

NJIT Research Newsletter

Issue: ORN-2018-01

Happy New Year!

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

Grant Opportunity Alerts: Keyword Index: Page 1

Special Announcements & Internal Competition: Page 2

Recent Awards: Page 6

In the News (Related to research funding): Page 7

Webinars and Events: Page 10

Grant Opportunities: Page 11

Streamlyne Update: Page 33

Grant Opportunity Alerts

Keywords and Areas Included in the Grant Opportunity Alert Section Below

NSF: Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science (NSF INCLUDES); Expeditions in Computing; Re-entry to Active Research Program (RARE); Critical Resilient Interdependent Infrastructure Systems and Processes 2.0 (CRISP 2.0); Smart and Connected Communities (S&CC)

NIH: Innovation Corps (I-Corps™) at NIH Program for NIH and CDC Translational Research; Understanding and Modifying Temporal Dynamics of Coordinated Neural Activity (R21); NEI Collaborative Clinical Vision Research Project: Coordinating Center Grant (UG1- Clinical Trial Required); BRAIN Initiative: Biology and Biophysics of Neural Stimulation (R01); Sleep disorders and circadian clock disruption in Alzheimer's disease and other dementias of aging (R01); NIBIB Exploratory/Developmental Research Grant Program (R21); Synthetic Biology for Engineering Applications (R01)

Department of Defense/US Army/DARPA/ONR: C4ISR, Information Operations and Information Technology System Research; Secretary of the Air Force (SecAF) 2030 Science and Technology (S&T) Study; Defense Enterprise Science Initiative (DESI); FY18 FOA Office of Naval Research (ONR) Navy and Marine Corps Science, Technology, Engineering & Mathematics (STEM), Education & Workforce Program; Research Interests AFOSR

Department of Energy: Bioimaging Research and Approaches for Bioenergy; OPEN 2018; State Energy Program 2017 Competitive Awards

NASA: ROSES 2017: Advancing Collaborative Connections for Earth System Science

National Endowment of Humanities: Digital Humanities Advancement Grants

Klingenstein-Simons Neuroscience Fellowships: Fellowship Awards in the Neurosciences

JDRF and the Helmsley Charitable Trust: Diabetes Innovation Challenge

Streamlyne Update: New How-to-do Videos

Special Announcements

Internal Competition for Institutional Submission for NSF INCLUDES Grant Opportunity

Grant Program: Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science (NSF INCLUDES)

Agency: National Science Foundation NSF 18-529

RFP Website: <https://www.nsf.gov/pubs/2018/nsf18529/nsf18529.htm>

Brief Description: NSF INCLUDES (Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science) is a comprehensive national initiative designed to enhance U.S. leadership in science, technology, engineering, and mathematics (STEM) discoveries and innovations by focusing on broadening participation in these fields at scale. The vision of NSF INCLUDES is to catalyze the STEM enterprise to collaboratively work for inclusive change, which will result in a STEM workforce that reflects the population of the Nation. The initiative is developing a National Network composed of NSF INCLUDES Design and Development Launch Pilots, NSF INCLUDES Alliances, an NSF INCLUDES Coordination Hub, NSF-funded broadening participation projects, other relevant NSF-funded projects, scholars engaged in broadening participation research, and other organizations that support the development of talent from all sectors of society to build an inclusive STEM workforce.

Please see the Grant Opportunity section for additional information.

Limit on Number of Proposals per Organization: An organization may serve as the lead institution on only one Alliance proposal. Organizations that serve as the lead institution on an Alliance proposal may still participate in other Alliance proposals as a collaborating institution. In the event that an organization exceeds the limit of one proposal as lead, proposals received within the limit will be accepted based on earliest date and time of proposal submission. No exceptions will be made.

Internal Competition: Please submit a pre-proposal for internal competition to your college dean(s) by **February 1**. College deans are requested to forward the proposals with their reviews and recommendations by **February 7**. After the institutional review, the selected pre-proposal will be announced by **February 15**. The pre-proposal should be up to 5 pages excluding cover page, budget with justification and NSF format biographical sketches of PI and Co-PIs in the following format (please follow the guidelines in the above RFP):

1. **Cover Page** with title and information of key investigators of the alliance
2. **Summary** of the proposal with Intellectual Merit and Broader Impact
3. **Vision:** Every NSF INCLUDES Alliance proposal should describe the vision of what the Alliance aspires to achieve. What will be different in the landscape of broadening participation in STEM as a result of the efforts of this Alliance?
4. **Partnerships:** Partnerships and networks are at the heart of the NSF INCLUDES National Network, and Alliance proposals should include a plan for creating a platform for partnerships and collaborative action that includes a "backbone" or support organization. How will the Alliance partners engage an expansive community in a shared vision of the importance and power of broadening participation for scientific innovation? Why is the partnership that is being developed the right partnership to achieve the vision?
5. **Goals and Metrics:** Alliance proposals should delineate how the partnerships and networks will develop and be driven by shared goals, available evidence from research that forms the basis for the plans, and the metrics and milestones that define the pathway to achieving the vision. Robust data collection plans and implementation research will

need to be included, to facilitate evidence-based decision making and adjustments as the Alliance matures.

6. **Leadership and Communication:** Alliance proposals should provide details for how the Alliance will build and strengthen capacity for leadership and communication among collaborating organizations and individuals to create opportunities and enact inclusion in STEM.
7. **Expansion, Sustainability and Scale:** Finally, Alliance proposals should discuss how the collaborative infrastructure building process will ultimately lead to: expansion (more partners joining the movement), sustainability (more long-term connections being made), and implementation of change at scale (a likelihood for collaborative change to lead to change on a broad scale).

Awards: Standard Grants; **Anticipated Funding Amount:** \$8,500,000

Letter of Intent: Not Required

Submission Deadline: April 04, 2018

Contacts: General inquiries may be addressed to:, telephone: (703)292-7303, email: nsfincludes@nsf.gov

NSF Proposal & Award Policies & Procedures Guide (PAPPG),
NSF 18-1: Effective January 29, 2018

Editorial changes have been made to either clarify or enhance the intended meaning of a sentence or section. The document has been updated to ensure consistency with data contained in NSF systems or guidance located in other NSF or Federal policy documents. Throughout the PAPPG, website, address and document references and organizational names have been updated to reflect current information.

SIGNIFICANT CHANGES

- **Chapter I.E, Who May Submit Proposals,** incorporates new coverage on the eligibility of international branch campuses of US institutions of higher education. The definition of colleges and universities in Chapter I.E.1 has been updated to now refer to institutions of higher education, for consistency with 2 CFR § 200. In addition, changes have been made to the eligibility requirements for foreign organizations.
- **Chapter II.C.1.e, Collaborators & Other Affiliations Information,** has been significantly revised to request information regarding collaborators and other affiliations (COA) be provided through use of a standard NSF COA template. Footnotes also have been added to address frequently asked questions relating to the new COA template.
- **Chapter II.C.2.d, Project Description,** has been modified to reflect that the Project Description must now contain a separate section specifically identified as "Intellectual Merit".
- **Chapter II.C.2.g, Budget and Budget Justification,** has been revised to increase the number of pages allowed for the budget justification to no more than five pages per proposal. This change applies to budget justifications for both proposers and subawardees.
- **Chapter VII.A.2, Grantee Notifications to NSF,** has been restructured to remove information on requests for NSF approval. In addition, Exhibit VII-1 has been deleted, as coverage on grantee requests for approval from NSF is contained in the Research Terms and Conditions Appendix A and Chapter X.A.3.

- **Chapter X.A.3, Prior Written Approvals**, has been updated to reference the Research Terms and Conditions Appendix A, which is the authoritative source of NSF prior approval requirements.

CLARIFICATIONS AND OTHER CHANGES

- **Section B, Foreword**, has been modified to refer to the applicable standard grant conditions, instead of solely the NSF Grant General Conditions, now that the Research Terms and Conditions have been implemented.
- **Section D, Definitions & NSF-Grantee Relationships**, provides additional guidance on the types of cooperative agreements awarded by NSF.
- **Section E, NSF Organizations**, has been revised to reflect the current responsibilities of the organizations that are normally of most direct interest to the NSF proposer and grantee community.
- **Chapter II.C.1.f, Submission of Proposals by Former NSF Staff**, incorporates new coverage to address submission of proposals from former NSF staff and the procedures that must be followed in such circumstances.
- **Chapter II.C.2.d(iii), Results from Prior NSF Support**, clarifies the timeframe during which any PI or co-PI that has received NSF support must report on such funding. Chapter II.E.7 on conference proposals, II.E.8 on equipment proposals, II.E.9 on travel proposals and Exhibit II-1, the Proposal Preparation Checklist, also have been updated with this guidance.
- **Chapter II.C.2.g(i)(a), Senior Personnel Salaries & Wages Policy**, has been supplemented with guidance that reflects it is the proposing organization's responsibility to define and apply the term "year" and include the definition in the budget justification.
- **Chapter II.C.2.g(viii), Indirect Costs**, has been updated to state that amounts for indirect costs should be specified in the budget justification.
- **Chapter II.C.2.j, Special Information and Supplementary Documentation**, includes additional guidance on the content for data management plans that involve collaborative activities.
- **Chapter II.D.4, Proposals Involving Vertebrate Animals**, has been revised to enhance the clarity of guidance on the use of vertebrate animals for research or education on NSF supported projects. For projects at an international organization that involve the use of vertebrate animals, a statement from the international organization will need to be provided.
- **Chapter II.D.5, Proposals Involving Human Subjects**, has been supplemented with additional language regarding international projects.
- **Chapters II.D.6 and XI.B.5, Life Sciences Dual Use Research of Concern (DURC)**, include new coverage regarding NSF's funding of research that would be considered to lead to a gain of function of agents. The title of these sections also has been changed for consistency with the US Government Policy for Institutional Oversight of Life Sciences Dual Use Research of Concern.
- **Chapter II.E.11, Research Infrastructure Proposal**, has been revised to reflect current practices and provide greater clarity in the description of these types of proposals.
- **Exhibit II-1, Proposal Preparation Checklist**, has been updated to reflect relevant changes made to Chapter II of the PAPPG. Additional checklist components also have been added to assist proposers in the pre-submission administrative review of proposals to NSF.

- **Chapter V, Renewal Proposals**, has been modified to update reference information regarding recompetition of expiring awards. Section B on Accomplishment-Based Renewals has been updated to provide greater clarity regarding the submission of reprints.
- **Chapter VII.B.2.e, Substitute (Change) PI/PD or co-PI/co-PD**, has been supplemented with guidance on the reappointment of prior NSF staff as PI.
- **Chapter VII.B.3, Subawarding or Transferring Part of an NSF Award (Subaward)**, has been modified for consistency with terminology in 2 CFR § 200.
- **Chapter VII.D.2, Final Project Report**, has been updated to reflect that when PIs submit the report, they are indicating that the scope of work is complete and no further administrative actions are anticipated on the grant.
- **Chapter VIII.E.6, Award Financial Reporting Requirements and Final Disbursements**, has been supplemented to clarify the intent of NSF notifications regarding canceling appropriations.
- **Chapter X.B, Direct Costs and X.C, Other Direct Costs**, have been modified to remove coverage that is redundant with 2 CFR § 200 and other sections of the PAPPG. Terminology on rearrangement and reconversion costs has been updated for consistency with 2 CFR § 200.462.
- **Chapter XI.A, Non-Discrimination Statutes and Regulations**, has been revised to provide current information on NSF grantee obligations to comply with civil rights laws and regulations. These changes provide NSF grantees and applicants for NSF grants with an overview of relevant civil rights regulatory obligations and compliance mechanisms. Information also has been included on how grantee program participants can file complaints with NSF alleging discrimination in an NSF grantee's programs.
- **Chapter XI.B.1, Human Subjects and XI.B.3, Vertebrate Animals**, include the relevant new award-specific condition on organizational responsibilities. In addition, language has been added on post-award responsibilities.
- **Chapter XI.D.1.d, Intellectual Property**, has been updated to specify that grantees are required to use iEdison to disclose NSF subject inventions. In addition, NSF now reserves the option to request an Annual Utilization Report or a Final Invention Statement and Certification.
- **Chapter XI.M.4, Executive Order 13788, Buy American and Hire American**, is a new section which serves as NSF's implementation of Executive Order 13788.

New PAPPG is posted on the website

https://www.nsf.gov/pubs/policydocs/pappg18_1/sigchanges.jsp

Change of Grants.gov Software for Proposal Submission to NIH

Beginning January 1, 2018, all grant applicants must use Workspace to submit applications through [Grants.gov](https://www.grants.gov). Office of Research and IST staff members have updated the Streamlyne system to align with Grants.gov Workspace system for submission of proposals to NIH. Since the response from Workspace system would be a learning experience for everyone, it is critical that timeline for proposal submission policy is completely followed to allow enough time for addressing any error or system delays. Faculty and staff submitting proposals as Principal Investigators are requested to work with Office of Research ambassadors and staff to following the following timeline:

- 2 weeks before due date the budget should be finalized and the approval proposal process should be initiated. This includes the Department approval and conflict of interest forms with the PI's and Department Chair's signature, the detailed budget and justification, proposal title, and preliminary specific aims (NIH), proposal summary (NSF), or contract scope of work (SOW).
- 1 week before the due date, all approvals should be entered in the Streamlyne system
- 72 hours prior to submission the SRA will initiate a proposal review and check for submission errors. For this to occur, all portions of the proposal should be completed and ready for submission with the exception of the proposal narrative. Only a draft of the proposal is needed at this point as a place holder for error checking.
- 48 hours prior to the deadline, the PI should release the final version of the proposal to the SRA office for final system validation and on-time submission.

Any questions should be directed to ambassadors or Office of Research staff as listed at the end of this newsletter.

Recent Research Grant and Contract Awards

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

PI: Sagnik Basuray (PI)

Department: Chemical, Pharmaceutical and Biological Engineering

Grant/Contract Project Title: CAREER: Electrochemical Platform for Multiplexed Detection of Cancer Biomarker Panel Using Shear-Enhanced Nanoporous-Capacitive Electrodes

Funding Agency: NSF

Duration: 09/01/18-08/31/23

PI: Louis Lanzerotti (PI) and Andrew Gerrard (Co-PI)

Department: Center for Solar Terrestrial Research

Grant/Contract Project Title: Van Allen Probes RBSPICE Phase E Operations - Extended Mission I (ARDES)

Funding Agency: NASA

Duration: 07/15/16-01/31/18

PI: Gelu Nita (PI) and Dale Gary (Co-PI)

Department: Center for Solar Terrestrial Research

Grant/Contract Project Title: Workshop: Roadmap for Reliable Ensemble Forecasting of the Sun-Earth System

Funding Agency: NASA

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

PI: Michele Rittenhouse (PI), Augustus Wendell (co-PI) and Louis Wells (Co-PI)

Department: Humanities

Grant/Contract Project Title: STEM Panels for Arts (Middlesex County Vocational Technical High-school)

Funding Agency: NJDOE

Duration: 12/15/17-01/14/21

PI: Qiang Tang (PI) and Chase Wu (Co-PI)
Department: Computer Science
Grant/Contract Project Title: Blockchain-Based Energy Systems
Funding Agency: OS Department of Energy
Duration: 06/21/17-03/11/18

PI: Rima Taher (PI)
Department: Architecture
Grant/Contract Project Title: Risk Assessment for NYC Department of Buildings / Study of Illegal and Unsafe Construction Practices in New York City
Funding Agency: NY City Department of Buildings
Duration: 09/01/17-08/31/18

PI: Gale Spak (PI)
Department: CPE
Grant/Contract Project Title: Workforce Development Program: Employer Engagement Services
Funding Agency: Workforce Development: Sussex County
Duration: 10/01/17-06/30/18

PI: Gale Spak (PI)
Department: CPE
Grant/Contract Project Title: NJ Talent Network Technology Consultants
Funding Agency: NJ Department of Labor & Workforce Development
Duration: 01/01/18-12/31/18

PI: Gale Spak (PI)
Department: CPE
Grant/Contract Project Title: Construction and Utilities (North) Talent Network
Funding Agency: NJ Department of Labor & Workforce Development
Duration: 01/01/18-12/31/18

PI: Bruno Goncalves da Silva (PI)
Department: Civil and Environmental Engineering
Grant/Contract Project Title: Effects of the Triaxial State of Stress in the Connectivity of Hydraulically-Created Fractures in Crystalline Rocks (REU Supplement)
Funding Agency: NSF
Duration: 09/01/17-08/31/18

PI: Tara Alvarez (PI)
Department: Biomedical Engineering
Grant/Contract Project Title: Virtual Reality Vision Therapy
Funding Agency: NJ Health Foundation
Duration: 12/22/17-06/21/18

PI: Deane Evans (PI)
Department: Architecture
Grant/Contract Project Title: Building Efficiency Packages

Funding Agency: US Department of Energy

Duration: 09/01/17-08/31/18

In the News...

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

Infrastructure Initiative and R&D? According to Lewis-Burke Associates, ASEE's federal relations partner: "Preliminary details suggest the White House is coalescing around a \$200 billion injection of federal funds to stimulate a much larger investment—estimated at around \$800 billion—by states and private entities." Federal money would be divided among projects for which state and local governments have identified revenue for construction and maintenance; rural infrastructure; federal loan programs; and "major, transformative projects that have a regional or national impact." Lewis-Burke has ideas for how an infrastructure initiative could build on advances in automated and connected vehicles and the Internet of Things. "To continue this growth requires new technologies enabled by the research enterprise that brings fundamental research to the edge of commercialization. The critical role of smart infrastructure research supported by the National Science Foundation, the U.S. Department of Transportation, the National Institute of Standards and Technology, and other agencies is vital to effective investments to revolutionize U.S. infrastructure. Advances in lightweight materials, sophisticated and smaller sensors that generate massive amounts of data, and artificial intelligence are just some of the products of this research that enable cutting edge applications for smart cities, rural communities, and the next generation of infrastructure technologies."

'INCLUDES' Alliances: NSF's Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science (INCLUDES) program has funding available and specific instructions for alliances. "Collectively, the set of NSF INCLUDES Alliances are to: 1) Participate in a network of peer alliances to achieve long-term goals of the NSF INCLUDES program; 2) Collaborate with the NSF INCLUDES Coordination Hub to build critical knowledge that shows measurable progress toward long-term goals; and 3) Work to build on-ramps for other organizations and broadening participation stakeholders to join in and expand the NSF National Network. More information is posted on <https://nsf.gov/pubs/2018/nsf18529/nsf18529.htm?org=NSF>

The Future of Computing: The Directorate for Computer and Information Science and Engineering's Expeditions in Computing program is offering up to \$2,000,000 per year for five years for "ambitious, fundamental research agendas that promise to define the future of computing and information. . . . [I]nvestigators are encouraged to come together within or across departments or institutions to combine their creative talents in the identification of compelling, transformative research agendas that promise disruptive innovations" More information is posted on the website <https://nsf.gov/pubs/2018/nsf18528/nsf18528.htm?org=NSF>

USE-INSPIRED RESEARCH: The Pentagon's Defense Enterprise Science Initiative (DESI) "incentivizes use-inspired basic research projects, defined as a scientific study or experiment directed toward increasing fundamental knowledge and understanding in the context of end-use applications." Projects bring together industry and university teams with the aim of discovering

completely new solutions to challenging defense and national security problems, and using that knowledge to influence existing or new acquisition programs. DESI-funded projects also aim to accelerate the impact of basic research results on defense capabilities. Teams will be awarded up to \$1.5 million over two years. This year's research topics include power beaming, highly maneuverable autonomous UAV, soft active composites, metamaterial-based antennas, and an alternate topic submitted by the teams. More information is posted on the website <https://www.grants.gov/web/grants/view-opportunity.html?oppId=299112>

A CLOSER LOOK AT PLANTS: The Department of Energy seeks to support interdisciplinary fundamental research "towards enabling new bioimaging capabilities for the study of plant and microbial systems" relevant to bioenergy. "New imaging instrumentation is needed to observe and characterize multiple metabolic processes occurring within the living plant and microbial systems." DOE envisions "multimodal imaging devices constructed by merging new, innovative and/or transformational improvements to existing capabilities which will enable simultaneous observations in synergistic combination with correlated structural and/or chemical imaging." More information is posted on the website https://science.energy.gov/~media/grants/pdf/foas/2018/SC_FOA_0001868.pdf

DARPA Subterranean Challenge Proposers Day: DARPA's Subterranean (SubT) Challenge "aims to explore new approaches to rapidly map, navigate, and search underground environments" that are too hazardous for human first responders. A Proposers Day is set for January 18 in Arlington, Virginia. Advance registration closes at 12:00 PM Eastern on January 10, 2018 for onsite attendance and 12:00 PM Eastern on January 16, 2018 for virtual attendance, or until capacity is reached. More information is posted on <https://www.fbo.gov/index?s=opportunity&mode=form&id=cfe263bcef3fb327e03f84d53f5b84cc&tab=core&cvview=0>

Defense Enterprise Science Initiative (DESI): in which university-industry teams discover "completely new solutions to challenging defense and national security problems" and use that knowledge "to influence existing or new acquisition programs" is the intent of the Pentagon's [Defense Enterprise Science Initiative \(DESI\)](#). "Industry's initial role in a DESI project is to provide a national security context for the defense challenge, and to collaborate with the university research team throughout the project. The university's role is to invent or discover knowledge that could be leveraged for completely new solutions to the defense challenge." More information is posted on the website <https://www.grants.gov/web/grants/view-opportunity.html?oppId=299112>

Research Data Sharing: The Association of American Universities and Association of Public and Land-grant Universities have jointly [issued a report](#) that "details steps federal agencies can take to facilitate public access to research data in a viable and sustainable manner that advances science in the public interest while minimizing the administrative burden on agencies, universities, and researchers." "In this era of open scholarship, greater access to research findings and data, especially when grounded in the FAIR principles (findable, accessible, interoperable, reusable), has proven to be an important way to accelerate scientific progress and advance innovation to better serve the public good. Although there is general agreement about the value of increased public access to data, ensuring such expanded access will require a significant culture shift at universities and among their faculty, thoughtful and carefully crafted new government policies and practices, and investment in the infrastructure required to make data publicly accessible. For more

information on the recommendation process, please visit <https://www.aau.edu/sites/default/files/AAU-Files/Key-Issues/Intellectual-Property/Public-Open-Access/AAU-APLU-Public-Access-Working-Group-Report.pdf>

Webinar and Events

Event: NSF Smart & Connected Communities Program Webinar

Sponsor: NSF

When: January 8, 2018 from 3.00 PM to 4.00 PM

Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=244107&org=NSF

Brief Description: The goal of the [Smart & Connected Communities \(S&CC\) program solicitation](#) is to accelerate the creation of the scientific and engineering foundations that will enable smart and connected communities to bring about new levels of economic opportunity and growth, safety and security, health and wellness, and overall quality of life. This goal will be achieved through integrative research projects that pair advances in technological and social dimensions with meaningful community engagement.

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

Successful S&CC projects are expected to pursue Integrative research that addresses the technological and social dimensions of smart and connected communities and undertake meaningful community engagement that integrates community stakeholders within the project. A management plan that summarizes how the project will be managed across disciplines, institutions, and community entities, and an evaluation plan for assessing short-, medium-, and long-term impacts of the proposed activities are required.

Proposals should engage the multidisciplinary perspectives of scientific areas supported by NSF’s Directorates for Computer and Information Science and Engineering (CISE), Education and Human Resources (EHR), Engineering (ENG), Geosciences (GEO), and Social, Behavioral, and Economic Sciences (SBE). Awards may be requested for total budgets ranging from \$750,000 to \$3,000,000 for periods of up to four years.

Speaker: Prof. Yu Cheng, Dept. of Elec. and Comput. Eng., Illinois Institute of Technology, Chicago

To Join the webinar, please register

at <https://nsf.webex.com/nsf/onstag/g.php?MTID=eac85437faed7267088a227c70fb7aa12>

by 11:59pm EDT on Sunday January 7, 2018. NOTE: This webinar will cover the same material as the January 4th webinar did. If you attended the January 4th webinar, there is no need to attend this webinar.

Event: Partnerships for Innovation Webinar

Sponsor: NSF

When: January 10, 2018 from 2.00 PM to 4.00 PM

Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=244045&org=NSF

Brief Description: The [NSF Partnerships for Innovation program \(PFI\)](#) offers researchers the opportunity to transform new knowledge into societal benefits through translational research and technology development efforts that catalyze partnerships and accelerate innovations.

The [FY 2018 PFI solicitation](#) offers two broad tracks for proposals:

- Technology Translation (PFI-TT) track
- Research Partnerships (PFI-RP) track

Join this webinar to learn more about the program goals, its two tracks, eligibility and other aspects of the solicitation. Potential investigators and partners are encouraged to attend.

Advance registration for the webinar is required.

To join the webinar: [Register via WebEx](#)

Contacts

Prakash Balan, (703) 292-5341, [email:pbalan@nsf.gov](mailto:pbalan@nsf.gov)

Jesus V. Soriano, (703) 292-7795, [email:jsoriano@nsf.gov](mailto:jsoriano@nsf.gov)

Event: Distinguished Lecture: Visualizing Science and Technology

Sponsor: NSF

When: January 16, 2018 from 10.30 AM to 11.30 AM

Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=244105&org=NSF

Brief Description: In the information age, high-performance computing (HPC), big data, and advanced data mining, modeling and visualization algorithms are employed to solve major health, energy, environmental, and other challenges.

Well-designed data visualizations make it possible to rapidly explore, understand, manage, and communicate data in support of data-driven decision making in personal and professional life.

Academic and industry leaders use computational models and visualizations of science and technology (S&T) to identify and monitor emerging areas of research, the activity of collaborators and competitors, or pathways of innovation. The ability to read and make data visualizations becomes as important as the ability to read and write text.

This talk identifies key challenges when (1) using existing HPC to model and visualize S&T developments, (2) teaching HPC to MOOC students from 100 countries, (3) developing “macroscope” tools that empower non-computer scientists to benefit from HPC resources.

It also presents research that showcases the value of university and NSF IT resource investments on funding intake, publication and citation output, and the growth of collaboration networks. Finally, the talk showcases augmented reality visualizations that communicate the inner workings of IoT systems. These topics were a focus of the recent NAS Sackler Symposium on [Modeling and Visualizing Science and Technology Developments](#).

To join the webinar: To attend virtually, join [via WebEx](#) (event number 748 351 379 and password: uRJMB2P*) or by phone at (800) 857-8793 (or 1-517-268-4823) with passcode 4984574.

Grant Opportunities

National Science Foundation

Grant Program: Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science (NSF INCLUDES)

Agency: National Science Foundation NSF 18-529

RFP Website: <https://www.nsf.gov/pubs/2018/nsf18529/nsf18529.htm>

Brief Description: NSF INCLUDES (Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science) is a comprehensive national initiative designed to enhance U.S. leadership in science, technology, engineering, and mathematics (STEM) discoveries and innovations by focusing on broadening participation in these fields at scale. The vision of NSF INCLUDES is to catalyze the STEM enterprise to collaboratively work for inclusive change, which will result in a STEM workforce that reflects the population of the Nation. The initiative is developing a National Network composed of NSF INCLUDES Design and Development Launch Pilots, NSF INCLUDES Alliances, an NSF INCLUDES Coordination Hub, NSF-funded broadening participation projects, other relevant NSF-funded projects, scholars engaged in broadening participation research, and other organizations that support the development of talent from all sectors of society to build an inclusive STEM workforce. The successful implementation of NSF INCLUDES will result in substantial advances toward a diverse, innovative, and well-prepared STEM workforce to support our Nation's economy and continued U.S. leadership in the global STEM enterprise. It is anticipated that NSF's investment will contribute to new and improved STEM career pathways, policies, opportunities to learn, and practices for equity and inclusion. The initiative will be supported by the NSF INCLUDES Coordination Hub ([NSF 17-591](#)) that will provide a framework for communication and networking, network assistance and reinforcement, and visibility and expansion for the NSF INCLUDES National Network as a whole.

This solicitation offers opportunities for NSF INCLUDES Alliances. The critical functions of each NSF INCLUDES Alliance are to:

1. Develop a vision and strategy (e.g., problem statement and theory of change) for broadening participation in STEM along with relevant metrics of success and key milestones/goals to be achieved during the project's lifecycle;
2. Contribute to the knowledge base on broadening participation in STEM through broadening participation and implementation research, sharing project evaluations, data, new scientific findings/discoveries, and promising practices;
3. Develop multi-stakeholder partnerships and build infrastructure among them to decrease social distance and achieve progress on common goals targeted by the Alliance;
4. Establish a "backbone" or support organization that provides a framework for communication and networking, network assistance and reinforcement, visibility and expansion of the Alliance and its partners, that will collaborate with the NSF INCLUDES Coordination Hub;
5. Advance a logic model or other heuristic that identifies Alliance outcomes that reflect implementation of change at scale and progress toward developing an inclusive STEM enterprise.

Collectively, the set of NSF INCLUDES Alliances are to:

1. 1) Participate in a network of peer alliances to achieve long-term goals of the NSF INCLUDES program;
2. 2) Collaborate with the NSF INCLUDES Coordination Hub to build critical knowledge that shows measurable progress toward long-term goals; and
3. 3) Work to build on-ramps for other organizations and broadening participation stakeholders to join in and expand the NSF National Network.

All NSF INCLUDES Alliance proposals should describe the results they expect to achieve in broadening participation in STEM. Each proposal must explain how they will build the infrastructure to foster collaboration and achieve impact by emphasizing the following five characteristics of the NSF INCLUDES Program: a) Vision, b) Partnerships, c) Goals and Metrics, d) Leadership and Communication, and e) the Potential for Expansion, Sustainability and Scale.

Limit on Number of Proposals per Organization: An organization may serve as the lead institution on only one Alliance proposal. Organizations that serve as the lead institution on an Alliance proposal may still participate in other Alliance proposals as a collaborating institution. In the event that an organization exceeds the limit of one proposal as lead, proposals received within the limit will be accepted based on earliest date and time of proposal submission. No exceptions will be made.

Internal Competition: Please submit a pre-proposal for internal competition to your college dean(s) by **February 1**. College deans are requested to forward the proposals with their reviews and recommendations by **February 7**. After the institutional review, the selected pre-proposal will be announced by **February 15**. The pre-proposal should be up to 5 pages excluding cover page, budget with justification and NSF format biographical sketches of PI and Ci-PIs in the following format (please follow the guidelines in the above RFP):

8. **Cover Page** with title and information of key investigators of the alliance
9. **Summary** of the proposal with Intellectual Merit and Broader Impact
10. **Vision:** Every NSF INCLUDES Alliance proposal should describe the vision of what the Alliance aspires to achieve. What will be different in the landscape of broadening participation in STEM as a result of the efforts of this Alliance?
11. **Partnerships:** Partnerships and networks are at the heart of the NSF INCLUDES National Network, and Alliance proposals should include a plan for creating a platform for partnerships and collaborative action that includes a "backbone" or support organization. How will the Alliance partners engage an expansive community in a shared vision of the importance and power of broadening participation for scientific innovation? Why is the partnership that is being developed the right partnership to achieve the vision?
12. **Goals and Metrics:** Alliance proposals should delineate how the partnerships and networks will develop and be driven by shared goals, available evidence from research that forms the basis for the plans, and the metrics and milestones that define the pathway to achieving the vision. Robust data collection plans and implementation research will need to be included, to facilitate evidence-based decision making and adjustments as the Alliance matures.
13. **Leadership and Communication:** Alliance proposals should provide details for how the Alliance will build and strengthen capacity for leadership and communication among collaborating organizations and individuals to create opportunities and enact inclusion in STEM.
14. **Expansion, Sustainability and Scale:** Finally, Alliance proposals should discuss how the collaborative infrastructure building process will ultimately lead to: expansion (more partners joining the movement), sustainability (more long-term connections being made), and implementation of change at scale (a likelihood for collaborative change to lead to change on a broad scale).

Awards: Standard Grants; **Anticipated Funding Amount:** \$8,500,000

Letter of Intent: Not Required

Submission Deadline: April 04, 2018

Contacts: General inquiries may be addressed to:, telephone: (703)292-7303, email: nsfincludes@nsf.gov

Grant Program: Expeditions in Computing

Agency: National Science Foundation NSF 18-528

RFP Website: <https://www.nsf.gov/pubs/2018/nsf18528/nsf18528.htm>

Brief Description: The far-reaching impact and rate of innovation in the computer and information science and engineering fields has been remarkable, generating economic prosperity and enhancing the quality of life for people throughout the world.

The Directorate for Computer and Information Science and Engineering (CISE) has established the *Expeditions in Computing (Expeditions)* program to provide the CISE research and education community with the opportunity to pursue ambitious, fundamental research agendas that promise to define the future of computing and information.

In planning **Expeditions projects**, investigators are encouraged to come together within or across departments or institutions to combine their creative talents in the identification of compelling, transformative research agendas that promise disruptive innovations in computer and information science and engineering for many years to come.

Funded at levels up to \$2,000,000 per year for five years, *Expeditions* projects represent some of the largest single investments currently made by the CISE directorate. Together with the Science and Technology Centers that CISE supports, *Expeditions* projects form the centerpiece of the directorate's center-scale award portfolio. With awards funded at levels that promote the formation of large research teams, CISE recognizes that concurrent research advances in multiple fields or sub-fields are often necessary to stimulate deep and enduring outcomes. The awards made in this program will complement research areas supported by other CISE programs, which target particular computer and information science and engineering fields.

Additionally, CISE offers **Innovation Transition (InTrans) awards** for teams nearing the end of their *Expeditions* as well as Secure and Trustworthy Cyberspace (SaTC) and Cyber-Physical Systems (CPS) Frontier projects. The goal of *InTrans* is to continue the long-term vision and objectives of CISE's center-scale projects. Through In Trans awards, CISE will provide limited funds to match industry support.

Awards: Up to \$30,000,000 total for each competition, subject to the availability of funds. *Expeditions* projects with annual budgets up to \$2,000,000 for durations of five years will be supported.

Letter of Intent: Not Required

Preliminary Proposal Required: Deadline: April 25, 2018

Full Proposal Submission Deadline: January 16, 2019

Contacts: Mitra Basu, Program Director, telephone: (703) 292-8910, email: mbasu@nsf.gov

Grant Program: Re-entry to Active Research Program (RARE)

Agency: National Science Foundation NSF 18-525

RFP Website: <https://www.nsf.gov/pubs/2018/nsf18525/nsf18525.htm>

Brief Description: The Division of Chemical, Bioengineering, Environmental, and Transport Systems (CBET) is conducting a Re-entry to Active Research (RARE) program to reengage, retrain, and broaden participation within the academic workforce. The primary objective of the RARE program is to catalyze the advancement along the academic tenure-track of highly meritorious individuals who are returning from a hiatus from active research. By providing re-entry points to active academic research, the RARE program will reinvest in the nation's most highly trained scientists and engineers, while broadening participation and increasing diversity of experience. A RARE research proposal must describe potentially transformative research that falls within the scope of participating [CBET programs](#).

The RARE program includes two Tracks to catalyze the advancement of investigators along the academic tenure system after a research hiatus, either to a tenure-track position or to a higher-tenured academic rank. Track 1 of the RARE program reengages investigators in a

competitive funding opportunity with accommodations for gap in record that are a result of the research hiatus. A Track 1 proposal will follow the budgetary guidelines of the relevant CBET program for an unsolicited research proposal. Track 2 retrains investigators for whom the research hiatus has led to the need for new or updated techniques, such that retraining is required to return the investigator to competitive research activity. A description of how these new techniques will lead to competitive research in CBET programs is required. A Track 2 proposal budget will include only funds necessary for specific retraining activities, such as travel to a workshop or conference, workshop registration fees, a retraining sabbatical, or seed funding to support collection of preliminary data (including salary support, equipment usage fees, materials, and/or supplies).

Who May Serve as PI: Investigators must contact a RARE program director to confirm eligibility prior to submission. The investigator will receive an e-mail confirmation of eligibility, which must be uploaded as a Single Copy document with the proposal submission.

Awards: Standard Grants; **Anticipated Funding Amount:** \$1,200,000

Letter of Intent: Not Required

Submission Deadline: Anytime

Contacts: José Lage, telephone: (703) 292-4997, email: jlage@nsf.gov

- Angela Lueking, telephone: (703) 292-2161, email: alueking@nsf.gov
 - Robert McCabe, telephone: (703) 292-4826, email: rmccabe@nsf.gov
-

Grant Program: Critical Resilient Interdependent Infrastructure Systems and Processes 2.0 FY18 (CRISP 2.0)

Agency: National Science Foundation NSF 18-523

RFP Website: <https://www.nsf.gov/pubs/2018/nsf18523/nsf18523.htm>

Brief Description: This CRISP 2.0 solicitation responds both to national needs on the resilience of critical infrastructures and to increasing NSF emphasis on transdisciplinary research. In this context, the solicitation is one element of the NSF-wide Risk and Resilience activity, with the overarching goal of advancing knowledge in support of improvement of the nation's infrastructure resilience. The devastating effects of recent disasters such as Hurricanes Harvey, Irma and Maria have underscored that a great deal remains to be done. In addition, CRISP 2.0 is aligned with the NSF-wide frontier thinking on convergence, characterized as "deep integration of knowledge, techniques, and expertise from multiple fields to form new and expanded frameworks for addressing scientific and societal challenges and opportunities". The Directorate of Engineering and the Directorate of Social, Behavioral, and Economic Sciences therefore jointly invest in the CRISP 2.0 solicitation to stimulate the integration of engineering, and social, behavioral and economic sciences to foster new paradigms and domains in interdependent critical infrastructures.

Critical infrastructures are the mainstay of our nation's economy, security and well-being. They provide essential services through systems and processes. Many of the critical infrastructures are interconnected and even interdependent. This solicitation calls for integrated research on Interdependent Critical Infrastructures (ICIs) by interdisciplinary teams of engineers and social, behavioral, and economic scientists. Research funded through this program is expected to provide the momentum to create a new science of integrative designs in ICIs, to stimulate economic growth, and to inform how communities can engage diverse resources to improve the quality of life for their inhabitants.

Infrastructures are networks of systems and processes that function cooperatively and synergistically to produce and distribute a continuous flow of essential goods and services. For

this competition, two or more infrastructures are said to be interdependent if they require each other's services or if the processes by which they deliver services can be affected by each other. The goals of the **Critical Resilient Interdependent Infrastructure Systems and Processes 2.0** (CRISP 2.0) solicitation are to: (1) foster an interdisciplinary research community of engineers and social, behavioral, and economic (SBE) scientists who work synergistically together for innovation in the design and management of infrastructures as processes and services; (2) transform relevant fields by re-thinking ICIs as processes and services that may have complementary and/or substitutional roles with each other; (3) create innovations in ICIs that contribute directly and positively to people's quality of life, spur economic growth, and respond to both internal perturbations and external shocks, regardless of whether they are natural, technological or human-induced.

Awards: Standard Grants; **Anticipated Funding Amount:** \$13,400,000

Letter of Intent: Not Required

Submission Deadline: March 07, 2018

Contacts: Robert E. O'Connor (SBE/SES), telephone: (703) 292-7263, email: roconnor@nsf.gov

- Cynthia Chen (ENG/CMMI), telephone: (703) 292-2563, email: qchen@nsf.gov
 - Wenda Bauchspies (SBE/SES), telephone: (703) 292 5026, email: wbauchsp@nsf.gov
 - Robin L. Dillon-Merrill (ENG/CMMI), telephone: (703) 292-4921, email: rdillonm@nsf.gov
-

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

Agency: National Science Foundation NSF 18-520

RFP Website: <https://www.nsf.gov/pubs/2018/nsf18520/nsf18520.htm>

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

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

A proposal for an S&CC Integrative Research Grants must include the following:

- Integrative research that addresses the technological and social dimensions of smart and connected communities;
- Meaningful community engagement that integrates community stakeholders within the project;
- A management plan that summarizes how the project will be managed across disciplines, institutions, and community entities; and

- An evaluation plan for assessing short-, medium-, and long-term impacts of the proposed activities.

S&CC is a cross-directorate program supported by NSF's Directorates for Computer and Information Science and Engineering (CISE), Education and Human Resources (EHR), Engineering (ENG), Geosciences (GEO), and Social, Behavioral, and Economic Sciences (SBE). Awards may be requested for total budgets ranging from \$750,000 to \$3,000,000 for periods of up to four years.

Awards: Standard Grants; **Anticipated Funding Amount:** \$19,250,000

Letter of Intent: Required; January 30, 2018

Submission Deadline: February 28, 2018

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

- Radhakishan Baheti, Program Director, ENG/ECCS, telephone: (703) 292-8339, email: rbaheti@nsf.gov
- Cynthia Chen, Program Director, ENG/CMMI, telephone: (703)292-2563, email: qchen@nsf.gov

National Institutes of Health

Grant Program: Innovation Corps (I-Corps™) at NIH Program for NIH and CDC Translational Research (Admin Supp - Clinical Trial Not Allowed)

Agency: National Institutes of Health PA-18-517

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PA-18-517.html>

Brief Description: The goal of the I-Corps™ Program is to accelerate the translation of biomedical research to the marketplace by providing training to SBIR and STTR grantees in the areas of innovation and entrepreneurship. Under this program, the NIH and CDC foster the development of early-stage biomedical technologies, focus on teaching researchers how to gain a clearer understanding of the value of their inventions in the marketplace, and ultimately how to advance their technologies from the research lab into the commercial world. This program is designed to complement activities within the scope of the parent SBIR Phase I (R43) or STTR Phase I (R41) grant or the Phase I portion of an SBIR/STTR Fast-Track grant (R44/R42, respectively), to help accelerate the commercialization of new products and services derived from NIH- and CDC-funded technical feasibility studies.

Through this program, I-Corps™ teams will participate in an entrepreneurial immersion course. The I-Corps™ curriculum uses a hypothesis-driven method of customer discovery in order to gain insights into the issues associated with technology commercialization. As part of this program, participants are required to get "out of the lab" and gather information by conducting a large number of interviews (i.e., 100+) with potential customers, strategic partners, and other third-party stakeholders. During the course, I-Corps™ teams share what they learn with instructors and other teams, gaining new insights into the prospective impact of the technology being developed under the SBIR or STTR grant. It is anticipated that the feedback and learning gained during the I-Corps™ program will help inform future Phase II SBIR/STTR projects and commercialization strategies.

The I-Corps™ program will be supported through administrative supplement awards to active NIH or CDC SBIR and STTR Phase I grantees. Administrative supplement awards are intended only to support travel and other costs associated with the training program. A cohort (up to 24 teams per cohort) will be selected to participate in the I-Corps™ at NIH program, which is expected to last approximately eight weeks. **The NIH anticipates that applicants receiving**

administrative supplements under this FOA will be enrolled in the I-Corps™ at NIH Program in the first of two cohorts in 2018. Only one cohort is invited through this FOA.

Awards: NIH/CDC intends to commit up to \$1,200,000 in FY 2018 to fund up to 24 awards.

Application budgets are limited to no more than \$50,000 in total direct costs, and must reflect the actual needs of the proposed project. Note in Section IV.2 that proposed budgets should also include \$20,000 per team to cover workshop registration fees (\$20,000 out of the total budget allowed of \$50,000).

Letter of Intent: Not Required

Deadline: March 5, 2018, by 5:00 PM local time of applicant organization.

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.

Application Due Date	March 5, 2018
Phone Interview	April 9, 2018 (estimated)
Notice of Award	April 30, 2018 (estimated)
Kick-off/Close-out Venue	TBD
Course Kick-off	June 18-21, 2018 (Monday-Thursday)
Web-Ex Courses	Wednesdays, 1-5PM ET Jun 27 Jul 11 Jul 18 Jul 25 Aug 1 Aug 8
Course Close-out/ Lessons-Learned	August 13-14, 2018 (Monday-Tuesday)
Cohort Size	24 teams

Grant Program: Understanding and Modifying Temporal Dynamics of Coordinated Neural Activity (R21 Clinical Trial Optional)

Agency: National Institutes of Health PAR-18-55

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-18-554.html>

Brief Description: Cognition appears to emerge at the level of populations of neurons, with information represented and organized as action potentials and network events that are temporally coordinated across brain areas. For example, there have been notable advances in our basic understanding of the role of local field potential (LFP) oscillations and large-scale coordination of neural networks in learning and memory. In rodents, particular patterns of temporal dynamics have been shown to proportionally improve or worsen working memory, and particular LFP oscillatory bands predict episodic/relational learning. Theta phase precession is another well-known precise temporal code that might be required for optimal cognition, and the precise reactivation of neural activity during hippocampal sharp wave ripples is also a temporally

coordinated representation that might be necessary for memory consolidation or decision making.

Applications must address at least one, and ideally more, of the following topic areas:

Topic 1: Temporal dynamics of neural patterns that impact cognition, affect, or social behavior

In animals or humans, determine which aspects of temporal coordination of systems-level neural activity affect particular domains of function such as working memory, long-term memory, relational/spatial processing, attention, cognitive control, decision making, affect regulation, or social cognition. Projects should manipulate specific aspects of the electrophysiological patterns (e.g., the power of oscillatory frequencies during particular task periods, or the degree of phase-amplitude coupling of particular frequency pairs) to determine what parameters, if manipulated appropriately, might yield the most robust and reliable improvements in behavior.

Topic 2: Understanding how molecular aberrations lead to systems-level discoordination

In animals or humans, understand how particular abnormalities at the cellular or molecular level, such as glutamate or GABA receptor dysfunction, affect the coordination of electrophysiological patterns during cognitive, affective, or social processing. Single-gene disorders in particular, such as Fragile X or Rett syndromes, might be a good opportunity to study such mechanistic questions in the context of systems level dynamics, but the case can also be made for neuropsychiatric disorders of more heterogeneous etiology.

Topic 3: Animal-to-human translation

Determine whether the changes in neural coordination patterns that improve cognition in animals predict analogous electrophysiological and cognitive improvements in normal humans and/or clinical populations. A key goal is to understand the translational value of systems electrophysiology in pre-clinical models, to know whether an electrophysiological pattern identified in a relevant model system is predictive of a similarly aberrant pattern in patients, and whether the effects of any interventions in animals are predictive of their effects in humans.

Topic 4: Computational modeling

Develop a biologically realistic computational model to allow a principled understanding of the algorithms and mechanisms by which neural coordination patterns across brain areas affect cognitive, affective, and social processing. The computational models can cross levels, such as from the biophysical level to systems-level emergent properties, and they can also be top-down, such as mathematically describing and manipulating higher-order parameters of oscillatory coordination in relation to information processing and behavioral output. Projects that address the topic of computational modeling should also include work in animals or in humans, provide testable predictions, and be closely informed by the results.

Awards: The combined budget for direct costs for the two-year project period may not exceed \$275,000. No more than \$200,000 may be requested in any single year.

Letter of Intent: Not Required

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

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

Grant Program: NEI Collaborative Clinical Vision Research Project: Coordinating Center Grant (UG1- Clinical Trial Required)

Agency: National Institutes of Health PAR-18-521

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-18-521.html>

Brief Description: The scope of this FOA is to encourage grant applications for investigator-initiated clinical trials to establish the efficacy or compare the effectiveness of screening, diagnostic, preventative or therapeutic interventions.

Separate applications may be submitted for Chair's or Resource Centers under the following respective UG1 companion FOAs:

- [PAR-18-523](#) NEI Collaborative Clinical Vision Research Project: Chair's Grant (the Chair's Grant provides the clinical, scientific, and technical leadership to the study)
- [PAR-18-522](#) NEI Collaborative Clinical Vision Research Project: Resource Center Grant. (The Resource Center provides the expertise and infrastructure for imaging, laboratory, or other requisite services)

The NEI will accept under this FOA vision-related ancillary studies to parent clinical trials supported by the NIH. Renewal applications that request additional years or funds to complete the original aims of a clinical trial will be accepted under this FOA. Renewal applications may also be submitted to request support to extend follow-up of clinical trial cohorts after completion of the primary study goals to gather information on longer-term outcomes. As applicable, this FOA may support laboratory work attending: study product manufacture, repackaging and distribution; quality assurance (i.e. identity, potency, or other aspects of product integrity); and participant safety.

Applications involving a clinical experiment that are not directly intended to evaluate a screening, diagnostic, preventative or therapeutic intervention, or compare the effectiveness of established interventions, are not suitable for this FOA. Applications that are not complex or of high resource- or safety-risk are not suitable for this FOA. Preclinical, developmental, or preparatory studies for gene transfer and stem cell therapy are not supported under this FOA.

Applicants are strongly encouraged to contact Scientific/Research staff as plans for an application are being developed (see Section VII, Agency Contacts), and no later than 12 weeks prior to the anticipated application submission date.

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

Letter of Intent: Not Required

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

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

Grant Program: BRAIN Initiative: Biology and Biophysics of Neural Stimulation (R01 Clinical Trial Optional)

Agency: National Institutes of Health RFA-NS-18-018

RFP Website: <https://grants.nih.gov/grants/guide/rfa-files/RFA-NS-18-018.html>

Brief Description: This FOA is related to the recommendations in sections III.4 of the BRAIN 2025 report "New and improved perturbation technologies suitable for controlling cells that have been specified by type, wiring, location, and other characteristics (see Section III.2). Perturbation technologies in this context could include tools for stimulation, inhibition, or modulation that mimic natural activity, and could span optical, ultrasonic, chemical, electromagnetic, biochemical, and other modalities for delivery of control signals." Section III.8 highlights the need to validate these technologies as an integral part of accomplishing the goals and deliverables of the BRAIN Initiative. It also acknowledges that in order to "probe the mechanics of the brain more deeply, we must develop a better understanding of the biophysical properties of modulating neurons. In the

same way that the basic electrophysiological properties of single neurons are common across brain areas and species, it is likely that many fundamental forms of neural dynamics will generalize as well." Implicit in this is the need to understand the cellular and local circuit responses to neural stimulation technologies that are used to probe and alter neural dynamics.

The current suite of BRAIN Initiative FOAs range from testing new concepts for large scale recording and modulation, developing and optimizing tools for invasive and non-invasive neuromodulation, including understanding the physiology of non-invasive stimulation at a circuit level, to pre-clinical and clinical studies of next generation recording and modulation technologies. This FOA fills the gap in understanding how these technologies affect the brain at a basic cellular or circuit level. The new recording, mapping, and stimulation tools developed within the BRAIN initiative provide an ample toolset that can now be employed to address this gap and inform the development of next generation tools.

This FOA is designed to improve understanding of the neurobiological underpinnings of existing methods and lay the foundation for the next generation technologies by developing models, systems, and procedures to guide the design of better tools for neuromodulation. Specifically, the goal is to systematically characterize, model, and validate the neurobiological, cellular, and circuit responses of neuronal and non-neuronal cells in the central nervous system (CNS) to neural stimulation.

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 receipt date

Deadline: February 23, 2018, June 6, 2018, October 4, 2018, February 6, 2019, June 4, 2019, October 4, 2019, February 6, 2020, June 4, 2020, and October 6, 2020, by 5:00 PM local time of applicant organization. All [types of non-AIDS applications](#) allowed for this funding opportunity announcement are due on these dates.

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

Grant Program: Sleep disorders and circadian clock disruption in Alzheimer's disease and other dementias of aging (R01 Clinical Trial Not Allowed)

Agency: National Institutes of Health PAR-18-497

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-18-497.html>

Brief Description: Although there are ongoing research efforts to determine the association between sleep disturbances and circadian clock disruptions with Alzheimer's disease, only a few address the molecular and cellular mechanisms of this association.

Therefore, this FOA is aimed at molecular, cellular, genetic, epigenetic, and systems biology approaches to advance basic and clinical research on the causes and consequences of sleep deficiency and circadian clock dysfunction in Alzheimer's disease, and the roles of sleep and the circadian clock as modifiers of the progression of neurodegeneration. A multiple-principal investigator (PI) format will be required with one or more PD/PIs leading mechanistic studies related to neurodegeneration, and one or more PIs leading research in sleep and/or circadian biology.

This FOA solicits molecular and cellular research on animal models across a range of topics intersecting the fields of aging, neurodegeneration, and sleep and/or circadian biology. Although observational studies are allowed, mechanistic and intervention studies are strongly encouraged. Areas of research appropriate to this FOA include, but are not limited to, the following:

1. Explore molecular mechanisms linking disordered sleep and circadian disruptions with cognitive decline and AD.
2. Determine processes interrupted by disordered sleep and circadian disruptions that lead to AD-related pathologies such as accumulation of protein aggregates, synaptic loss or dendritic pruning.
3. Test whether, and through what, molecular and cellular processes acute or chronic disruption of sleep and/or circadian rhythms modulate accumulation and/or spreading of protein aggregates such as A β or tau.
4. Assess how various patterns of neuronal activity and sleep architecture modulate accumulation and/or spreading of protein aggregates.
5. Explore how lack of sleep and circadian clock disruption contribute to severity of neurodegenerative diseases.
6. Assess a bidirectional interaction between sleep and/or the circadian clock with neurodegenerative processes in AD.
7. Determine whether the improvement of sleep and/or circadian rhythms alter the course of neurodegenerative conditions and represent a modifiable risk factor that can alter disease progression.
8. Identify the genetic variants that promote variations of sleep and circadian rhythms that may contribute to the risk of AD.

Awards: Application budgets are limited to \$500,000 in direct costs per year.

Letter of Intent: February 23, 2018

Deadline: The first application due date is March 26, 2018, by 5:00 PM local time of the applicant organization.

Subsequent due dates for new applications are June 6, 2018; October 7, 2018; February 7, 2019; June 7, 2019; October 7, 2019; February 7, 2020; June 8, 2020; and October 8, 2020, by 5:00 PM local time of the applicant organization.

Due dates for revision and resubmission applications are July 7, 2018; November 7, 2018; March 7, 2019; July 8, 2019; November 7, 2019; March 6, 2020; July 7, 2020; and November 6, 2020, by 5:00 PM local time of applicant organization. All [types of non-AIDS applications](#) allowed for this funding opportunity announcement are due on these dates.

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

Grant Program: NIBIB Exploratory/Developmental Research Grant Program (R21 Clinical Trial Optional)

Agency: National Institutes of Health PAR-18-433

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-18-433.html>

Brief Description: Exploratory/Developmental Research Grant applications should be exploratory and novel, distinct from those supported through the traditional R01 activity code. For example, long-term projects, or projects designed to increase knowledge in a well-established area, are not appropriate for this FOA. Studies submitted to this FOA should break new ground or take previous discoveries in new directions.

Applications for R21 awards should propose projects distinct from those supported through the traditional R01 mechanism, which are generally longer-term systematic investigations supported by extensive preliminary data. R21 applications should have well-defined goals with the potential for future development. It is expected that successful projects would go on to further development under other funding mechanisms, such as the R01. Not all research endeavors will

be suitable for this FOA. Projects from Investigators that are supported by preliminary data should be submitted to the Parent R01 FOA (<https://grants.nih.gov/grants/guide/pa-files/PA-16-160.html>) or the Bioengineering Research Grant FOA (<https://grants.nih.gov/grants/guide/pa-files/PA-16-242.html>).

Projects of limited cost or scope that use widely accepted approaches and methods within well-established fields or are supported by preliminary data may be submitted to the Parent R03 FOA (<https://grants.nih.gov/grants/guide/pa-files/PA-16-162.html>). Projects of any scope that are supported by preliminary data may be submitted to the Parent R01 (<https://grants.nih.gov/grants/guide/pa-files/PA-16-160.html>) FOA. Projects that propose incremental improvements in well-established areas of investigation are not appropriate for this FOA.

New and Early Stage Investigators should consider submitting to the NIBIB Trailblazer Award (<https://grants.nih.gov/grants/guide/pa-files/PA-16-390.html>), which supports an enhanced, three-year R21 grant.

Awards: Application budgets may not exceed \$275,000 direct costs over a maximum two-year funding period. No more than \$200,000 in direct costs may be requested in any single year.

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.

The first standard application due date for this FOA is February 5, 2018.

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

Grant Program: Synthetic Biology for Engineering Applications (R01 Clinical Trial Optional)

Agency: National Institutes of Health PAR-18-434

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PA-18-434.html>

Brief Description: One of the great challenges in biomedical research is to be able to quantitatively predict, test, and harness the complex dynamics of biological systems. Synthetic biology is the design and construction of new biological parts and systems, and the re-design of existing and natural biological systems for specific purposes. In contrast to the traditional genetic engineering approach, which usually focuses on individual genes and proteins, synthetic biology adopts a more systematic approach targeting entire pathways, networks, and whole organisms with quantitative control and modulation. Synthetic biology is arguably the cornerstone of the next generation of reengineered cells. Gaining new insights into the complex and dynamic biological pathways of these designer cells and developing cell-based diagnostics and therapies are at the frontiers of biomedical science. Enabling these de novo biological systems will require the ability to design and build complex pathways with endogenous or novel functions and with predictable and quantitative responses to endogenous or environmental signals. Achieving this paradigm will allow the testing of hypotheses on complex biological systems and the development of novel therapeutic strategies and diagnostic capabilities. To improve the reach and impact of this paradigm on human health, an integrative research plan based on collaborations of synthetic biologists with computational scientists, cell biologists, engineers, and/or physician scientists is strongly recommended.

Specific Areas of Research Interest

Synthetic biology for human health is advancing, but major challenges, such as the inability to engineer robust complex metabolic and signaling networks or to produce cells with reliable and

predictable behavior once in the host, currently limit application. This FOA encourages the development of tools and technology to tackle challenges in biomedical research and in cell-based therapies and diagnostics. Specific topics of interest include, but are not limited to, those listed below.

- Cell-free and cell-based systems for testing and analyzing biological systems and for the efficient and scalable synthesis of complex biological products
- Cell-free (prototyping genetic circuits, discovering and evolving enzymes, and conducting biomolecular reactions)
- Cell-based (materials and pharmaceutical production, microbiome reprogramming, diagnostics)
- Natural and engineered biological circuits for implementing regulation and decision-making strategies in cells (modeling, analysis, design, and use of biological circuits, cell-cell communication, gene regulation, computation strategies)
- Expanding biochemical functionality (novel genetic alphabets, changing molecular machinery of the cell, constructing genomically recoded organisms, genetically encoded reporters)
- Advanced genome editing techniques for manipulating DNA (computational algorithms, zinc finger nucleases, TAL effector nucleases, CRISPR-Cas9)
- Design and evolution strategies to construct biological systems (directed evolution, continuous evolution, multiplexed evolution)

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

Letter of Intent: Not Required

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

The first standard application due date for this FOA is February 5, 2018.

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

Department of Defense/US Army/DARPA/ONR

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

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

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

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

(hereinafter referred to as contracts), grants, cooperative agreements, and other transactions. Proposed research should investigate unique and innovative approaches for defining and developing next generation integratable C4ISR capabilities and command suites.

Awards: Various

Proposal Deadline: May 14, 2018

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

Grant Program: Secretary of the Air Force (SecAF) 2030 Science and Technology (S&T) Study

Agency: Department of Defense FA8652-18-S-0001

Website: <file:///Users/atamdhawan/Downloads/FA8652-18-S-0001.pdf>

Brief Description: Secretary of the Air Force Heather Wilson announced in September 2017 inception of the "S&T Strategy 2030" study. The study's objective is to update the Air Force methods for conducting research and development (R&D) to meet the projected national security challenges of 2030. Secretary Wilson appointed the Air Force Research Laboratory (AFRL) to lead this strategy development. The Air Force's goals for the study are: 1. Evaluate technical approaches and focus areas to advance the Air Force's mission through R&D; and 2. Improve Air Force processes and organizational structures to manage early stage research.

Awards: Award Ceiling: \$250,000

Proposal Deadline: February 20, 2018

Contact Information: Kris Croake Grants Officer Phone (937) 255-2230

Grant Program: Defense Enterprise Science Initiative (DESI)

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

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

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

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

Proposal Deadline: February 28, 2018

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

Grant Program: FY18 Funding Opportunity Announcement (FOA) for the Office of Naval Research (ONR) Navy and Marine Corps Science, Technology, Engineering & Mathematics (STEM), Education and Workforce Program

Agency: Department of the Navy ONR - N00014-18-S-F003

Website: <file:///Users/atamdhawan/Downloads/N00014-18-S-F003.pdf>

Brief Description: The ONR seeks a broad range of applications for augmenting existing or developing innovative solutions that directly maintain, or cultivate a diverse, world-class STEM workforce in order to maintain the U.S. Navy and Marine Corps' technological superiority. The goal of any proposed effort must provide solutions that will establish and maintain pathways of diverse U.S. citizens who are interested in uniformed or civilian DoN (or Navy and Marine Corps) STEM workforce opportunities.

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

- Secondary education communities;
- Post-Secondary communities;
- Informal science communities;
- Current naval STEM workforce communities.

Project scope may range in size and complexity. Projects that are already established with prior funding sources or have established stakeholders are especially encouraged to consider the following scope areas:

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

Awards: Under this STEM FOA competition, ONR intends to award approximately twenty-five (25) awards for an estimated total value of \$6,250,000, subject to the availability of funds. Each individual award will be up to a maximum of \$250,000 per year, with one-year (1) option periods, for up to three (3) years. Option years will be funded incrementally based on applicant performance and adherence to established execution benchmarks. Applications for larger amounts will be considered on a case-by-case basis.

Proposal Deadline: White Paper Inquiries and Questions 20 July 2018 (Friday) White Papers must be received between 2 April 2018 (Monday) with a deadline of 31 July 2018 (Tuesday) at 5:00 PM Eastern Time Application Inquiries and Questions 18 September 2018 (Tuesday) Applications must be received no later than 28 September 2018 (Friday) at 11:59 PM Eastern Time

Contact Information: Questions about technical nature and/or funding should be submitted to: Dr. Michael Simpson Director of Education and Workforce Office of Naval Research 875 North Randolph Street Arlington VA 22203-1995 Email: onr_stem@navy.mil

Grant Program: Research Interests of the Air Force Office of Scientific Research

Agency: Department of Defense AFOSR – BAA-AFRL-AFOSR-2016-0007

Website:

https://www.fbo.gov/index?s=opportunity&mode=form&id=d8bfeaf2e38a1e4aeb9908190fc2e0f2&tab=core&_cvview=1

Brief Description: AFOSR plans, coordinates, and executes the Air Force Research Laboratory's (AFRL) basic research program in response to technical guidance from AFRL and requirements of the Air Force. Additionally, the office fosters, supports, and conducts research within Air Force, university, and industry laboratories; and ensures transition of research results to support U.S. Air Force needs. The focus of AFOSR is on research areas that offer significant and comprehensive benefits to our national war fighting and peacekeeping capabilities. These areas are organized and managed in two scientific Departments: Engineering and Information Science (RTA) and Physical and Biological Sciences (RTB).

The Air Force Office of Scientific Research, hereafter generally referred to as "we, us, our, or AFOSR," manages the basic research investment for the U.S. Air Force. As a part of the Air Force Research Laboratory (AFRL), our technical experts discover, shape, and champion research within the Air Force Research Laboratory, universities, and industry laboratories to ensure the transition of research results to support U.S. Air Force needs. Using a carefully balanced research portfolio, our research managers seek to foster revolutionary scientific breakthroughs enabling the Air Force and U.S. industry to produce world-class, militarily significant, and commercially valuable products.

To accomplish this task, we solicit proposals for basic research through this general Broad Agency Announcement outlining the U.S. Air Force Defense Research Sciences Program. We invite unclassified proposals that do not contain proprietary information for research in many broad areas. We expect to fund only fundamental research. Our research areas of interest are described in detail in section A. Program Description.

We anticipate many awards in the form of grants, cooperative agreements, or contracts. We reserve the right to select and fund for award all, some, part, or none of the proposals received. There is no guarantee of an award. Please review the entire announcement for full details.

Awards: Funding available: \$80,000,000

Proposal Deadline: This announcement remains open until superseded. We review and evaluate proposals as they are received. You may submit proposals at any time; however, some specific topic instructions may recommend submission by specific dates that align with funding expectations. Funding is limited. We commit the bulk of our funding by the fall of each year.

Contact Information: Daniel Smith Procurement Analyst Phone 703-588-8494
[Business Office Email](#)

Grant Program: DoD Medical Simulation and Information Sciences, Toward A Next-Generation Trauma Care Capability: Foundational Research for Autonomous, Unmanned, and Robotics Development of Medical Technologies (FORwARD) Award

Agency: Department of Defense Dept. of the Army – USAMRAA W81XWH-17-MSISRP-FOR

Website: <http://cdmrp.army.mil/>

Brief Description: The MSISRP FORwARD Award mechanism is being offered for the first time in FY17. This mechanism supports basic research to increase knowledge/understanding through discovery and hypothesis generation, and should focus on providing basic fundamental knowledge that will inform and enable the future development of novel autonomous and/or robotic medical systems to care for wounded soldiers/patients through breakthrough, exploratory research. The objective of the FY17 MSISRP FORwARD Award is focused on addressing the following Topic Areas: 1. Autonomous and Unmanned Medical Capability – Identify novel ideas, approaches and research towards the conceptualization of autonomous and unmanned technologies for next-generation, high-quality medical capabilities with limited or

absent medical care personnel, or personnel with limited skills. Research novel concepts, plausible approaches and advanced concept designs using biologically inspired cognitive computing models, machine learning, artificial intelligence, soft robotic semi-autonomous/autonomous resuscitation concepts and advanced applications of information sciences among other innovative, exploratory research towards advancing the state-of-the-art in delivery of forward resuscitative care at the point of injury. 2. Medical Robotics Research – Identify novel ideas, approaches and research towards the conceptualization of medical robotics and real-time tele-presence capabilities exploring the limits of machine perception for tele-robotic semi-autonomous and autonomous trauma care within remote and dispersed geographic settings. This could include exploratory research in semi-autonomous robotic surgery to improve the safety profile and efficacy of tele-surgical procedures and outcomes using hard robotics in challenging situations (e.g., combat casualties on the multi-domain battlefield or mass casualty situations) and remote or austere geographic locations, among other innovative, exploratory research aims and novel concepts.

Awards: Funding available: \$2,600,000

Proposal Deadline: February 05, 2018

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

Department of Energy

Grant Program: Bioimaging Research and Approaches for Bioenergy

Agency: Department of Defense DE-FOA-0001868

Website: https://science.energy.gov/~media/grants/pdf/foas/2018/SC_FOA_0001868.pdf

Brief Description: The Biological and Environmental Research (BER) of the SC, U.S. Department of Energy (DOE) hereby announces its interest in receiving applications to support fundamental research towards enabling new bioimaging capabilities for the study of plant and microbial systems relevant to bioenergy research. New imaging instrumentation is needed to observe and characterize multiple metabolic processes occurring within the living plant and microbial systems relevant to bioenergy and bioproduct production from renewable biomass. These processes include, but are not limited to real-time dynamic imaging of metabolic pathways, the transport of materials within and among cellular organelles including plant-root and organismal interactions, enzyme function and cellular structures. Of interest is the development of multimodal imaging devices constructed by merging new, innovative and/or transformational improvements to existing capabilities which will enable simultaneous observations in synergistic combination with correlated structural and/or chemical imaging to interpret biological function in and among whole microbial or plant cells. This FOA is envisioned as a multidisciplinary research endeavor involving expertise from different disciplines of physical sciences and biology. This will require a multidisciplinary team effort from imaging and physical scientists, plant biologists, microbiologists, and engineers in conceptualizing interdisciplinary approaches and leveraging tools and resources (including those available at the DOE National Laboratories and national scientific user facilities) to advance the development of novel bioimaging capabilities from proof of principle to common research practice.

Awards: It is anticipated that up to \$5 million will be available for multiple awards to be made in Fiscal Year 2018, with an additional \$5 million available per year, up to three years, contingent on the availability of appropriated funds.

Proposal Deadline:

Pre-Application Due Date: 01/19/2018 at 5 PM Eastern Time

(A Pre-Application is required)

Encourage/Discourage Date: 02/02/2018 at 5 PM Eastern Time

Application Due Date: 03/16/2018 at 11:59 PM Eastern Time

Contact Information:

Program Manager: Dr. Prem C. Srivastava U. S. Department of Energy Biological and Environmental Research Phone: 301-903-4071 E-Mail: prem.srivastava@science.doe.gov

Grant Program: OPEN 2018

Agency: Department of Energy DE-FOA-0001858

Website: <https://arpa-e-foa.energy.gov/#Foalded06b7da-00fc-49eb-9ac0-22e052e62640>

Brief Description: This FOA marks the fourth OPEN solicitation in the history of ARPA-E. The previous OPEN solicitations were conducted at the inception of the agency in 2009 and again in 2012 and 2015. OPEN 2018 therefore continues the three-year periodic cycle for ARPA-E OPEN solicitations. An OPEN solicitation provides a vitally important mechanism for the support of innovative energy R&D that complements the other primary mechanism, which is through the solicitation of research projects in focused technology programs. ARPA-E's focused programs target specific areas of technology that the agency has identified, through extensive interaction with the appropriate external stakeholders, as having significant potential impact on one or more of the Mission Areas described in Section I.A of the FOA. Awards made in response to the solicitation for focused programs support the aggressive technical targets established in that solicitation. Taken in total, ARPA-E's focused technology programs cover a significant portion of the spectrum of energy technologies and applications.

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

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

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

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

Contact Information:

- ExchangeHelp@hq.doe.gov

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

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

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

NASA

Grant Program: ROSES 2017: Advancing Collaborative Connections for Earth System Science

Agency: NASA NNH17ZDA001N-ACCESS

Website:

<https://nspires.nasaprs.com/external/solicitations/summary.do?solId=%7B7782DF97-B7AE-BDEC-A677-E96F281D39A3%7D&path=open&method=init>

Brief Description: The Earth Science Data System (ESDS) Program is soliciting proposals for Advancing Collaborative Connections for Earth System Science (ACCESS). The primary goal of ACCESS is to develop and implement technologies to effectively manage, discover and use NASA's archive of Earth observations for scientific research and applications. This program complements NASA's Earth Observing System Data and Information System (EOSDIS) by engaging researchers and software developers external to EOSDIS in NASA's mission to "drive advances in science, technology, aeronautics, space exploration, economic vitality, and stewardship of the Earth" and furthers Strategic Goal 2.2 to "advance knowledge of Earth as a system to meet the challenges of environmental change and to improve life on our planet" (<http://science.nasa.gov/aboutus/science-strategy/>). ACCESS aims to improve and expand the use of NASA's Earth science data by leveraging modern techniques for discovering, managing and analyzing large and complex Earth science data sets. Over the past 20 years NASA's EOSDIS has significantly evolved capabilities to process, archive and distribute data from satellites, airborne missions and field campaigns. Since inception, data from EOSDIS have been fully and openly available to anyone. In 2016, over 3 million users downloaded science data from the EOSDIS Distributed Active Archive Centers (DAACs). Today EOSDIS archives contain over 24 petabytes (PBs) of Earth observations. Within 5 years, as new missions are launched and instruments commissioned, the archive is projected to be over 150 PB with an annual growth rate of nearly 50 PB per year. This long-term, continuously updated global environmental record presents unique opportunities for science and significant challenges for data management and access. For more on EOSDIS and its components, please see <https://earthdata.nasa.gov/about>. The focus of this solicitation is to help EOSDIS address data management, discoverability, and utilization challenges faced by users and curators of NASA's Earth science data. Although focused on information technology development and deployment, the ACCESS program is targeted at addressing existing and anticipated future needs of the research and applied science communities. Proposal teams must include both information technology and Earth science expertise, and must be tied directly to specific issues facing Earth science and applied science users interacting with EOSDIS.

Awards: \$4.5M

Notice of Intent: December 7, 2017

Proposal Deadline: January 31, 2018

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

National Endowment of Humanities

Grant Program: Digital Humanities Advancement Grants

Agency: National Endowment of Humanities

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

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

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

Awards: Level I awards (from \$10,000 to \$50,000) are small grants designed to fund exploratory sessions, workshops, early alpha-level prototypes, and initial planning. In addition to early planning towards an experimental prototype, Level I proposals can identify a problem or research question, explore a research agenda, or discover appropriate methodologies or technologies for both new projects and projects in need of substantive revision or recovery. Outcomes for Level I projects would likely include reports, position papers, and plans for subsequent steps and future research or development. Level I projects may also fund meetings, workshops, or reports addressing specific topics related to the impact of technology on the humanities. Proposals should include specific plans for broad dissemination of project outcomes.

Level II awards (from \$50,001 to \$100,000) are larger grants that can be used for more fullyformed projects that have completed an initial planning phase. Level II proposals should therefore include a more articulated plan of work leading to concrete and tangible outcomes, such as working prototypes; detailed plans for upgrading existing or defunct projects in need of substantive revision, enhancement, or recovery; test beds; or demonstration projects. Digital Humanities Advancement Grants at both Level I and Level II stages support full-time or part-time activities for periods up to eighteen months.

Level III awards (from \$100,001 to \$325,000 for up to three years) support implementation and scaling-up of already established projects. All projects must already have completed a startup phase prior to application. The earlier phase of the project could have been supported previously by NEH or by another funding source. (Please see the instructions for the narrative component of the application below, in particular beneath the “History of the project” bullet.) Level III projects must submit both data management and sustainability plans, and all projects are expected to fulfill the obligations outlined in these plans.

Proposal Deadline:

Until January 16, 2018: Contact Office of Digital Humanities program officers (at odh@neh.gov) with questions and for advice (optional)

December 5, 2017: Submit draft application by this date (optional)

December 19, 2017: Create or verify your institution’s Entity record at the System for Award Management by this date

January 2, 2018: Register your institution (or verify its registration) with Grants.gov by this date

January 16, 2018: Submit application through Grants.gov by this date

April-May 2018: peer review panels take place
July 2018: meeting of the National Council on the Humanities, followed by funding decisions
August 2018: applicants are notified of the funding decisions
September 2018: institutional grants administrators and project directors of successful applications receive award documents by e-mail
Contact: Contact the Office of Digital Humanities (ODH) via e-mail at odh@neh.gov. Applicants wishing to speak to a staff member by telephone should provide in an e-mail message a telephone number and a preferred time to call. Applicants who are deaf or hard of hearing can contact NEH via Federal Relay (TTY users) at 800-877-8399.

Klingenstein-Simons Neuroscience Fellowships

Grant Program: The Klingenstein-Simons Fellowship Awards in the Neurosciences

Agency: Klingenstein-Simons Neuroscience Fellowships

Website: <http://www.klingfund.org/description.php>

Brief Description: The Klingenstein-Simons Fellowship Awards in the Neurosciences supports, in the early stages of their careers, young investigators engaged in basic or clinical research that may lead to a better understanding of neurological and psychiatric disorders. The Klingenstein Fund and the Simons Foundation recognize that to accomplish this goal it is necessary to encourage a variety of new approaches. Several areas within the neurosciences are of particular interest:

Cellular and molecular neuroscience—Studies of the mechanisms of neuronal excitability and development, and of the genetic basis of behavior.

Neural systems—Studies of the integrative function of the nervous system.

Translational research—Studies designed to improve the prevention, diagnosis, treatment and our understanding of the causes of neurological and psychiatric disorders.

The candidate must and be within 4 years of completing postdoctoral training and the start of his/her tenure track appointment (between July 1, 2014 and July 1, 2018).

Proposal Deadline: February 15, 2018

Contact: Eric Blitz, Associate Director for Development, Corporate and Foundation Relations at eric.blitz@njit.edu

JDRF and the Helmsley Charitable Trust

Grant Program: Diabetes Innovation Challenge

Agency: JDRF and the Helmsley Charitable Trust

Website: <https://diabetes.innovationchallenge.com/skild2/diabetes/loginPage.action>

Brief Description: The [Diabetes Innovation Challenge](#) is seeking:

- **Automated Insulin Devices** and related components including glucose sensing, insulin delivery systems, and cellular therapy delivery technologies
- **Diagnostics** such as tests for research and screening; early diagnosis and prevention; autoantibodies, C- peptide, or other markers such as beta cell death and risk of diabetic complications
- **Therapeutics** like smart insulins, glucagons, immune-modulating therapies, beta cell regeneration, and treatments for diabetic complications

- **Technology Design/Disease Management.** For example, new approaches to using information and communication technologies to support diabetes management

Awards: The Diabetes Innovation Challenge will award \$250,000 in cash and in-kind prizes for the winning innovations.

Proposal Deadline: January 31, 2018

Contact: Eric Blitz, Associate Director for Development, Corporate and Foundation Relations at eric.blitz@njit.edu

Streamlyne Update

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

- Download the package with all forms – there are still some exceptions to this as the federal government continues to change some of the standard forms.
- Validation error prior to submission – this allows to review the package for errors
- Work Flow approval transparent to all users
- Budget forms customized to NSF and/or S2S
- Sub-award budgets easily download – this will allow better management of the award

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

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

Also, the following links may be helpful:

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

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

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