

# NJIT Research Newsletter

Issue: ORN-2016-025

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

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(Related to research funding)

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## Recent Research Grant and Contract Awards

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

**PI:** Lisa Axe (PI)

**Department:** Civil and Environmental Engineering

**Grant/Contract Project Title:** Advanced Pilot Testing of Treatment Processes for Removal of EDCs and PPCPs

**Funding Agency:** United Water

**Duration:** 09/03/13-09/30/16

**PI:** Lou Kondic (PI)

**Department:** Mathematical Sciences

**Grant/Contract Project Title:** Computations, Modeling and Experiments of Self and Directed Assembly for Nanoscale Liquid Metal Systems

**Funding Agency:** NSF

**Duration:** 07/01/16-06/30/19

**PI:** Zhi Wei (PI)

**Department:** Computer Science

**Grant/Contract Project Title:** Bioinformatics Analysis of Microbial Systems

**Funding Agency:** U Penn-Avon Foundation

**Duration:** 07/01/16-06/30/17

**PI:** Louis Lanzerotti (PI)

**Department:** Center for Solar Terrestrial Research

**Grant/Contract Project Title:** Radiation Belt Storm Probes Science Investigations (RBSPICE)  
Phases B,C, D, and E

**Funding Agency:** NASA

**Duration:** 01/01/09-07/15/16

**PI:** Joyoung Lee (PI)

**Department:** Civil and Environmental Engineering

**Grant/Contract Project Title:** Foreign advanced technology review seminar for the development of future technology for collecting number of person in vehicles

**Funding Agency:** GnT Solutions Korea

**Duration:** 03/31/16-11/30/16

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### In the News...

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

**Congress:** Senators Cory Gardner (R-Colo.) and Gary Peters (D-Mich) introduced S.3084, the **American Innovation and Competitiveness Act** (please see the document on the website [https://www.commerce.senate.gov/public/\\_cache/files/b4574069-01da-46a9-ac47-65d0cedff365/9D51D0007E704E01A213478606CFCCB5.s.-3084-gardner-peters-substitute.pdf](https://www.commerce.senate.gov/public/_cache/files/b4574069-01da-46a9-ac47-65d0cedff365/9D51D0007E704E01A213478606CFCCB5.s.-3084-gardner-peters-substitute.pdf)), on June 22. The bill would reauthorize programs at NSF, the National Institute of Standards and Technology (NIST), and the White House Office of Science and Technology Policy (OSTP). It would update the 2010 America COMPETES Act that authorized NSF through fiscal year (FY) 2013. S.3084 reaffirms NSF's two merit review criteria (intellectual merit and broader impacts), and it updates the Experimental Program to Stimulate Competitive Research (EPSCoR) with changes to the award structure and a name change (Established Program to Stimulate Competitive Research). The bill also: recommends NSF add a program to fund mid-scale projects of sizes between the Major Research Instrumentation (MRI) and Major Research Equipment and Facilities Construction (MREFC) programs; calls for stronger oversight over the full life-cycle of large-scale research facility projects; seeks reductions in the administrative burdens on federally funded researchers; and expands efforts to broaden participation by women, minorities and persons with disabilities in STEM fields.

On June 29, the Senate Commerce Committee approved several amendments to S.3084, including one to authorize appropriations for NSF of \$7.51 billion for FY 2017 and \$7.81 billion for FY 2018, and gave final Committee approval to the bill. Committee Chairman John Thune (R-S.D.) said in a statement, "The Committee's passage of the American Innovation and Competitiveness Act puts important enhancements for federal research and our economic competitiveness one step closer to becoming law." Details are available at [Congress.gov](http://Congress.gov).

**National Academy of Sciences:** At the request of Congress, the National Academy of Sciences convened the *Committee on Federal Research Regulations and Reporting Requirements* and tasked the committee to review the regulatory framework for research funding agencies. Now, a complete report of the far ranging review has been released, entitled [Optimizing the Nation's Investment in Academic Research](#). The Committee observed that prior recommendations for

reforming the research regulatory system have gained little traction, and there is no single fix to the myriad of laws, regulations, policies, rules, guidance, FAQs, etc. The report addresses its recommendations to Congress, the Office of Management and Budget, research agencies, and research institutions. Among other specific issues, the report takes aim at the ongoing NIH effort at reformulating the “common rule” governing the use of human research subjects. Read More on [http://www.sciencemag.org/news/2016/06/us-should-abandon-controversial-effort-update-human-research-rules-national-academies?utm\\_source=newsfromscience&utm\\_medium=twitter&utm\\_campaign=nihirb-5355](http://www.sciencemag.org/news/2016/06/us-should-abandon-controversial-effort-update-human-research-rules-national-academies?utm_source=newsfromscience&utm_medium=twitter&utm_campaign=nihirb-5355)

**NSF:** On May 27, the NSF released solicitation [NSF 16-569, Developing a National Research Infrastructure for Neuroscience \(NeuroNex\)](#). This solicitation follows from the NSF announcement to establish a [Brain Observatory](#), as directed in the language accompanying the [Consolidated Appropriations Act of FY 2015](#). The solicitation is aimed at two categories of proposals: the development of research resources, instrumentation, neurotechnologies, and the establishment of neurotechnology research hubs; and, establishing theoretical teams to understand the mechanisms governing information processing within a brain circuit and between interacting circuits in the brain as a whole. Hubs would coordinate and communicate research results, share instrumentation, and unify public and private investments in brain science. Large electron microscopes, magnetic resonance facilities, nanotechnology laboratories, computational and data centers, and other facilities would be better shared and utilized by the research community through the Brain Observatory concept. The theory teams would work in coordination with hubs to advance the underpinnings of behavior and cognition. The NSF has announced a [webinar](#) to be held on July 19 to discuss the proposed approach to both of these solicitation features. (See details in the Event section below in this newsletter).

**Crowding Out R&D:** Subsidizing "technology that is ready for commercial deployment" is pretty much the whole point of the Small Business Innovation Research and Technology Transfer (SBIR-STTR) programs, for which Congress sets aside a percentage of federal research budgets. Since FY11, the SBIR program at NSF "has expanded by 5 percent a year, or almost 30 percent overall . . . almost three times as much as the rest of the agency during the same time period," Assistant Director for Engineering Pramod Khargonekar told a [House Research and Technology Subcommittee hearing](#). While NSF supports permanent reauthorization of SBIR-STTR, it opposes a measure passed by the Small Business Committee that would increase program funding by 40 percent over 6 years for SBIR and 33 percent over 6 years for STTR. Such hikes "would come at the expense" of "existing highly meritorious fundamental research."

**Department of Labor: Fair Labor Standards Act:** On May 17, the Administration released a [final rule](#) updating the salary level salary threshold under which most salaried workers are entitled to overtime compensation. The salary threshold would increase from \$23,660 to \$47,476. For institutions of higher education, the rule would affect many classes of employees, such as post docs, who have not been eligible for overtime pay in the past. Funding agencies will be obligated to increase allowable stipends. During rulemaking, comments from the higher education community have expressed concerns about the capacity of research institutions to absorb these costs and the possibility that these will cut into overall research grant funding and increase tuition costs. The final rule will become effective December 1. Read More: [Inside Higher Ed, American Council on Education](#)

## **Events and Announcements**

**Event: NSF Webinar: NeuroNex Webinar**

**When: July 19, 2016 1.00 PM-3.00 PM**

**Website:**

[http://www.nsf.gov/events/event\\_summ.jsp?cntn\\_id=139072&WT.mc\\_id=USNSF\\_13&WT.mc\\_e v=click](http://www.nsf.gov/events/event_summ.jsp?cntn_id=139072&WT.mc_id=USNSF_13&WT.mc_e v=click)

**Brief Description:** *The NeuroNex Webinar will discuss the scope of the activity described below, pertinent review criteria, general guidelines for proposals to this activity, and post-award conditions for the cooperative agreements.* National Science Foundation recently announced its intention to foster the development of a national research infrastructure for neuroscience (NSF 16-047) to support collaborative and team science for achieving a comprehensive understanding of the brain. As part of this effort, NSF recently released a solicitation, NSF 16-569, which calls for two types of proposals:

- 1.) Neurotechnology Hubs: Projects that foster development and dissemination/deployment of innovative research resources and instrumentation, neurotechnologies and behavioral paradigms that can be applied across the phylogenetic spectrum, while providing greater access to existing resources where possible and serving broad communities within the brain sciences; and
- 2.) Theory Teams: Projects that foster theoretical approaches with the potential to reveal the neural underpinnings of behavior and cognition across organizational levels, scales of analysis, and/or a range of species.

For further details, please consult the [program summary page](#) and solicitation ([NSF 16-569](#)).

### **NeuroNex Webinar**

Tuesday, July 19th 2016

1:00pm eastern time | 2 hrs

When it's time, [join the meeting](#).

Meeting number: 746 147 790

Meeting password: JznuAn\*7

Join by Phone:

Toll Free Number: 1-888-391-0588

Participant Passcode: 1234

### **Contacts**

Ashley L. Hobbs, (703) 292-4972, [ahobbs@nsf.gov](mailto:ahobbs@nsf.gov)

James O. Deshler, (703) 292-8470, [jdeshler@nsf.gov](mailto:jdeshler@nsf.gov)

Sridhar Raghavachari, (703) 292-4845, [sraghava@nsf.gov](mailto:sraghava@nsf.gov)

### **NSF Related Organizations**

Directorate for Biological Sciences

Division of Biological Infrastructure

Division of Integrative Organismal Systems.

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**Event: IEEE Spectrum: Perspectives on 5G: Beamforming, MIMO, and More**

**When: July 14, 2016 12.00 PM-1.00 PM**

**Website:**

<https://event.on24.com/eventRegistration/EventLobbyServlet?target=reg20.jsp&referrer=&eventid=1215394&sessionid=1&key=B1FAB7F496B3A566B7656BEA1D9033B1&partnerref=SOL&sourcepage=register>

**Brief Description:** As telecommunications providers ramp up their drives for 5G wireless demonstration projects, we're bombarded with piecemeal news about advances in signal processing, device-centered communications, and evolving technical standards. This series will offer context, giving attendees a yardstick for evaluating the sometimes disconnected individual reports that make headlines throughout the year. 5G cannot be built on increasing high-frequency spectrum alone. To reach data-rate and user-density targets, communications strategies are moving away from the base station and migrating to the edge, creating multiple channels in single frequencies and learning how to home in on a single device in a crowded cityscape. In this session, two innovators will discuss the range of increasingly sophisticated signal processing strategies for expanding spectrum efficiency, moving from basic concepts, to massive MIMO (multiple input/multiple output), mmWave MIMO, compressed channel estimation, and beamforming design.

**PRESENTER:** Robert W. Heath, Jr., University of Texas at Austin, MIMO Wireless, and Kuma Signals; and Nuria González Prelcic, University of Vigo, Spain.

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**Event: NSF Webinar: How Data Commons Are Changing the Way We Share Research Data and Make Discoveries**

**When:** July 6, 2016 2.30 PM-3.30 PM

**Website:** [http://www.nsf.gov/events/event\\_summ.jsp?cntn\\_id=139104&org=NSF](http://www.nsf.gov/events/event_summ.jsp?cntn_id=139104&org=NSF)

**Brief Description:** Large scale data commons are beginning to change the way that we share research data and make scientific discoveries. In this talk, Dr. Grossman surveys some of the large scale scientific clouds and data commons, highlight some case studies, and discuss some of the emerging opportunities and challenges.

**PRESENTER:** Robert Grossman is a faculty member at the University of Chicago, where he is the Chief Research Informatics Officer (CRIO) of the Biological Sciences Division; the Director of the Center for Data Intensive Science (CDIS); a Senior Fellow and Core Faculty in the Institute for Genomics and Systems Biology and the Computation Institute; and a Professor in the Department of Medicine in the Section of Genetic Medicine. His research group focuses on data science, data intensive computing, biomedical informatics and related areas. He is the Director of the not-for-profit Open Commons Consortium that develops and operates data commons and data clouds to support research in science, medicine, health care, and the environment. He is also the Founder and Chief Data Scientist of Open Data Group that provides technology for deploying predictive models into operational systems. For his contributions to big data and data science, he was elected a Fellow of the AAAS in 2013.

**To Join the Webinar:** Please register

at: <https://nsf.webex.com/nsf/j.php?RGID=r734968f00977200012740df28ef85cad> by 11:59pm EST on Tuesday July 5, 2016.

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**Grant Opportunity Alerts**

Keywords and Areas Included in Grant Opportunity Alerts:

**NSF:** Focused Research Groups in the Mathematical Sciences (FRGMS); NSF Astronomy and Astrophysics Postdoctoral Fellowships (AAPF); Astronomy and Astrophysics Research Grants (AAG); Partnerships for International Research and Education (PIRE)

**NIH:** Bold New Bioengineering Methods and Approaches for Heart, Lung, Blood and Sleep Disorders and Diseases (R21)

**Department of Defense/US Army/DARPA/ONR:** Air Force Research Laboratory, Materials & Manufacturing Directorate, Functional Materials and Applications (AFRL/RXA); Long Range Broad Agency Announcement (BAA) for Navy and Marine Corps Science and Technology  
**Department of Energy:** Clean Energy Manufacturing Innovation Institute for Reducing Embodied-energy of Materials and Decreasing Emissions (REMADE) in Manufacturing  
**NASA:** ROSES 2016: Mars Data Analysis

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## **Grant Opportunities**

### **National Science Foundation**

#### **Grant Program: Focused Research Groups in the Mathematical Sciences (FRGMS)**

**Agency:** National Science Foundation NSF 16-577

**RFP Website:** <http://www.nsf.gov/pubs/2016/nsf16577/nsf16577.htm>

**Brief Description:** The purpose of the Focused Research Group activity is to support collaborative groups employing innovative methods to solve specific, major research challenges in the mathematical sciences. A major challenge is an outstanding problem of significant importance that requires the focused and synergistic efforts of a collaborative group to solve, and whose solution will have wide impacts in the mathematical sciences and potentially in other areas. Groups may include, in addition to statisticians and mathematicians, researchers from other science and engineering disciplines appropriate for the proposed research. Risky projects are welcome. Interdisciplinary projects are welcome. Projects should be timely, limited in duration to up to three years, and substantial in their scope and impact for the mathematical sciences. Funded projects that show substantial progress in their first two years may be recommended for a creativity extension for up to an additional two years.

**Awards:** Standard grants. **Anticipated Funding Amount:** \$10,000,000 per year

**Letter of Intent:** Not required.

**Full Proposal Submission Due Date:** September 27, 2016

#### **Contacts:**

- Tomek Bartoszynski, 1025 N, telephone: (703) 292-4885, email: [tbartosz@nsf.gov](mailto:tbartosz@nsf.gov)
  - Eugene C. Gartland, 1025 N, telephone: (703) 292-2279, email: [egartlan@nsf.gov](mailto:egartlan@nsf.gov)
  - Timothy Hodges, 1025 N, telephone: (703) 292-2113, email: [thodges@nsf.gov](mailto:thodges@nsf.gov)
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#### **Grant Program: NSF Astronomy and Astrophysics Postdoctoral Fellowships (AAPF)**

**Agency:** National Science Foundation NSF 16-575

**RFP Website:** <http://www.nsf.gov/pubs/2016/nsf16575/nsf16575.htm>

**Brief Description:** NSF Astronomy and Astrophysics Postdoctoral Fellowships provide an opportunity for highly qualified, recent doctoral scientists to carry out an integrated program of independent research and education. Fellows may engage in observational, instrumental, theoretical, laboratory or archival data research in any area of astronomy or astrophysics, in combination with a coherent educational plan for the duration of the fellowship. The program supports researchers for a period of up to three years with fellowships that may be taken to eligible host institution(s) of their choice. The program is intended to recognize early-career investigators of significant potential and to provide them with experience in research and education that will establish them in positions of distinction and leadership in the community.

**Awards:** Fellowships



**Letter of Intent:** Not required.

**Full Proposal Submission Due Date:** October 12, 2016

**Contacts:**

- Harshal Gupta, 1080N, telephone: (703) 292-5039, email: [hgupta@nsf.gov](mailto:hgupta@nsf.gov)
  - Diana Phan, 1045S, telephone: (703) 292-7866, email: [dphan@nsf.gov](mailto:dphan@nsf.gov)
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**Grant Program: Astronomy and Astrophysics Research Grants (AAG)**

**Agency: National Science Foundation NSF 16-574**

**RFP Website:** <http://www.nsf.gov/pubs/2016/nsf16574/nsf16574.htm>

**Brief Description:** The Astronomy and Astrophysics Research Grants (AAG) Program provides individual investigator and collaborative research grants for observational, theoretical, laboratory, and archival data studies in astronomy and astrophysics. Acceptable research areas include the following: stellar astronomy and astrophysics; the astronomy and astrophysics of our Galaxy; extragalactic astronomy and astrophysics; and cosmology. Proposals for projects and tools that enable and enhance research in those areas are also acceptable. Proposals that are solely or predominantly for the acquisition, analysis, or interpretation of space-based data from NASA-supported missions will be returned without review. Importantly, proposals about the astronomy and astrophysics of our Sun, the rest of our Solar System, and/or Extrasolar Planets will be handled under a companion NSF solicitation, not under the AAG Program.

**Awards:** Standard grants. **Anticipated Funding Amount:** \$35,000,000 per year

**Letter of Intent:** Not required.

**Full Proposal Submission Due Date:** September 15, 2016 - November 15, 2016

**Contacts:**

- James E. Neff, Individual Investigator Programs Coordinator, 1045 S, telephone: (703) 292-2475, email: [jneff@nsf.gov](mailto:jneff@nsf.gov)
  - Richard E. Barvainis, 1045 S, telephone: (703) 292-4891, email: [rbarvai@nsf.gov](mailto:rbarvai@nsf.gov)
  - Harshal Gupta, 1045 S, telephone: (703) 292-5039, email: [hgupta@nsf.gov](mailto:hgupta@nsf.gov)
  - Glen Langston, 1045 S, telephone: (703) 292-4937, email: [glangsto@nsf.gov](mailto:glangsto@nsf.gov)
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**Grant Program: Partnerships for International Research and Education (PIRE)**

**Agency: National Science Foundation NSF 16-571**

**RFP Website:** <http://www.nsf.gov/pubs/2016/nsf16571/nsf16571.htm>

**Brief Description:** Partnerships for International Research and Education (PIRE) is an NSF-wide program that supports international activities across all NSF-supported disciplines. The primary goal of PIRE is to support high quality projects in which advances in research and education could not occur without international collaboration. PIRE seeks to catalyze a higher level of international engagement in the U.S. science and engineering community. International partnerships are essential to addressing critical science and engineering problems. In the global context, U.S. researchers and educators must be able to operate effectively in teams with partners from different national environments and cultural backgrounds. PIRE promotes excellence in science and engineering through international collaboration and facilitates development of a diverse, globally-engaged, U.S. science and engineering workforce.

This PIRE competition will be open to all areas of science and engineering research which are supported by the NSF.

**Awards:** Standard grants. **Anticipated Funding Amount:** \$8,000,000 to \$12,000,000 annually, for all new awards, pending the availability of funds

**Letter of Intent:** Not Required.

**Preliminary Proposals:** Submission of Preliminary Proposals is required. Please see the full text of this solicitation for further information. Deadline: September 14, 2016

**Full Proposal Submission Due Date:** April 24, 2017

**Limit on Number of Proposals per Organization:** 1

A single organization may submit one preliminary proposal as the lead institution. Full proposals will be accepted by invitation only. There is no limit on the number of proposals in which an institution can participate as a partner.

**Limit on Number of Proposals per PI or Co-PI:** There are no restrictions or limits.

**Contacts:**

- Cassandra M. Dudka, telephone: (703)292-7250, email: [PIRE-info@nsf.gov](mailto:PIRE-info@nsf.gov)
- Cassidy Burke, telephone: (703)292-2464, email: [PIRE-info@nsf.gov](mailto:PIRE-info@nsf.gov)

### **NJIT Internal Competition:**

Due to the limit of only one submission per institution, an internal competition has been set up to select NJIT proposal to PIER RFP opportunity. All internal preliminary proposals should be submitted to respective college deans by August 1, 2016. Only one preliminary proposal per college with the recommendation of the college dean must be forwarded to the Office of Research by August 8 for institutional review. Selected preliminary proposal will be announced by August 12 for submission to NSF by the due date of September 14, 2016. NJIT internal preliminary proposal should consist of the following elements:

- **Cover Sheet:** Check the box indicating that this is a preliminary proposal. Provide an informative title that begins with "PIRE:". The proposed PIRE Project Director must be shown as the Principal Investigator.
- **Project Summary:** (1 page maximum) Describe the concept of the proposed PIRE project, including why the international partnership is critical to the project success. Separately address the intellectual merit and broader impacts of the project. The summary should be informative to those working in the same or related field(s), and understandable to a scientifically or technically literate reader.
- **Project Description (6 page maximum):** The Project Description should take the form of a concept paper that clearly outlines the research challenges being addressed or breakthroughs being sought in the proposed PIRE project. The proposed approaches must be innovative and must show clear benefit from international collaboration (for example, expertise, facilities, resources, access to phenomena) and active engagement of US students and junior researchers. Include the following elements:
  - **Administrative Summary** (1 page maximum) should include:
    - title of the project
    - principal investigator
    - length of study (maximum 5 years)
    - estimated total budget (does not need to be itemized)
    - lead institution
    - list of partner institutions and key researchersIf the proposal is to be considered for Additional Funding Opportunity(ies) as described in Section II.D., **explicitly name the funding partner agency(ies)**.
  - **Research Summary** (3 page maximum): Summarize the main ideas and essence of the proposed research. Describe the issue/topic the proposed research is trying to address, the overall goal, approaches, expected outcomes, and the synergy that each participant brings to the project.
  - **Education Summary** (2 page maximum): Describe the goals of the proposed education activities, and how the integration of research and education will



advance the proposed PIRE project in a way that other funding mechanisms cannot. A justification for education programs and activities should be included and described in the context of current knowledge of teaching and learning.

- **References Cited:** Per NSF Grant Proposal Guide instructions.
- **Biographical Sketches:** Required for PIRE Project Director (PI), Co-PIs, and key domestic and international partners. Use the required NSF Biographical Sketch format as specified in the NSF Grant Proposal Guide ([GPG Chapter II.C.2.f](#)).

**Any question on internal preliminary proposal competition should be directed to Atam Dhawan, Vice Provost for Research ([dhawan@njit.edu](mailto:dhawan@njit.edu))**

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### **National Institutes of Health**

**Grant Program: Bold New Bioengineering Methods and Approaches for Heart, Lung, Blood and Sleep Disorders and Diseases (R21)**

**Agency: National Institutes of Health RFA-HL-17-015**

**RFP Website:** <http://grants.nih.gov/grants/guide/rfa-files/RFA-HL-17-015.html>

**Brief Description:** This program is meant to foster discovery- and design-driven bioengineering research ideas that are important across the Institute and that are critical for future hypothesis-generating projects. It is noteworthy that this program emphasizes development, not so much efficacy, of first-generation prototypes. The NHLBI is interested in the development of new ideas for diagnostics, therapeutics, surgical technologies, computational modeling tools, smart biomaterials for self-adjusting implants, and nanotechnologies, as applied to the cardiovascular, pulmonary, non-malignant hematologic, and sleep health mission areas of the Institute.

Topic areas include, but are not limited to:

- Development of: noninvasive and nondestructive 3D imaging methods, including new molecular probes, for *in vivo* real-time monitoring, and techniques for metabolic imaging of disease progression
- Image processing tools and methodology for big data, precision medicine, systems biology and -omics, especially for guiding interventions and patient screening
- Approaches to improve cardiovascular, lung and blood repair and regeneration
- Artificial lungs as a bridge to transplant or for treatment of lung failure
- New platforms for clinical decision support, electronic health records, and mobile health monitoring devices
- New additive solutions and cell/tissue/organ processing and preservation technologies
- New storage bags and/or new processes to enhance blood cell function and survival after storage and transfusion
- New design principles that affect organ-specific transplantation biology and regenerative medicine
- Development of tools/algorithms for objective evaluation of sleep health and disorders
- New tools, methods and technologies that facilitate therapeutic advances and behavioral changes to address problems in energy balance, weight control and obesity
- Tools to better understand biological host sex differences
- Development of artificial oxygen (O<sub>2</sub>) carrier to substitute for banked blood in settings where stored blood is unavailable or undesirable

- Mathematical modeling, and computational simulation techniques to understand mechanisms of HLBS systems, including gene, protein, and metabolic regulatory networks
- Innovative ways to measure tissue microoxygenation
- Nanotechnologies that significantly improve diagnostic and medical devices.

**Awards:** Direct costs are limited to \$275,000 over a two-year period, with no more than \$150,000 in direct costs allowed in any single year.

**Letter of Intent:** 30 days before the application due date

**Deadline:** October 13, 2016; January 10, 2017; May 10, 2017; October 13, 2017; January 10, 2018; May 10, 2018; October 10, 2018; January 10, 2019; May 10, 2019, 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: Air Force Research Laboratory, Materials & Manufacturing Directorate, Functional Materials and Applications (AFRL/RXA) Two-Step Open BAA**

**Agency: Department of Defense AFRL BAA-AFRL-RQKM-2016-0007**

**Website:**

<https://www.fbo.gov/index?s=opportunity&mode=form&id=b376d0a8bb070df62e6393d9f8f3f405&tab=core&cvview=0>

**Brief Description:** Air Force Research Laboratory, Materials & Manufacturing Directorate is soliciting White Papers and potentially technical and cost proposals under this two-step announcement that is open for a period of five (5) years. Functional Materials technologies that are of interest to the Air Force range from materials and scientific discovery through technology development and transition, and support the needs of the Functional Materials and Applications mission. Descriptors of Materials and Manufacturing Directorate technology interests are presented in the context of functional materials core technical competencies and applications. Applicable NAICS codes are 541711 and 541712.

**First Step: WHITE PAPER DUE DATE AND TIME:** White Papers may be submitted at any time upon issuance of this BAA until 18 April 2021, Wright-Patterson AFB, OH Local time.

**Second Step: PROPOSAL DUE DATE AND TIME:** To be provided in response to the Requests for Proposals sent to offerors that submit White Papers considered to meet the needs of the Air Force based upon the review criteria as set forth in Section V of the BAA.

**Awards:** The Air Force anticipates awarding multiple awards for this announcement. Individual awards are anticipated to be in the range of \$100,000 to \$5,000,000 per contract. However, the Air Force reserves the right to award larger or smaller contracts or assistance instruments based upon the white papers received.

**Deadline:** BAA is open until April 18, 2021.

**Agency contact:** White papers shall be submitted to the Contracting Point of Contact (POC): Gary R. Victor, Contract Negotiator, or Whitney L. Foxbower, Contracting Officer, AFRL/RQKMA, Building 45, 2130 8th St., Wright-Patterson AFB, OH 45433-7541

**Grant Program: Long Range Broad Agency Announcement (BAA) for Navy and Marine Corps Science and Technology**

**Agency: Department of the Navy Science and Technology ONR BAA N00014-16-R-BA01**

**RFP Website:** <http://www.onr.navy.mil/~media/Files/Funding-Announcements/BAA/2016/N00014-16-R-BA001.ashx>

**Brief Description:** The Office of Naval Research (ONR) is interested in receiving proposals for Long-Range Science and Technology (S&T) Projects which offer potential for advancement and improvement of Navy and Marine Corps operations. Readers should note that this is an announcement to declare ONR's broad role in competitive funding of meritorious research across a spectrum of science and engineering disciplines. A brief description of the ONR Program Codes and the science and technology thrusts that ONR is pursuing is provided below. Additional information can be found at the ONR website at <http://www.onr.navy.mil/Science-Technology/Departments.aspx>.

**List of Divisions**

- Expeditionary Maneuver Warfare & Combating Terrorism Department (Code 30)
- Command, Control Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) (Code 31)
- Ocean Battlespace Sensing (Code 32)
- The Sea Warfare and Weapons Department (Code 33)
- Warfighter Performance (Code 34)
- Naval Air Warfare and Weapons (Code 35)
- The Marine Corps Warfighting Lab
- Office of Naval Research Global -(ONRG)

**Awards:** Various.

**Deadline:** Full proposals are required for submission. "White Papers" are frequently desired by ONR Program Officers. Offerors should consult the cognizant ONR Program Officer regarding the desirability of "White Paper" submissions or Oral Presentations. The various scientific divisions of ONR are identified at <http://www.onr.navy.mil/en/Science-Technology/Contacts.aspx>.

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**Department of Energy**

**Grant Program: Clean Energy Manufacturing Innovation Institute for Reducing Embodied-energy of Materials and Decreasing Emissions (REMADE) in Manufacturing**

**Agency: Department of Energy DE-FOA-0001594RFP**

**Website:** <https://eere-exchange.energy.gov/default.aspx#FoaIda1ab41d9-cb57-4413-a9da-fbfb23bc5c73>

**Brief Description:** The Office of Energy Efficiency and Renewable Energy (EERE), within the U.S. Department of Energy (DOE), invests in cutting-edge research, development, and demonstration (RD&D) activities focused on sustainable transportation, renewable power, and energy efficiency. In 2013, EERE launched its Clean Energy Manufacturing Initiative (CEMI) with the goal of significantly increasing U.S. manufacturing competitiveness in the production of clean energy products and in domestic manufacturing across the board by increasing industrial energy productivity. EERE's Advanced Manufacturing Office (AMO) plays a key role in executing the mission for CEMI by supporting research and development projects, shared research facilities and technical consortia, and technical assistance programs. AMO establishes Manufacturing Innovation Institutes in the Administration's National Network for Manufacturing Innovation (NNMI) as shared research, development, and demonstration

facilities to overcome cross-cutting challenges related to the manufacturing of clean energy and energy efficiency products, in addition to challenges associated with improving the energy efficiency of the manufacturing sector across the board. This FOA supports the establishment of a Clean Energy Manufacturing Innovation Institute for Reducing Embodied-energy And Decreasing Emissions (REMADE) in Materials Manufacturing. This Institute will enable the development and widespread deployment of key industrial platform technologies that will dramatically reduce life-cycle energy consumption and carbon emissions associated with industrial-scale materials production and processing through the development of technologies for reuse, recycling, and remanufacturing of materials. Solving this enormous and currently unmet challenge could significantly reduce U.S. primary energy usage and greenhouse gas emissions in the manufacturing sector, which represents a particularly challenging sector to decarbonize, and improve U.S. manufacturing competitiveness in the process. The full Funding Opportunity Announcement is posted on the EERE Exchange website at <https://eere-exchange.energy.gov>. Applications must be submitted through the EERE Exchange website to be considered for award. The applicant must first register and create an account on the EERE Exchange website. The Users' guide for applying to Department of Energy, Energy Efficiency and Renewable Energy's Funding Opportunity Announcements through the Exchange website can be found at <https://eere-exchange.energy.gov/Manuals.aspx>. Information on where to submit questions regarding the content of the announcement and where to submit questions regarding submission of applications is found in the full FOA posted on the EERE Exchange website. The Exchange system is currently designed to enforce hard deadlines for Full Application submissions. The APPLY and SUBMIT buttons automatically disable at the defined submission deadlines. The intention of this design is to consistently enforce a standard deadline for all applicants. Applicants that experience 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 (EERE-ExchangeSupport@hq.doe.gov).

**Awards:** Total available funding: \$70,000,000

**Deadline:**

Informational Webinar: 6/29/2016 3:00pm ET

Submission Deadline for Concept Papers: 7/28/2016 5:00pm ET

Submission Deadline for Full Applications: 9/28/2016 5:00pm ET

Expected Submission Deadline for Replies to Reviewer Comments: 10/25/2016 5:00pm ET

Expected Date for EERE Selection Notifications: December 2016

**Agency contact:** To apply to this FOA, applicants must register with and submit application materials through EERE Exchange at <https://eere-Exchange.energy.gov>, EERE's online application portal.

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**NASA**

**Grant Program: ROSES 2016: Mars Data Analysis Program**

**Agency: NASA NNH16ZDA001N-MDAP**

**RFP Website:**

<https://nspires.nasaprs.com/external/solicitations/summary.do?method=init&solId={2CAAAB A3-87C9-3C8E-28D8-33E4BC37ADEC}&path=init>

**Brief Description:** The objective of the Mars Data Analysis Program (MDAP) is to enhance the scientific return from missions to Mars conducted by NASA and other space agencies. These include, but are not limited to, the following missions: Mars Pathfinder (MPF), Mars Global

Surveyor (MGS), Mars Odyssey (MO), Mars Exploration Rovers (MERs), Mars Express (MEX), Mars Reconnaissance Orbiter (MRO), Phoenix (PHX), Mars Science Laboratory (MSL), and Mars Atmosphere and Volatile Evolution (MAVEN). Any proposal may incorporate the investigation of data from more than one mission. Additional information about these missions, as well as references containing preliminary science results, can be found on the Mars Exploration Program (MEP) homepage at: <http://mars.jpl.nasa.gov/>.

MDAP broadens scientific participation in the analysis of mission data sets and funds high-priority areas of research that support planning for future Mars missions. Investigations that use data derived from other sources (e.g., ground-based radar, Hubble) will also be considered. MDAP supports scientific investigations of Mars using publicly available (released) data.

Investigations submitted to this program must demonstrate how the research to be undertaken will directly improve our understanding of open science questions at Mars relevant to current hypotheses. Tasks responsive to this call include 1) data analysis tasks, 2) nondata-analysis tasks that are necessary to analyze or interpret the data, and 3) nondata-analysis tasks that significantly enhance the use or facilitate the interpretation of mission data. These tasks may incorporate theory, modeling, laboratory studies, correlative analyses, and/or other research. Proposals that include nondata-analysis tasks to enhance the use or facilitate the interpretation of mission data must incorporate the results of such tasks in the analysis or interpretation of mission data to be responsive to this call. MDAP does not support field studies or the acquisition of new astronomical observations.

**Award:** Available funds: \$3,000,000

**Proposal Deadline:** MDAP Step 1 Proposal Due: August 26, 2016

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