DC 20546-0001 Email: [thomas.s.statler@nasa.gov](mailto:thomas.s.statler@nasa.gov) Telephone: 202-358-0272

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**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](mailto:Michael.M.Little@nasa.gov)

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**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](mailto:fellowships@neh.gov).

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**Grant Program: Fellowships for Advanced Social Science Research on Japan****Agency: National Endowment of Humanities****Website:** <https://www.neh.gov/grants/research/fellowships-advanced-social-science-research-japan>

**Brief Description:** The Fellowships for Advanced Social Science Research on Japan program is a joint activity of the Japan-U.S. Friendship Commission (JUSFC) and the National Endowment for the Humanities. Awards support research on modern Japanese society and political economy, Japan's international relations, and U.S.-Japan relations. The program encourages innovative research that puts these subjects in wider regional and global contexts and is comparative and contemporary in nature. Research should contribute to scholarly knowledge or to the general public's understanding of issues of concern to Japan and the United States. Appropriate disciplines for the research include anthropology, economics, geography, history, international relations, linguistics, political science, psychology, public administration, and sociology. Awards usually result in articles, monographs, books, digital materials, archaeological site reports, translations, editions, or other scholarly resources.

The fellowships are designed for researchers with advanced Japanese language skills whose research will require use of data, sources, and documents, onsite interviews, or other direct contact in Japanese. Fellows may undertake their projects in Japan, the United States, or both, and may include work in other countries for comparative purposes. Projects may be at any stage of development.

**Awards:** The minimum award is \$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:** March 13, 2018

**Contact:** Contact NEH's Division of Research Programs at 202-606-8200 or [fellowships@neh.gov](mailto:fellowships@neh.gov).

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**Robert Wood Johnson Foundation****Grant Program: Integrative Action for Resilience: Progress Through Community-Research Partnerships****Agency: Robert Wood Johnson Foundation****Website:** [https://www.rwjf.org/en/library/funding-opportunities/2018/integrative-action-for-resilience.html?rid=0034400001rmlamAAE&et\\_cid=1180853](https://www.rwjf.org/en/library/funding-opportunities/2018/integrative-action-for-resilience.html?rid=0034400001rmlamAAE&et_cid=1180853)

**Brief Description:** The Integrative Action for Resilience initiative is a two-phase opportunity for local community leaders—who are interested in designing and implementing rigorous resilience research to generate evidence that can inform their own decision-making about policies and projects needed to build resilience in their community, and for researchers—who are interested in partnering in new ways with community-based organizations to apply their analytic capabilities to community-identified challenges. This is a unique opportunity to connect community leaders and researchers who have not worked together before but may be interested and well-suited to pursue resilience research together. Current community-research partnerships are important, but this call is for new partnerships to develop between community leaders and researchers who have not previously worked together but will find complementary benefits from engagement.

**Awards:** In Phase 2, RWJF expects to award three-four grants for up to 24 months each, totaling up to approximately \$1.4 million for this body of work.

**Proposal Deadline:**

March 19, 2018 (12–1 p.m. ET): Optional applicant web conference call. Registration is [required](#).  
April 11, 2018 (3 p.m. ET): Deadline for receipt of brief proposals.  
June 7–June 8, 2018: Mandatory applicant meeting for those invited from Phase 1.  
July 27, 2018 (3 p.m. ET): Deadline for receipt of full proposals.  
**Contact:** Contact NEH's Division of Research Programs at 202-606-8200 or [fellowships@neh.gov](mailto:fellowships@neh.gov).

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## Bill & Melinda Gates Foundation

### Grant Program: Grand Challenges Exploration (GCE)

**Agency:** Bill & Melinda Gates Foundation

**Website:** <https://gcgh.grandchallenges.org/about>

**Brief Description:** The Bill & Melinda Gates Foundation is inviting proposals for the next round of [Grand Challenges Explorations \(GCE\)](#) for the following three challenges

- [Innovations in Immunization Data Management, Use, and Improved Process Efficiency](#);
- [Affordable, Accessible, and Appealing: The Next Generation of Nutrition](#);
- [Tools and Technologies for Broad-Scale Disease Surveillance of Crop Plants in Low-Income Countries](#)

**Awards:** Phase 1 grants are \$100,000 for 18 months.

**Proposal Deadline:** May 2, 2018

**Contact:** FAQ: <https://gcgh.grandchallenges.org/grant-opportunities/faq/gce#t17n37099>.

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## Whitehall Foundation

### Grant Program: Research Grant Program

**Agency:** Whitehall Foundation

**Website:** <http://www.whitehall.org/about/>

**Brief Description:** Research grants are available to established scientists of all ages working at accredited institutions in the United States. Applications will be judged on the scientific merit and the innovative aspects of the proposal as well as on the competence of the applicant. Research grants of up to three years will be provided. A renewal grant with a maximum of two years is possible, but it will be awarded on a competitive basis. Research grants will not be awarded to investigators who have already received, or expect to receive, substantial support from other sources, even if it is for an unrelated purpose.

The Foundation is currently interested in basic research in neurobiology, defined as follows: ***Invertebrate and vertebrate (excluding clinical) neurobiology, specifically investigations of neural mechanisms involved in sensory, motor, and other complex functions of the whole organism as these relate to behavior. The overall goal should be to better understand behavioral output or brain mechanisms of behavior.***

**Awards:** Research grants normally range from \$30,000 to \$75,000 per year.

**Proposal Deadline:**

	<i>Summer Session</i>	<i>Fall Session</i>	<i>Spring Session</i>
<i>Letter of Intent deadline</i>	<i>January 15</i>	<i>April 15</i>	<i>October 1</i>
<i>Issuance of Application materials</i>	<i>April 1</i>	<i>July 1</i>	<i>December 15</i>
<i>Application deadline</i>	<i>June 1</i>	<i>September 1</i>	<i>February 15</i>

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## 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](mailto:justin.m.samolewicz@njit.edu); and **Eric Hetherington, Director, Sponsored Research Programs Administration** 973-596-3631; [eric.d.hetherington@njit.edu](mailto: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](mailto:john.p.mccarthy@njit.edu)  
**Cristo Leon**, CSLA Director of Research; (973) 596-6426; [cristo.e.yanezleon@njit.edu](mailto:cristo.e.yanezleon@njit.edu)  
**Sean Andrews**, YWCC Director of Research; (973) 596-5352; [sean.t.andrews@njit.edu](mailto:sean.t.andrews@njit.edu)  
**Iris Pantoja**, NCE, CoAD and MTSM Project Manager; 973-596-4483; [irp3@njit.edu](mailto:irp3@njit.edu)

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