

NJIT Research Newsletter

Issue: ORN-2016-046

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/>. **This Newsletter features a new section on “Recent Patents”.**

Office of Research Announcement

The Office of Research has been reorganized to provide streamlined research related infrastructure support and functions over the complete spectrum of services from grant opportunities alerts and proposal submission to grant management and closing.

We are pleased to announce the appointment of Dr. Eric Hetherington as the Director, Sponsored Research Programs Administration in the Office of Research. Dr. Hetherington will be overseeing all aspects of the Sponsored Research Administration (SRA) and Grant and Contract Accounting (GCA) functions and services.

A complete listing of Office of Research staff is posted on the NJIT Research website with the Contact Us tab (<http://www5.njit.edu/research/contact/>). As we have new staff members, a listing of assignments of staff members for specific research support functions and services for departments, centers and colleges is also posted on the website under the Contact Us tab: <http://www5.njit.edu/research/research-staff-assignments/>.

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NJIT Office of Research Event Calendar Save the Date

Event: NJEdge.Net Research and Education Network: Spark, Hadoop and Friends

When: January 4, 2017, 8:45 am - 4:30 pm

Where: NJIT Guttenberg Information Technology Center, Room 3710

Brief Description: The workshop will cover the essential introductory aspects of Apache Spark within the Hadoop 2 ecosystem. Spark is a high level language for big data programming that offers high performance (due to in-memory computation) and simplicity (supports Python, R, Scala, or Java front ends). After completing the workshop attendees will gain an understanding Spark's value proposition and acquire hands-on experience with basic Spark operation (primarily

PySpark) and the Zeppelin graphical web interface for Spark. To assist with continued learning, additional background and resources are provided. Roughly thirty percent of the workshop time is devoted to hands-on exercises that include machine learning and data cleaning techniques.

Intended Audience: This workshop is an introduction to Spark programming. Those from the physical and biological sciences will learn how to use Spark's high-level capabilities for their projects. Devops and programmers that are new to Hadoop or big data will learn how to write Spark programs. Finally, those involved in data science or statistics will learn about how Spark can be used as an analytics tool.

Prerequisites: Although most of the work will be using the Zeppelin GUI, familiarity with Linux command line, bash shell, simple text editing, and Python. If you wish to participate in the exercises, please bring your own laptop that is Wifi capable, has an up-to-date web browser and provides an ssh client (For Windows users, we highly recommend MobaXterm, <http://mobaxterm.mobatek.net>).

About the Presenter:

Douglas Eadline, PhD, began his career as a practitioner and a chronicler of the Linux cluster HPC revolution and now documents big data analytics. Starting with the first Beowulf Cluster how-to document, Doug has written hundreds of articles, white papers, and instructional documents covering virtually all aspects of High Performance Computing (HPC) computing. Prior to starting and editing the popular ClusterMonkey.net website in 2005, he served as editor-in-chief for ClusterWorld Magazine, and was senior HPC editor for Linux Magazine. Currently, he is a writer and consultant to the HPC/Data Analytics industry and leader of the Limulus Personal Cluster Project (<http://limulus.basement-supercomputing.com>). He is author of *Hadoop Fundamentals LiveLessons* and *Apache Hadoop YARN Fundamentals LiveLessons* videos from Pearson and book coauthor of *Apache Hadoop YARN: Moving beyond MapReduce and Batch Processing with Apache Hadoop 2* and *Practical Data Science with Hadoop and Spark: Designing and Building Effective Analytics at Scale* and sole author of *Hadoop 2 Quick Start Guide: Learn the Essentials of Big Data Computing in the Apache Hadoop 2 Ecosystem*. Note: A copy of the book *Practical Data Science with Hadoop and Spark: Designing and Building Effective Analytics at Scale* will be given to each participant. Registration Fee: \$70

Registration Website: <https://www.cvent.com/events/spark-hadoop-and-friends/registration-e1d8f2c8031444bc88da307dc33ef74b.aspx?i=31ffb8ea-3c28-41cd-9c44-52b77139872d>

Event: Second Annual Symposium on Research and Teaching Using IST ARCS-Managed High Performance Computing (HPC), Big Data (BD), and Database Resources

When: January 11, 2017; 10.00 AM – 12.00 PM; 1.00 PM – 3.00 PM

Where: NJIT GITC 3710

Brief Description: The purpose of this symposium is for researchers to present examples of their research performed using resources managed by IST ARCS, so that experiences can be shared, and technical information exchanged. Proposals for presentations are invited from any field of research or teaching, limited to projects using ARCS-managed resources.

Submit Abstracts: Please send abstracts of such proposals, not to exceed 500 words, as a PDF attachment, to arcs@njit.edu, with subject: "**Proposal - 2017 Symposium on Research and Teaching Using ARCS-managed Resources**", by **23 December 2016**. Presentations should last about 20 minutes, with 5 additional minutes for questions. Presentations may be made by faculty, staff, or students. Attendees should bring their laptops, since web access may be useful. Presenters and their research students are encouraged to attend all presentations, as they may gain insights from interaction with the other presenters and attendees.

Grant Opportunity Alerts

Keywords and Areas Included in the Grant Opportunity Alert Section Below

NSF: Innovation Corps (I-Corps TM) - National Innovation Network Nodes Program (I-Corps Nodes); Building Community and Capacity in Data Intensive Research in Education (BCC-EHR); Energy-Efficient Computing: from Devices to Architectures (E2CDA); Innovations at the Nexus of Food, Energy and Water Systems (INFEWS)

NIH: NIBIB Biomedical Technology Resource Centers (P41); Shared Instrumentation Grant (S10); High-End Shared Instrumentation Grant (S10); Exploratory Research for Technology Development (R21)

Department of Defense/US Army/DARPA/ONR: A MEchanical Based Antenna (AMEBA)

Department of Energy: Macroalgae Research Inspiring Novel Energy Resources (MARINER); "Productivity Enhanced Algae and Tool-Kits (PEAK)"; Fiscal Year 2017 Vehicle Technologies Program Wide Funding Opportunity Announcement

NASA: ROSES 2016: Advanced Information Systems Technology

National Endowment of Humanities: Summer Seminars and Institutes; Public Humanities Projects

Vodafone America Foundation: Wireless Innovation Project

Recent Research Grant and Contract Awards

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

PI: Namas Chandra (PI) and Bryan Pfister (Co-PI)

Department: Center for Brain Injury Biomechanics, Materials and Medicine

Grant/Contract Project Title: Primary Blast Injury Criteria for Animal/Human TBI Models using Field Validated Shock Tubes

Funding Agency: US Army Medical Research

Duration: 08/15/15-08/14/19

PI: Zoi-Heleni Michalopoulou (PI)

Department: Mathematical Sciences

Grant/Contract Project Title: Shallow water inversion with optimization and direct methods

Funding Agency: ONR

Duration: 04/01/16-09/30/19

PI: Michel Boufadel (PI)

Department: Center for Natural Resources Development and Protection

Grant/Contract Project Title: The Consortium for Advanced Research on Transport of Hydrocarbon in the Environment (CARTHE)

Funding Agency: Gulf of Mexico Research Initiative

Duration: 07/22/15-06/30/17

PI: Dale Gary (PI)

Department: Center for Solar Terrestrial Research

Grant/Contract Project Title: NRAO Student Observing Award

Funding Agency: NSF

Duration: 11/01/16-09/30/18

PI: Michael Ehrlich (PI)
Department: School of Management
Grant/Contract Project Title: I-Corps: Glycosaminoglycan mimics for wound healing
Funding Agency: NSF
Duration: 01/01/17-06/30/17

In the News...

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

NSF Announces New Proposal & Awards Policies & Procedures Guide (PAPPG): The new NSF PAPPG provides the policies and procedures for all proposals to be submitted on or after January 30, 2017. The *Proposal & Award Policies & Procedures Guide* (PAPPG) is comprised of documents relating to the Foundation's proposal and award process for the assistance programs of NSF. The PAPPG, in conjunction with NSF's Grant General Conditions, serves as the Foundation's implementation of 2 CFR § 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards*. If the PAPPG and NSF Grant Conditions are silent on a specific area covered by 2 CFR § 200, the requirements specified in 2 CFR § 200 must be followed.

It has been designed for use by both our customer community and NSF staff and consists of two parts:

- Part I sets forth NSF's proposal preparation and submission guidelines. The coverage provides guidance for the preparation and submission of proposals to NSF. Some NSF programs have program solicitations that modify the general provisions of the PAPPG, and, in such cases, the guidelines provided in the solicitation must be followed.

The policy and procedural guidance contained in the *NSF Grants.gov Application Guide* should be followed when preparing and submitting proposals to NSF via Grants.gov.

- Part II of the NSF PAPPG sets forth NSF policies and procedures regarding the award, administration, and monitoring of grants and cooperative agreements. Coverage includes the NSF award process, from issuance and administration of an NSF award through closeout. Guidance is provided regarding other grant requirements or considerations that either are not universally applicable or do not follow the award cycle. Part II also implements other Public Laws, Executive Orders (E.O.) and other directives insofar as they apply to grants, and is issued pursuant to the authority of Section 11(a) of the NSF Act (42 USC § 1870). When NSF Grant General Conditions or an award notice reference a particular section of the PAPPG, then that section becomes part of the award requirements through incorporation by reference.

The PAPPG does not apply to NSF contracts. For information relating to NSF contracts, consult the [Guide to the NSF Contracting Process](#).

General information about NSF programs may be found on the NSF website at: http://www.nsf.gov/funding/browse_all_funding.jsp. Additional information about special requirements of individual NSF programs may be obtained from the appropriate Foundation program office. Information about most program deadlines and target dates for proposals are available on the NSF website at: http://www.nsf.gov/funding/pgm_list.jsp?org=NSF&ord=date. Program deadline and target date information also appears in individual program announcements and solicitations and on relevant NSF Divisional/Office websites.

Significant Changes to the PAPPG Part I:

- **Chapter I.D.1, Letters of Intent (LOI)**, includes additional language regarding the submission of a LOI for collaborative proposals. Proposers that plan to submit a collaborative proposal from multiple organizations should submit a single LOI for the entire project, given that NSF considers a collaborative proposal to be a unified research project.
- **Chapter II.B, Format of the Proposal**, has been updated to include two new types of proposals, RAISE and GOALI. These two types of proposals are described in greater detail in Chapter II.E. An additional resource has also been added to this section with information on NSF auto-compliance checks that are conducted during the proposal preparation and submission process.
- **Chapter II.C.1.e, Collaborators & Other Affiliations Information**, includes additional instructions for proposers. Each section of the Collaborators & Other Affiliations Information should be listed alphabetically by last name. The text has also been revised to remove the requirement that proposers list postgraduate scholar sponsors in this section of the proposal. Postgraduate scholar sponsor is not a disqualifying relationship for a reviewer, therefore, it was determined that this information is not necessary.
- **Chapter II.C.2, Sections of the Proposal**, has been revised to inform proposers that proposal preparation for RAPID, EAGER, RAISE, GOALI, Ideas Lab, FASED, Conference, Equipment, Travel, Center, Research Infrastructure and Fellowship projects may deviate from the content requirements of a full research proposal.
- **Chapter II.C.2.a, Cover Sheet**, has been updated to provide instructions that more closely follow the proposal preparation screens in FastLane.
- **Chapter II.C.2.d(iii), Results from Prior NSF Support**, includes revised language to clarify NSF's purpose for collecting this information in the Project Description. The purpose of the Results from Prior NSF Support section is to assist reviewers in assessing the quality of prior work conducted with current or prior NSF support. Additional instructions have also been added regarding the type of information that should be included for projects that have been recently awarded, where no new results exist.
- **Chapter II.C.2.g(vi), Other Direct Costs**, has been updated to include information on incentive payments, for example, payments to human subjects or incentives to promote completion of a survey. These costs should be included on line G6 of the NSF Budget and should be proposed in accordance with organizational policies and procedures. Indirect costs should be calculated on incentive payments in accordance with the organization's approved US Federally negotiated indirect cost rate(s).
- **Chapter II.C.2.g(x), Fees (Line K on the Proposal Budget)**, has been added to provide instructions for use of the Fee line on the NSF budget, which is available for use only by the SBIR/STTR programs.
- **Chapter II.C.2.j, Special Information and Supplementary Documentation**, has been updated to include language that informs submitters of the type of information that may be requested by NSF in order to comply with Federal environmental statutes, including, but not limited to, the National Environmental Policy Act, the National Historic Preservation Act. And the Endangered Species Act.
- **Chapter II.D, Special Processing Instructions**, has been revised to address areas where special proposal processing may be required. Information on RAPID, EAGER, Ideas Lab, FASED, Equipment, Conference, and Travel Proposals has been moved to Chapter II.E.
- **Chapter II.D.5, Proposals Involving Human Subjects**, has been updated to reflect the Foundation's implementation of 45 CFR 690.118, applications and proposals lacking definite plans for involvement of human subjects. A hypertext link is provided to an NSF-approved format that may be used to submit such determinations by proposing institutions.

Clarification has also been added regarding the IRB documentation that NSF must have in order to make an award when proposals involve human subjects.

- **Chapter II.E, Types of Proposals**, has been added to describe, in one place, the various other types of proposals that can be submitted to NSF, including the two new types, RAISE and GOALI. This section includes proposal preparation instructions for each of the types of proposal that may supplement or deviate from the guidance provided elsewhere in Chapter II.
- **Chapter II.E.9, Travel Proposal**, has been updated from "International Travel Proposals" to "Travel Proposal" to reflect that this type of proposal can be used for both domestic and international travel requests. Additional proposal preparation instructions have also been added to inform proposers of the required proposal elements, including the requirement that the Project Description contain Results from Prior NSF Support.

DOE Announces Nearly \$20 Million to Accelerate Energy Efficient Transportation and Systems: the Energy Department announced \$19.7 million, subject to appropriations, to support research and development of advanced vehicle technologies, including batteries, lightweight materials, and advanced combustion engines, as well as innovative technologies for energy efficient mobility. Investments in advanced, energy efficient transportation technologies and systems will improve our nation's energy security, support energy independence, reduce transportation emissions, and strengthen U.S. economic competitiveness.

The funding opportunity seeks projects in four areas of interest that apply to light, medium, and heavy-duty on-road vehicles, energy efficient mobility, and transportation infrastructure systems.

- **Battery500 Seedling Projects:** this topic seeks proof-of-concept, or seedling projects that complement the [VTO Battery500 Consortium's research](#) to more than double the specific energy (to 500 watt-hours per kilogram) of lithium battery technologies which will result in smaller, lighter weight, less expensive battery packs, and more affordable electric vehicles.
- **Integrated Computational Materials Engineering (ICME) Development of Low Cost Carbon Fiber for Lightweight Materials:** this topic seeks to develop low-cost carbon fiber while advancing ICME techniques to accelerate the development-to deployment lead time in all lightweight materials systems.
- **Emission Control Strategies for Advanced Combustion Engines:** this topic aims to develop and demonstrate catalyst materials and after-treatment strategies that enable vehicles with advanced combustion engines to significantly improve fuel economy while meeting near-zero emissions standards.
- **Energy Efficient Mobility Systems Research and Development:** this topic seeks to support proof-of-concept research to develop concepts that support future transportation scenarios that maximize the energy efficiency of people and/or goods movement.

For more information and application requirements, please visit the [EERE Exchange website](#) or [Grants.gov](#).

Congress: House approves the 21st Century Cures Act, sending landmark bill to Senate: After three years of debate, countless hearings, and pleas from patient advocates, lawmakers on Tuesday approved legislation to speed new medicines to market and to authorize an additional \$4.8 billion in spending for medical research. The landmark legislation provides \$4.8 billion for the three signature Obama administration research programs over the next 10 years: Vice President Joe Biden's [cancer moonshot](#), the [BRAIN Initiative](#), and the [Precision Medicine Initiative](#). It would also give states \$1 billion to fight the opioid crisis, and deliver an additional \$500 million to the FDA. More information on the website <https://www.statnews.com/2016/11/30/21st-century-cures->

[act-](#)

[house/?utm_content=buffer3ecac&utm_medium=social&utm_source=twitter.com&utm_campaign=buffer](#)

Congress on COMPETES Bill: U.S. House of Representatives passed the compromise version of S. 3084, meaning that it will soon become law. The surprising turn ends a 4-year odyssey for legislation that triggered a bitter partisan battle over how the National Science Foundation (NSF) manages its \$7 billion research portfolio. Congress has reached a truce—and possibly a lasting settlement—in the fiercely partisan 3-year war between Republican leaders in the House of Representatives and the scientific community over how NSF should operate. The terms of the agreement, between House and Senate negotiators, may seem like minor changes. But the compromise, which the Senate could adopt as early as this week, resolves differences over how NSF should conduct peer review and manage research in ways that the agency thinks it can live with. The battleground is a reauthorization of the 2010 America Creating Opportunities to Meaningfully Promote Excellence in Technology, Education, and Science (COMPETES) Act, which sets out policies governing NSF, the National Institute of Standards and Technology (NIST), and federal programs on innovation, manufacturing, and science and math education. Reauthorization bills don't fund an agency, but they provide important policy guidance. The final text strongly endorses the two criteria NSF now uses to judge its grant applicants—the “intellectual merit” of the idea, and the “broader impacts” of the research on society. The “national interest” categories favored by Representative Smith remain in the bill—increasing economic competitiveness, advancing the health and welfare of the public, training a globally competitive workforce, strengthening national security, and enhancing partnerships between academia and industry. But they are now listed as examples of how researchers can satisfy NSF's second criterion—broader impacts—rather than as the primary rationale for the proposed research. More information on: <http://www.sciencemag.org/news/scienceinsider>

NSF: Following open discussion at the National Science Board meeting on November 8th and 9th, NSF has established the Total Project Cost (TPC) eligibility threshold for potential inclusion in the Major Research Equipment and Facilities Construction (MREFC) account at \$70M. This adjustment responds to emergent scientific research opportunities and addresses the gap that previously existed between smaller instrumentation and major facility projects. Further details on MREFC account eligibility will be included in the FY 2017 revision of NSF's *Large Facilities Manual* which will be published in December and made available on the Large Facilities Office website (<https://www.nsf.gov/bfa/lfo/index.jsp>). The scientific community should incorporate this change in their long range portfolio planning and prioritization efforts. More Information is on the website: <https://www.nsf.gov/pubs/2017/in138/in138.jsp>

L'Oréal Fellowship Program for Women Post-Docs: The L'Oréal USA For Women In Science fellowship program awards five post-doctoral women scientists annually with grants of \$60,000 each. Applicants are selected from a variety of fields, including the life and physical/material sciences, technology (including computer science), engineering, and mathematics. Applications will open on November 28, 2016 and are due by February 3, 2017. The application and more information about the L'Oréal USA For Women in Science program can be found at www.lorealusa.com/forwomeninscience.

Webinar and Events

Event: NSF Webinar: Introduction to I-Corps Teams

When: January 3, 2016 2.00 PM – 4.00 PM

Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=189701&org=NSF

Brief Description: Curious about the NSF I-Corps program? Join this monthly introductory webinar to learn more about I-Corps Teams and how they contribute to the innovation ecosystem. During the webinar, I-Corps program directors will answer questions about I-Corps and provide updated information about I-Corps contacts, the [curriculum](#), important dates and other aspects of I-Corps. The I-Corps curriculum provides real-world, hands-on, immersive learning about what it takes to successfully transfer knowledge into products and processes that benefit society.

The webinar will be held the **first Tuesday of every month at 2:00 p.m., eastern time.**

To join the webinar: First, access the audio portion of the webinar by phone by calling (800) 857-5210 (for callers inside the U.S.) OR (210) 234-7080 (for callers outside the U.S.). The participant passcode is 3192939#

Second, access the [visual portion](#) of the webinar (WebEx meeting number 743 582 265):

- Go to <https://nsf.webex.com/nsf/j.php?MTID=m37c931eeb5d7a1c32e62c41975c03a2b> [Note: Firefox is recommended for Mac users.]
- If requested, enter your name and email address.
- If a password is required, enter the meeting password: I_C0rp5!
- Click "Join".

You may download the slides in advance--[download the slides](#) (PDF, 1.6 MB).

Event: NSF Webinar: ADVANCE Partnership Proposal Presentation

When: January 11, 2017; 12.00 PM – 5.00 PM

Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=135008&org=NSF

Brief Description: The ADVANCE program office held a pre-proposal technical assistance webinar on September 21, 2016 on the ADVANCE *Partnership* track described in the [ADVANCE solicitation 16-594](#). The *Partnership* presentation slides can be downloaded at the end of this web page. Please be sure to review the solicitation for the official guidelines and information on preparing and submitting ADVANCE proposals.

ADVANCE Summary of Deadlines (NSF 16-594):

•Partnership

- December 14, 2016* Letter of Intent deadline (LOI is required in order to submit full proposal)
- January 11, 2017* Full Proposal deadline

•Institutional Transformation

- April 12, 2017* Preliminary proposal deadline (required in order to submit full proposal)
- January 17, 2018* Full Proposal deadline (only if invited after preliminary proposal review)

•Adaptation

- August 9, 2017* Letter of Intent deadline (LOI is required in order to submit full proposal)
- September 13, 2017* Full Proposal deadline

Other funding opportunities:

•ADVANCE Resource and Coordination Network

- Target date for full proposal – March 15, 2017
- Talk to program office first ADVANCE@nsf.gov

Grant Opportunities

National Science Foundation

Grant Program: Innovation Corps (I-Corps TM) - National Innovation Network Nodes Program (I-Corps Nodes)

Agency: National Science Foundation NSF 17-533

RFP Website: <https://www.nsf.gov/pubs/2017/nsf17533/nsf17533.htm>

Brief Description: The National Science Foundation (NSF) seeks to further develop and nurture a national innovation ecosystem that builds upon fundamental research to guide the output of scientific discoveries closer to the development of technologies, products, processes and services that benefit society. The goal of the program is to dramatically reduce the period of time necessary to bring a promising idea from its inception to widespread implementation.

Through this solicitation, NSF is seeking to expand and sustain the network of Innovation Corps (I-Corps™) (hereinafter I-Corps) Nodes that work cooperatively to support the development of innovations that will benefit society. NSF plans to build upon the established National Innovation Network (consisting of I-Corps Nodes and Sites) to further support the needs for innovation research, education and training. The interconnected nodes of the network are expected to be diverse in research areas, resources, tools, programs, capabilities, and geographic locations - providing the network with the flexibility to grow or reconfigure as needs arise.

I-Corps Nodes will foster understanding on how to: 1) identify, develop and support promising ideas that can generate value, 2) create and implement tools, resources and training activities that enhance our nation's innovation capacity, 3) gather, analyze, evaluate and utilize the data and insight resulting from the experiences of those participating in regional programs and 4) share and leverage effective innovation practices on a national scale - to improve the quality of life for the U.S. citizenry. In addition, Nodes must identify and are expected to implement plans for sustainable scaling of their efforts beyond the duration of NSF support.

Awards: Anticipated Funding Amount: \$2,000,000 to \$8,000,000

Track 1: *I-Corps Node Development* - new I-Corps Node awardees - to be supported at a level of up to:

- \$1,200,000 (years 1 and 2)
- \$900,000 (year 3)
- \$600,000 (year 4)
- \$300,000 (year 5)

Track 2: *I-Corps Node Renewal* - previously funded I-Corps Nodes - to be supported at a level of up to:

- \$900,000 (years 1 and 2)
- \$750,000 (year 3)
- \$600,000 (year 4)
- \$300,000 (year 5)

Estimated program budget, number of awards and average award size/duration are subject to the availability of funds.

Letter of Intent: Required; Due on February 09, 2017

Full Proposal Submission Due Date: March 14, 2017

Contacts:

- Lydia McClure, telephone: (703) 292-8798, email: lmccclure@nsf.gov
- Steve Konsek, telephone: (703) 292-7021, email: skonsek@nsf.gov

Grant Program: Building Community and Capacity in Data Intensive Research in Education (BCC-EHR)

Agency: National Science Foundation NSF 17-532

RFP Website: <https://www.nsf.gov/pubs/2017/nsf17532/nsf17532.htm>

Brief Description: As part of NSF's Cyberinfrastructure Framework for 21st Century Science and Engineering (CIF21) activity, the Directorate for Education and Human Resources (EHR) seeks to enable research communities to develop visions, teams, and capabilities dedicated to creating new, large-scale, next-generation data resources and relevant analytic techniques to advance fundamental research for areas of research covered by EHR programs. Successful proposals will outline activities that will have significant impacts across multiple fields by enabling new types of data-intensive research. Investigators should think broadly and create a vision that extends intellectually across multiple disciplines and that includes—but is not necessarily limited to - areas of research funded by EHR.

Awards: Standard Grants.

Letter of Intent: Not Required

Full Proposal Submission Due Date: March 15, 2017

Contacts:

- John C. Cherniavsky, 855.37, telephone: (703) 292-5136, email: jchernia@nsf.gov
- Finbarr (Barry) Sloane, 890.04, telephone: (703) 292-8465, email: fsloane@nsf.gov

Grant Program: Energy-Efficient Computing: from Devices to Architectures (E2CDA)

Agency: National Science Foundation NSF 17-531

RFP Website: <https://www.nsf.gov/pubs/2017/nsf17531/nsf17531.htm>

Brief Description: There is a consensus across the many industries touched by our ubiquitous computing infrastructure that future performance improvements across the board are now severely limited by the amount of energy it takes to manipulate, store, and critically, transport data. While the limits and tradeoffs for this performance-energy crisis vary across the full range of application platforms, they have all reached a point at which evolutionary approaches to addressing this challenge are no longer adequate.

Truly disruptive breakthroughs are now required, and not just from any one segment of the technology stack. Rather, due to the complexity of the challenges, revolutionary new approaches are needed at each level in the hierarchy. Furthermore, simultaneous co-optimization across all levels is essential for the creation of new, sustainable computing platforms. These simultaneous technical and organizational challenges have never been as complex or as critically important as they are now. The urgency of solving the multi-disciplinary technical challenges will require new methods of collaboration and organization among researchers.

Therefore, a comprehensive and collaborative approach must be undertaken to maximize the potential for successfully identifying and implementing revolutionary solutions to break through the bottleneck of energy-constrained computational performance. Programmers, system architects, circuit designers, chip processing engineers, material scientists, and computational chemists must all explore these new paths together to co-design an optimal solution path.

The National Science Foundation (NSF) and the Semiconductor Research Corporation (SRC) recognize this need, and agree to embark on a new collaborative research program to support compelling research that is of paramount importance to industry, academia and society at large. This partnership will specifically support new research to minimize the energy impacts of processing, storing, and moving data within future computing systems, and will be synergistic with other research activities that address other aspects of this overarching energy-constrained

computing performance challenge. The jointly supported research effort aligns with interagency initiatives and priorities, including the [National Strategic Computing Initiative](#) and the [nanotechnology-inspired Grand Challenge for Future Computing](#).

Awards: Standard Grants. Anticipated funding amount: \$6,000,000

Letter of Intent: Not Required

Full Proposal Submission Due Date: March 07, 2017

Contacts:

- Sankar Basu, Program Director, Computing & Communication Foundations Division, NSF, telephone: (703) 292-7843, email: sabasu@nsf.gov
 - Dimitris Pavlidis, Program Director, Electrical, Communications & Cyber Systems Division, NSF, telephone: (703) 292-2216, email: dpavli@nsf.gov
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Grant Program: Innovations at the Nexus of Food, Energy and Water Systems (INFEWS)

Agency: National Science Foundation NSF 17-530

RFP Website: <https://www.nsf.gov/pubs/2017/nsf17530/nsf17530.htm>

Brief Description: Humanity is reliant upon the physical resources and natural systems of the Earth for the provision of food, energy, and water. It is becoming imperative that we determine how society can best integrate across the natural and built environments to provide for a growing demand for food, water and energy while maintaining appropriate ecosystem services. Factors contributing to stresses in the food and energy and water (FEW) systems include increasing regional and social pressures and governance issues as result of land use change, climate variability, and heterogeneous resource distribution. Interconnections and interdependencies associated with the FEW nexus create research grand challenges for understanding how the complex, coupled processes of society and the environment function now, and in the future. To meet these grand challenges, there is a critical need for research that enables new means of adapting to future challenges. The FEW systems must be conceptualized broadly, incorporating physical processes (such as built infrastructure and new technologies for more efficient resource utilization), natural processes (such as biogeochemical and hydrologic cycles), biological processes (such as agroecosystem structure and productivity), social/behavioral processes (such as decision making and governance), and cyber-components (such as sensing, networking, computation and visualization for decision-making and assessment). Investigations of these complex systems may produce discoveries that cannot emerge from research on food or energy or water systems alone. It is the synergy among these components in the context of sustainability that will open innovative science and engineering pathways to produce new knowledge, novel technologies and predictive capabilities to solve the challenges of scarcity and variability.

The overarching goal of INFEWS is to catalyze well-integrated interdisciplinary and convergent research to transform scientific understanding of the FEW nexus (integrating all three components rather than addressing them separately), in order to improve system function and management, address system stress, increase resilience, and ensure sustainability. The NSF INFEWS initiative is designed specifically to attain the following goals:

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

This initiative enables interagency cooperation on one of the most pressing problems of the millennium - understanding interactions across the FEW nexus - how it is likely to affect our world, and how we can proactively plan for its consequences. It allows the partner agencies - National Science Foundation (NSF) and the United States Department of Agriculture National Institute of Food and Agriculture (USDA/NIFA) and others - to combine resources to identify and fund the most meritorious and highest-impact projects that support their respective missions, while eliminating duplication of effort and fostering collaboration between agencies and the investigators they support.

Awards: Standard Grants. Anticipated funding amount: \$2,500,000

Letter of Intent: Not Required

Full Proposal Submission Due Date: March 06, 2017

Contacts:

- Thomas Torgersen, Co-Chair, Directorate for Geosciences, telephone: 703-292-4738, email:ttorgers@nsf.gov
 - David Corman, Directorate for Computer & Information Science & Engineering, telephone: 703-292-8754, email: dcorman@nsf.gov
 - Carol Bessel, Directorate for Mathematical & Physical Sciences, telephone: 703-292-4906, email:cbessel@nsf.gov
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National Institutes of Health

Grant Program: NIBIB Biomedical Technology Resource Centers (P41)

Agency: National Institutes of Health PAR-17-083

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-17-083.html>

Brief Description: The National Institute of Biomedical Imaging and Bioengineering (NIBIB) uses the P41 mechanism to support Biomedical Technology Resource Centers (BTRCs) that accelerate the development and dissemination of new biomedical technology. It is expected that BTRCs would have a nationwide impact. BTRCs create critical and unique technologies that are at the forefront of their respective fields, and apply these technologies to a broad range of basic, translational, and/or clinical research. Details concerning current NIBIB BTRCs can be found at <https://www.nibib.nih.gov/research-funding/biomedical-technology-resource-centers>.

A BTRC assembles a critical mass of both technological and other intellectual resources with the intent of advancing the development of instrumentation and methodology for biomedical research. NIBIB BTRCs may develop new technologies for use in biomedical research or clinical application(s). This is accomplished through a synergistic interaction of technical and biomedical expertise, both within the BTRC and with other laboratories outside of the BTRC.

The central components of any BTRC are the Technology Research and Development (TR&D) projects. These projects serve as the foundation of all the activities within the BTRC. TR&D projects should be at the cutting edge of the technological field and respond to the emerging needs of the biomedical research community. TR&D projects are scientifically distinct, but are not stand-alone projects, thus they should build on and strengthen the synergistic interactions within the BTRC.

The BTRC application must include Collaborative Projects (CPs) that serve as technology test-beds for the cutting-edge technology developed in TR&D projects. Working in a push-pull, interactive relationship with CPs, a TR&D project should develop and optimize new tools and methods to address specific biomedical research problems that are otherwise difficult to tackle using existing tools and methods. It is expected that the CPs driving the science of each TR&D project would present important challenges to the TR&D.

The BTRC application must include Service Projects (SPs) that serve as users of the well-developed and stable technologies of the BTRC. SPs make use of the technology and expertise of the BTRC, but are not intended to serve as primary drivers for technology development. Unless there are technological and/or clinical limitations to distributing the TR&D technology, the CPs and SPs should each have a national geographic distribution. The national geographic distribution of the CPs and SPs in new applications may be somewhat limited, but, as BTRCs mature, it is expected that there will be a broad national distribution.

A BTRC also must provide training to outside investigators and disseminate the technology and methods it has developed. These efforts require the commitment of far greater financial and personnel resources to non-science activities than is expected for other types of research efforts. The goal of these efforts is to export the technology and expertise of the BTRC into the broader community, achieving a wider impact on biomedical research. Industrial partnerships are not required, but they are welcome when appropriate. An illustration of the interactions among the required components of a BTRC can be found at NIBIB's BTRC website: (<https://www.nibib.nih.gov/research-funding/biomedical-technology-resource-centers>.)

This combination of TR&D projects, the intense push-pull relationship between technology development and biomedical problem-solving CPs, and the deployment of technologies through biomedical problem-solving SPs, together with training and dissemination, are what set apart BTRCs from other investigator-initiated research that generally have more narrowly defined goals (such as R01s).

As extensive planning is required in preparing the BTRC applications, prospective new applicants should discuss their plans with the relevant NIBIB Program Directors (refer to <http://www.nibib.nih.gov/research/scientificprogramareas>) to determine the appropriateness of their applications to the P41 mechanism and the NIBIB mission. It is recommended that these discussions occur at least 4-6 months prior to application.

To maintain a balance between the conflicting demands of nurturing new technology areas versus providing for sustained development in established areas, NIBIB limits funding for BTRCs to 15 years. PD(s)/PI(s) whose BTRCs have reached the funding period limit are allowed to submit a new BTRC application that demonstrates substantial changes to the focus of technology development efforts. Guidelines outlining the substantial changes that would be expected from a previously funded BTRC to constitute a new application can be found at <https://www.nibib.nih.gov/sites/default/files/P41%20New%20Center%20Guidelines.pdf>

Like the NIBIB, the National Institute of General Medical Sciences (NIGMS) has a program that supports Biomedical Technology Research Resources. Details about that program can be found at [Biomedical Technology Research Resources \(BTRRs\)-National Institute of General Medical Sciences\(https://publications.nigms.nih.gov/btrrs/searchresultsall.asp\)](https://publications.nigms.nih.gov/btrrs/searchresultsall.asp). Applicants who are interested in submitting an application to the NIGMS program need to use NIGMS application procedures rather than those in this announcement.

Awards: Direct costs (excluding equipment) are not limited and are expected to vary among applications. Typical direct costs for BTRCs range between \$600,000 and \$750,000. In addition , up to \$500,000 can be requested for special-purpose equipment for the duration of a five-year project period.

Letter of Intent: Six weeks prior to the application due date

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

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

Grant Program: Shared Instrumentation for Animal Research (SIFAR) Grant Program (S10)

Agency: National Institutes of Health PAR-17-075

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-17-075.html>

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

NIH-funded investigators use many different vertebrate and invertebrate animal species in all areas of biomedical research; including (but not limited to) roundworms, fruit flies, African clawed frogs, zebrafish, birds, mice, rats, and rhesus macaques. This Funding Opportunity Announcement (FOA) supports instrumentation requests related to any and all animal species needed for NIH-supported biomedical research. Similarly, NIH-funded investigators rely in their work on a broad spectrum of technologies including (but not limited to) nuclear magnetic resonance (NMR) and mass spectrometers, DNA and protein sequencers, biosensors, electron and confocal microscopes, cell-sorters, and biomedical imagers. This FOA supports requests for all available technologies to enhance research using animals or related materials such as tissue, cells, or germplasm, for the ultimate benefit of human health.

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

Awards: Applications will be accepted for commercially available instruments only. If a cluster/series of instruments is requested, it must include an item that costs at least \$50,000. The least expensive instrument in a cluster/series must cost at least \$20,000. If a single instrument is requested, it must cost at least \$50,000. There is no upper limit on the cost of each instrument, but the maximum award is \$750,000. Since the cost of the various instruments will vary, it is anticipated that the amount of the award will also vary.

Letter of Intent: Not required

Deadline: May 31, 2017, by 5:00 PM local time of applicant organization. All [types of non-AIDS applications](#) allowed for this funding opportunity announcement are due on this date.

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

Grant Program: High-End Instrumentation (HEI) Grant Program (S10)

Agency: National Institutes of Health PAR-17-076

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-17-076.html>

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

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

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

Instruments must be for research purposes only.

In rare special circumstances when an institution cannot justify sole use of the high-end instrument for NIH-supported and other biomedical research, the institution may request a Special Use Instrument (SUI). Eligibility requirements for SUI requests are described in [Section III 3](#).

Foreign-made instruments are allowed.

The HEI Program will **not** support requests for:

- An instrument with a base cost of less than \$600,000;
- Multiple instruments bundled together;
- Purely instructional equipment;
- Institutional administrative management systems, clinical management systems, or instruments to be used purely for clinical (billable) care;
- Software, unless it is integral to the operation of the requested equipment;
- General purpose equipment or an assortment of instruments to furnish a research facility and equipment for routine sustaining infrastructure (such as standard machine shop equipment, standard computer networks, autoclaves, hoods, and equipment to upgrade animal facilities).

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

Letter of Intent: Not Required.

Deadline: May 31, 2017, by 5:00 PM local time of applicant organization. All [types of non-AIDS applications](#) allowed for this funding opportunity announcement are due on this date.

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

Grant Program: Exploratory Research for Technology Development (R21)

Agency: National Institutes of Health PAR-17-046

RFP Website: <http://grants.nih.gov/grants/guide/pa-files/PAR-17-046.html>

Brief Description: For the purpose of this FOA, technology refers to tools that enable research. This includes laboratory instruments and other devices, algorithms and software, chemical reagents and processes by which biomedically related molecules are produced and modified, and the manipulation of biological systems to produce or become research tools. This FOA calls for exploratory technology development predicated on a broad need or challenge in biomedical research that can be described explicitly. This need should be beyond the ability of the current technology development regime to meet. It should be clear that something fundamentally different is needed. The proposed technology should have the potential to address basic biomedical research needs or technical problems that occur broadly across multiple systems or

diseases. Specific examples may be cited. Exploratory research into technologies specific to only one disease or system are not appropriate for this FOA.

No Preliminary Data: Availability of preliminary data is an indication that the proposed project has advanced beyond the exploratory stage defined by this program, and will make the application unsuitable for this funding opportunity. Consideration should be given to submitting such projects to the companion R01 program ([PAR-17-045](#)).

High-Risk Exploratory Research: Applications through this FOA for exploratory research projects may propose a single specific solution to a broadly stated biomedical research need, with the goal of determining the feasibility of that approach. Alternatively, a proposed project may take a broader approach that will explore several possible solutions, leading to an improved understanding of the best technical avenues to pursue in order to create a new capability. This less directed approach may lead to a better understanding of the relative merits or likelihood of success of multiple potential approaches to be pursued in developing a technology.

This program will support proof-of-principle research leading to advances in technology. Because new ideas are essential to this process, the projects will entail a high degree of risk or novelty, which will be offset by a correspondingly high potential impact. However, the possible impact is unlikely to be immediate. Substantial additional development of the technology after completion of the project is likely to be necessary. The program will recognize and reward high risk approaches with the potential for significant impact.

No Biological Aims: Biomedical relevance is an essential element of NIH research. However, the exploratory stage of technology development should not include immediate short-term application of nascent technologies to challenging biomedical research questions because an insistence on explicit linkage to a specific research problem and the immediate demonstration of an immature technology's effectiveness in that context can distort the technology development process. It can also diminish focus on development of genuinely innovative technology in favor of incremental improvements to existing technologies. In the early stages of technology development, insistence on biomedical applications is counterproductive. Therefore, in this program, application to specific biomedical questions in the timeframe of the proposed project is considered beyond the scope of the program, and should not be included.

Milestones: A milestone is a defined event, achievement, or important stage that is used to indicate the progress of a project. Milestones should be descriptive of what will be done and when it will be completed.

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.

Department of Defense/US Army/DARPA/ONR

Grant Program: A MEchanical Based Antenna (AMEBA)

Agency: Defense Advanced Research Projects Agency DARPA HR001117S0007

Website:

<https://www.fbo.gov/index?s=opportunity&mode=form&id=a7ad32588088d94cf6d66af19851b22e&tab=core&cvview=0>

Brief Description: DARPA seeks innovative proposals to develop mechanically-driven transmitters producing radio frequency (RF) signals at carrier frequencies below 30 kHz. The program will develop the basic technologies and demonstrate the feasibility of low-size, weight, and power (SWaP) transmitters satisfying the requirements of representative DoD missions. Proposed research should investigate innovative approaches that enable revolutionary advances in science, devices, or systems. Specifically excluded is research that primarily results in evolutionary improvements to the existing state of practice.

Awards: Various

Full Proposal Deadline: March 22, 2017

Contact Information: HR001117S0007@darpa.mil.

Department of Energy

Grant Program: Macroalgae Research Inspiring Novel Energy Resources (MARINER)

Agency: Department of Energy DE-FOA-0001726

Website: <https://arpa-e-foa.energy.gov/#Foalddb634121-488f-4c13-a13a-88295c643ed5>

Brief Description: The United States has the world's largest marine Exclusive Economic Zone, an area of ocean along the nation's coast lines which is equivalent to the total land area of all 50 states. The nation has the potential to utilize this resource to build and grow a thriving marine biomass industry for the production of fuels, chemicals, feed, and food. Growing macroalgal biomass in the oceans offers a unique opportunity to sidestep many of the challenges associated with terrestrial biomass production systems, particularly the growing competition for land and freshwater resources, which are likely to result from the 50 to 100% increase in demand for food expected for 2050. The overall goal of this program is to develop the critical tools that will allow the nascent macroalgae industry in the United States to leverage this tremendous resource and grow into a world leader in the production of marine biomass. The program will focus on developing advanced cultivation technologies that enable the cost and energy efficient production of macroalgal biomass in the ocean at a scale suitable as feedstock for the production of fuels and chemicals. The challenge is to dramatically reduce capital and operating cost of macroalgae cultivation, while significantly increasing the range of deployment by expanding into more exposed, off-shore environments. Specifically, this program is interested in new designs and approaches to macroalgae cultivation, with harvesting and transport being an integral part of such systems. These new systems may leverage new material and engineering solutions, and autonomous and robotic operations, as well as advanced sensing and monitoring capabilities. To further accelerate the development and deployment of such systems, the program will also focus on the development of computational modeling tools and ocean- deployable sensor platforms, as well as advanced macroalgal breeding tools. ARPA-E expects that the MARINER program will support development of technologies that will accelerate the deployment of advanced ocean farming systems capable of delivering renewable biomass feedstock at a cost competitive with terrestrial biomass feedstocks.

Awards: Anticipated Funding: \$25,000,000

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

Full Proposal Deadline: February 14, 2017

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.

Grant Program: "Productivity Enhanced Algae and Tool-Kits (PEAK)"

Agency: Department of Energy DE-FOA-0001628

Website: <https://eere-exchange.energy.gov/Default.aspx#Foald7e516e41-db54-4c51-a274-48604245e917>

Brief Description: The Office of Energy Efficiency and Renewable Energy (EERE) is issuing, on behalf of the Bioenergy Technologies Office (BETO), a Funding Opportunity Announcement (FOA) DE-FOA-0001628, entitled "Productivity Enhanced Algae and Tool-Kits (PEAK)."

Through this FOA, DOE will support multidisciplinary biological innovation to deliver strains, tools, data, and techniques to enhance algal biofuel potential and enable accelerated future innovation in algal biofuels and bioproducts.

This FOA will fund a variety of projects and approaches that overcome species-specific, ecological, and practical challenges to achieving improved algal areal productivity and to fuel yield (i.e. biomass composition).

This FOA has two topic areas:

1) Topic Area 1: Strain Improvement

This topic area is for small teams to develop enhanced algal strains with increased areal productivity and biofuel yield, along with improved or novel algal toolkits and/or methods. Strain improvement methods may include gene discovery and biological pathway analysis, directed evolution, breeding, and/or genetic engineering of novel algal strains that can reproducibly out-perform the current best available strains in outdoor conditions, where "performance" is represented by productivity, robustness, and composition. Applicants must include a detailed discussion of the reasoning behind their proposed strategy or strategies, strain choice, and why the proposed strain improvement approach has/have the highest probability of success.

2) Topic Area 2: Cultivation Biology Improvement

This topic area is for small teams to develop increased areal productivity and biofuel yield through enhanced management of ecological or abiotic contributions to cultivation biology, along with improved or novel algal toolkits and/or methods. Cultivation biology development improvements may include leveraging natural or designed microbial assemblages of the algal culture ecosystem to boost performance and resist pathogens, and understanding species-specific cultivation conditions.

This topic area is about improving management of a current cultivation system. Abiotic contributions, including nutrient and stochastic climatological variables, can have a profound effect on outdoor performance. Topic Area 2 supports improving the understanding of physiology and performance under fluctuating and uncontrollable abiotic conditions. Applicants must include a detailed discussion of the reasoning behind their proposed strategy or strategies and why the proposed cultivation improvement approach has/have the highest probability of success.

Awards: Various

Concept Paper Deadline: December 20, 2016; 5:00pm ET

Full Proposal Deadline: February 21, 2017; 5:00pm ET

Contact Information:

- EERE-ExchangeSupport@hq.doe.gov

For technical questions related to EERE Exchange

- PEAKFOA@ee.doe.gov

All questions regarding this FOA must be submitted to this email not later than 3 business days prior to the application due date. All questions and answers related to this FOA will be posted here. As this is an open, competitive solicitation, private discussions are prohibited.

Grant Program: Fiscal Year 2017 Vehicle Technologies Program Wide Funding Opportunity Announcement

Agency: Department of Energy DE-FOA-0001629

Website: <https://eere-exchange.energy.gov/Default.aspx#Foald7e516e41-db54-4c51-a274-48604245e917>

Brief Description: The Office of Energy Efficiency and Renewable Energy (EERE) is issuing, on behalf of the Vehicle Technologies Office (VTO), this Funding Opportunity Announcement (FOA) entitled "FY 2017 Vehicle Technologies Program Wide Funding Opportunity Announcement."

This FOA supports a broad portfolio of advanced highway transportation technologies that reduce petroleum consumption and improve energy efficiency while meeting or exceeding performance and cost expectations. VTO seeks projects that accelerate the development of advanced batteries, lightweight materials, and emissions control systems, as well as the development of technologies and systems that enable significant improvements in the energy efficient mobility of people and goods.

Awards: Various. Anticipated Total Funding: \$24,500,000

Concept Paper Deadline: January 31, 2017; 5:00pm ET

Full Proposal Deadline: March 24, 2017; 5:00pm ET

Contact Information:

Please join us for an applicant webinar!

Date and Time

Tues, Jan 10, 2017 2:00 PM - 3:00 PM EST

Audio

Participants can use their telephone or computer mic & speakers (VoIP).

United States: +1 (562) 247-8321

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Access Code: 742-761-135

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Registration URL: <https://attendee.gotowebinar.com/register/3407203295318519298>

Webinar ID: 307-826-531

NASA**Grant Program: ROSES 2016: Advanced Information Systems Technology**

Agency: NASA NNH16ZDA001N-AIST

Website:

<https://nspires.nasaprs.com/external/solicitations/summary.do?method=init&solId={FFB54233-DF18-5F45-939D-2569C4C5B2EE}&path=init>

Brief Description: The Earth is a vast, complex, dynamic, interconnected system. Information systems technologies play an essential role in our ability to understand, to forecast, and to predict the Earth system's behavior through the generation, management, and scientific exploitation of the very large amounts of data and information from space-, airborne-, and ground-based sensors, as well as model output. Advances in information systems impact all Earth Science focus areas:

- Atmospheric Composition
- Earth Surface and Interior
- Climate Variability and Change
- Water and Energy Cycle
- Carbon Cycle & Ecosystems
- Weather

The Earth Science Technology Office (ESTO) manages the early development of advanced technologies and applications that are needed for cost-effective NASA Earth Science Division (ESD) missions. ESTO plays a major role in shaping Earth science research and application programs of the future. These important technology investments enable promising scientific and engineering concepts to be explored. ESTO ensures its technology programs create an effective balance of investments by coordinating across missions and science focus areas to define technology needs of NASA's Earth Science Division.

The goals of the Advanced Information Systems Technology (AIST) program are to identify, develop, and demonstrate advanced information system technologies that:

- Reduce the risk, cost, size, and development time for Earth science space-based, airborne, and ground-based information systems,
- Increase the accessibility and utility of science data, and
- Enable new observations and information products. The AIST is focused on maturing technology projects early in the Technology Readiness Level (TRL) cycle (2 to 4) and to mature the technologies (typically TRL 6) for potential infusion into the appropriate science, applications, and mission communities

Awards: Available amount: \$12,500,000

Letter of Intent: December 21, 2016

Full Proposal Deadline: February 16, 2017

Contact: Michael Little Earth Science Technology Office Science Mission Directorate NASA Headquarters Washington, DC 20546-0001 E-mail: Michael.M.Little@nasa.gov

National Endowment of Humanities

Grant Program: Summer Seminars and Institutes

Agency: National Endowment of Humanities

Website: <https://www.neh.gov/grants/education/summer-seminars-and-institutes>

Brief Description: NEH Summer Seminars and Institutes grants support professional development programs in the humanities for school teachers and for college and university faculty. Seminars and institutes may be as short as one week or as long as four weeks.

NEH Summer Seminars and Institutes

- provide models of excellent teaching;
- provide models of excellent scholarship;
- broaden and deepen understanding of the humanities;
- focus on the study and teaching of significant topics, texts, and other sources;
- contribute to the intellectual vitality of participants; and

- build communities of inquiry.

An NEH Summer Seminar or Institute may be hosted by a college, university, learned society, center for advanced study, library or other repository, cultural or professional organization, or school or school system. The host site must be suitable for the project, providing facilities for collegial interaction and scholarship. These programs are designed for a national audience of participants.

Awards: Depending on the seminar's duration, awards for seminars range between \$50,000 and \$135,000 in outright funds, for a grant period of twelve months.

Depending on the institute's size and duration, awards for institutes range between \$60,000 and \$225,000 in outright funds, for a grant period of fifteen months.

Proposal Deadline: Prospective applicants may submit a draft of their proposal for staff comment (note that submission of draft proposals is optional) **no later than January 31, 2017.**

Contact: Contact NEH's Division of Education Programs at 202-606-8471 or sem-inst@neh.gov

Grant Program: Public Humanities Projects

Agency: National Endowment of Humanities

Website: <https://www.neh.gov/grants/public/public-humanities-projects>

Brief Description: Public Humanities Projects grants support projects that bring the ideas and insights of the humanities to life for general audiences. Projects must engage humanities scholarship to analyze significant themes in disciplines such as history, literature, ethics, and art, or to address challenging issues in contemporary life. NEH encourages projects that involve members of the public in collaboration with humanities scholars or that invite contributions from the community in the development and delivery of humanities programming. This grant program supports a variety of forms of audience engagement. Applications should follow the parameters set out below for one of the following three formats:

- **Community Conversations:** This format supports one- to three-year-long series of community-wide public discussions in which diverse residents creatively address community challenges, guided by the perspectives of the humanities.
- **Exhibitions:** This format supports permanent exhibitions that will be on view for at least three years, or travelling exhibitions that will be available to public audiences in at least two venues in the United States (including the originating location).
- **Historic Places:** This format supports the interpretation of historic sites, houses, neighborhoods, and regions, which might include living history presentations, guided tours, exhibitions, and public programs. NEH encourages projects that explore humanities ideas through multiple formats. Proposed projects may include complementary components that deepen an audience's understanding of a subject: for example, a museum exhibition might be accompanied by a website, mobile app, or discussion programs. Your application must identify one primary format for your project and follow the application instructions for that format.

Awards: Applicants may also request a combination of outright and federal matching funds. For example, if an applicant is requesting \$40,000 in NEH funds, and the applicant includes in its cost sharing \$5,000 from an eligible third-party donor, the applicant should request \$5,000 in federal matching funds. The balance of the NEH request (\$35,000) would then be for outright funds. NEH may offer funding at a different level than that requested. In some instances, NEH may offer federal matching funds only, or it may offer a combination of federal matching and outright funds in response to a request for outright funds.

Proposal Deadline: January 11, 2017

Contact: Division of Public Programs National Endowment for the Humanities 400 Seventh Street, SW Washington, DC 20506 202-606-8269 publicpgms@neh.gov publicpgms@neh.gov

Vodafone Americas Foundation

Grant Program: Wireless Innovation Project

Agency: Vodafone Americas Foundation

Website: <http://vodafone-us.com/wireless-innovation-project/about-wip/>

Brief Description: The Vodafone Wireless Innovation Project™ (the “competition”) seeks to identify and fund the best innovations using wireless related technology to address critical social issues around the world. Project proposals must demonstrate significant advancement in the field of wireless-related technology applied to social benefit use. The competition is open to projects from universities and nonprofit organizations based in the United States. Although organizations must be based in the United States, projects may operate and help people outside of the United States.

- Applicants must demonstrate a multi-disciplinary approach that uses an innovation in wireless-related technology to address a critical global issue in one or more of the following areas:

Social Issue Areas

Access to communication

Education

Economic development

Environment

Health

Technical Issue Areas

Connectivity

Energy

Language or Literacy hurdles

Ease of use

- The project must be at a stage of research where an advanced prototype or field/market test can occur during the award period.
- The technology should have the potential for replication and large scale impact.
- Teams should have a business plan or a basic framework for financial sustainability and rollout.

Awards: The Vodafone Americas Foundation™ designed the Wireless Innovation Project™ as a competition to promote innovation and increase implementation of wireless related technology for a better world. Total awards up to \$600,000 will be available to support projects of exceptional promise that meet our [eligibility criteria](#). The application period usually opens in October or November — check the [online application](#) for exact dates.

Proposal Deadline: To submit a proposal, Applicants must first successfully complete the [Eligibility Questionnaire](#). Eligible Applicants will then receive the URL for the online application via e-mail and be asked to create a username and password which will enable them to work on their proposal online. The application consists of multiple narrative questions and a project budget spreadsheet that Applicants must complete and submit. All information must be submitted through the on-line application.

Submissions will be accepted from 9:00 a.m. Pacific Time on November 1, 2016 to 11:59 p.m. Pacific Time on March 6, 2017 (the “Entry Period”). See the [Project Timeline](#) for further dates and details

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