

NJIT Research Newsletter

Issue: ORN-2016-027

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: Jay Meegoda (PI)

Department: Civil and Environmental Engineering

Grant/Contract Project Title: Remediation of Contaminated Sediments with Ultrasound and Ozone Nano-Bubbles

Funding Agency: NSF

Duration: 09/01/16-08/31/19

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

Department: Center for Solar Terrestrial Research

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

Funding Agency: NASA

Duration: 07/15/16-12/15/17

PI: Eon Lee (PI) and Michael Ehrlich (Co-PI)

Department: Mechanical and Industrial Engineering; School of Management

Grant/Contract Project Title: I-Corps: Point-of-Care Micro Biochip for Cancer Diagnostics

Funding Agency: NSF

Duration: 08/01/16-01/31/17

PI: Xiaoning Ding (PI)
Department: Computer Science
Grant/Contract Project Title: Virtualization of Non-Uniform Memory
Funding Agency: NSF
Duration: 08/01/16-07/31/19

PI: Xin Di (PI), Bharat Biswal (Co-PI), Xiaobo Li (Co-PI) and Suril Gohel (Co-PI)
Department: Biomedical Engineering
Grant/Contract Project Title: High Resolution Observations of Evolution of Magnetic Fields and Flows Associated with Solar Eruptions
Funding Agency: NJDOH
Duration: 07/01/16-06/30/17

PI: Colette Santasieri (PI) Dean Evans (Co-PI)
Department: R&D and Architecture
Grant/Contract Project Title: At Risk: Healthy Coastal Ecosystems to Protect People, Property, and Nature in Historic Greenwich Township, NJ
Funding Agency: NOAA
Duration: 02/01/16-01/31/17

In the News...

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

National Academy of Science: The National Academy of Science (NAS) together with the Robert Wood Johnson Foundation has announced the availability of grants for [*Enhancing Coastal Community Resilience and Well-being in the Gulf of Mexico Region*](#). The program is seeking proposals to build integrative teams, community involvement initiatives, information dissemination, and scientific research. A [webinar](#) outlining the intent of the program and this competition will be held August 11. More information on https://nasevents.webex.com/mw3100/mywebex/default.do?nomenu=true&siteurl=nasevents&service=6&rnd=0.9198992096387996&main_url=https%3A%2F%2Fnasevents.webex.com%2Fec3100%2Feventcenter%2Fevent%2FeventAction.do%3FtheAction%3Ddetail%26confViewID%3D1756894654%26%26EMK%3D4832534b00000002d3095a151a9fc51a93b9522da616a33fcb947612a51152101bc26a20a9d11efd%26%26encryptTicket%3DSDJTSwAAAIPZpP6Lh-L-rgN2bUxTIZYqcBSG-qTbpLlIKsA3B0w2%26%26siteurl%3Dnasevents

NIH: The National Center for Complementary and Integrative Health ([NCCIH](#)) has issued a request for proposals for [Centers of Excellence for Research on Complementary and Integrative Health](#). The mission of the centers will generally be to advance the NCCIH [strategic plan](#) which outlines five major objectives and a number of research priorities. Up to three awards will be made to teams that can address unifying themes that encompass multi-project, multi-disciplinary collaborations. Awards are limited to \$1.25 million per year in direct costs. Read More: <http://grants.nih.gov/grants/guide/pa-files/PAR-16-379.html> ; Also see the Grant Opportunity Alert section.

Brain Research: The Obama administration's BRAIN Initiative "has already catalyzed more than \$1.5 billion in public and private funds," the White House says. Altogether more than \$500 million has come from private sources, including "Howard Hughes Medical Institute, Allen Institute for Brain Science, the Kavli Foundation, the Simons Foundation, GE, GlaxoSmithKline, members of the National Photonics Initiative, as well as patient advocacy organizations and universities." The administration wants to add the Department of Energy to agencies already brain-focused: DARPA, NSF, IARPA, FDA, and NIH.

NASA: Heliophysics explorer missions are principal investigator (PI) led missions that provide frequent flight opportunities for the heliophysics community. NASA has released three solicitations for explorers; a [Small Explorer](#) class mission; Stand Alone Missions of Opportunity; and, a solicitation for a US participating investigator in a non-NASA mission. The cost cap for the Explorer mission is now set at \$165M in FY 2017 dollars, including access to space, but not including any contributions. The sum of contributions of any kind to the entirety of the investigation is limited to one-third (1/3) of the proposed mission cost. Final proposals are due October 14. More on http://www.lpi.usra.edu/planetary_news/2016/07/14/heliophysics-explorer-solicitations-released-on-july-13-2016/

Next-Generation Wireless: The Obama administration announced an Advanced Wireless Research Initiative with spectrum policies and research that it says will, collectively, "accelerate the deployment of a new generation of wireless networks that are up to 100 times faster than today." Advances could include emergency rooms getting real-time video and sensor data from ambulances before the patient arrives; five-second movie downloads; and factory equipment that heals its own flaws. See the White House [fact sheet](#), and a related National Science Foundation [announcement](#). Also: [NSF/Intel Partnership on Information-Centric Networking; Wireless Innovation between Finland and US](#); and [Platforms for Advanced Wireless Research](#).

Encryption Keepers: Data security is among the most important issues faced by the government. In June 2016, the National Academies held a workshop exploring the landscape of data encryption. "Participants at this workshop discussed potential encryption strategies that would enable access to plaintext information by law enforcement or national security agencies with appropriate authority." The talks were mostly about technical issues, but also ranged into broad policy questions. More on the report on <http://www.nap.edu/catalog/23593/exploring-encryption-and-potential-mechanisms-for-authorized-government-access-to-plaintext>

Special Announcement on New Format of NIH Biographical Sketch

The revised NIH proposal/application forms and instructions are now available on the [SF 424 \(R&R\) Forms and Applications page](#) and adjustments have been made to improve their usability. Individual fellowships, R36 dissertation grants, and diversity supplements should use the [Fellowship Application Biographical Sketch Format Page and related pre-doc and post-doc instructions and samples](#), while research grant applications, career development, training grant, and **all other application types** should use the general [Biographical Sketch Format Page and instructions and sample](#).

The new format extends the page limit for the biosketch from four to five pages, and allows researchers to describe up to five of their most significant contributions to science, along

with the historical background that framed their research. Investigators can outline the central findings of prior work and the influence of those findings on the investigator's field. Investigators involved in Team Science are provided the opportunity to describe their specific role(s) in the work. Each description can be accompanied by a listing of up to four relevant peer-reviewed publications or other non-publication research products, including audio or video products; patents; data and research materials; databases; educational aids or curricula; instruments or equipment; models; protocols; and software or netware that are relevant to the described contribution. In addition to the descriptions of specific contributions and documentation, researchers will be allowed to include a link to a full list of their published work as found in a publicly available digital database such as [MyBibliography](#) or [SciENcv](#).

Tool to Help Build the New Biosketch

The Science Experts Network Curriculum Vitae ([SciENcv](#)), which serves as an interagency system designed to create biosketches for multiple federal agencies, will be updated by the end of December to support the new biosketch format and to address some issues found in testing. SciENcv pulls information from available resources making it easy to develop a repository of information that can be readily updated and modified to prepare future biosketches. A [YouTube video](#) provides instructions for using SciENcv website <http://www.ncbi.nlm.nih.gov/sciencv/>. See [FAQs](#) for additional information. See more information on <http://grants.nih.gov/grants/guide/notice-files/NOT-OD-15-032.html>

Events and Announcements

Event: Coastal Community Resilience Research-Practice Grants Webinar

When: Thursday, August 11, 2016 11:30 am

Website:

https://nasevents.webex.com/mw3100/mywebex/default.do?nomenu=true&siteurl=nasevents&service=6&rnd=0.9198992096387996&main_url=https%3A%2F%2Fnasevents.webex.com%2Fec3100%2Feventcenter%2Fevent%2FeventAction.do%3FtheAction%3Ddetail%26confViewD%3D1756894654%26%26EMK%3D4832534b00000002d3095a151a9fc51a93b9522da616a33fcb947612a51152101bc26a20a9d11efd%26%26encryptTicket%3DSDJTSwAAAIPZpP6Lh-L-rgN2bUxTIZYqcBSG-qTbpLlIKsA3B0w2%26%26siteurl%3Dnasevents

Brief Description: Join the webinar for an hour-long presentation and Q&A session to learn more about a new, \$10 million funding opportunity from the Gulf Research Program developed and funded in collaboration with the Robert Wood Johnson Foundation. This funding opportunity is designed to support scientifically-sound research and practice projects that will develop and test information, strategies that can be used by communities to enhance their resilience to the adverse impacts of climate change, severe weather, and major environmental disasters, in ways that also improve well-being. Registration is required to attend the webinar.

Event: NSF Webcast: Partnerships for Innovation: Accelerating Innovation Research - Technology Translation (PFI:AIR-TT)

When: August 3, 2016 1.00 PM-2.00 PM

Website: http://www.nsf.gov/events/event_summ.jsp?cntn_id=139253&org=NSF

Brief Description: The [PFI:AIR-TT program](#) is designed to provide funding to push research discoveries toward commercial reality while engaging faculty and students in entrepreneurial

and market-oriented thinking. The program supports research to overcome technology barriers/knowledge gaps in the translation of fundamental science and engineering discoveries, moving technology out of the lab toward market-valued solutions. It provides an opportunity for researchers to develop a **proof-of-concept, prototype, or scale-up of the prototype** that addresses real-world constraints and provides a competitive value in a potential application space. To learn more about the program and how to make your proposal stand out, join the PFI:AIR-TT webinar. [Register for the PFI:AIR-TT webinar.](#)

Grant Opportunity Alerts

Keywords and Areas Included in Grant Opportunity Alerts:

Internal Faculty Seed Grant Opportunities: 2016 NJIT Faculty Seed Grants; 2016 Rutgers BHI-RUN-NJIT Pilot Grants Program in Neuroscience

NSF: Graduate Research Fellowship Program (GRFP); Wireless Innovation between Finland and US (WiFiUS)); NSF/Intel Partnership on Information-Centric Networking in Wireless Edge Networks (ICN-WEN); Platforms for Advanced Wireless Research (PAWR): Establishing the PAWR Project Office (PPO) (PAWR/PPO); Partnerships for Innovation: Accelerating Innovation Research- Technology Translation (PFI: AIR-TT); NSF/VMware Partnership on Software Defined Infrastructure as a Foundation for Clean-Slate Computing Security (SDI-CSCS); Information and Intelligent Systems (IIS): Core Programs; Secure and Trustworthy Cyberspace (SaTC)

NIH: Center of Excellence for Research on Complementary and Integrative Health (P01); Research Infrastructure Development for Interdisciplinary Aging Studies (R21/R33); Exploratory/Developmental Investigations on Primary Immunodeficiency Diseases (R21)

Department of Defense/US Army/DARPA/ONR: Collaborative Research for Enhanced Academic-TTCP Engagement (CREATE); Military Medical Photonics Program; Peer Reviewed Alzheimer's Research Program: Convergence Science Research Award; Peer Reviewed Alzheimer's Research Program: Translational Research Partnership Award

Department of Energy: Request For Information (RFI): Hydrogen Infrastructure Research, Development, And Demonstration: Identifying Project Priorities To Address Deployment Barriers

NASA: ROSES 2016: Weather and Atmospheric Dynamics

Simon Foundation: Simons Fellows Programs in Mathematics and Theoretical Physics

Grant Opportunities

Internal Faculty Seed Grants

NJIT Faculty Seed Grant Awards – 2016-17

Purpose:

NJIT "2020 Vision" strategic plan targets on substantial increase in academic research and external funding with faculty and student professional development. The purpose of the NJIT Faculty Seed Grant (FSG) initiative is to promote academic research in the core and interdisciplinary areas by providing seed funding to obtain preliminary results or establish

hypotheses for developing future grant proposals for submission to external funding agencies. The FSG initiative specifically seeks seed funding proposals from faculty to launch new initiatives in core and interdisciplinary emerging areas aligned with NJIT strategic tactics to develop critical research mass.

Eligibility and Type of Awards:

NJIT full-time faculty with specific research initiative to enhance the critical mass in key and emerging areas may apply to FSG program for internal funding with a budget of \$7500 per project over the FY17 ending June 30, 2017. Multidisciplinary projects with strong recommendation and justification from College/School Dean will be considered at the funding level of \$10,000 subject to availability of funds. It is expected that 15-20 FSG awards will be made this year. Funding is arranged through the Offices of Research and College/School Deans.

Recipients of FSG as lead faculty are not eligible to receive another FSG award as lead faculty within three years from the last FSG award. Projects funded by FSG are not eligible to receive another FSG as the intent of internal seed funding is to facilitate initial research towards obtaining external funds to pursue research.

Allowable Expenses include Project supplies and small equipment, travel to conferences and/or funding agencies, travel expenses for funding agency people to visit NJIT, student hourly wages. Faculty summer salary, AY release and any stipend are not permitted in the budget.

Deadlines:

CFP Announcement: May 6, 2016

FSG Proposal Due in the Office of College/School Dean: September 1, 2016

College/School Dean Recommendations to Office of Research: September 10, 2016

Announcement of Awards: September 15, 2016

Period of Award: October 1, 2016 – June 30, 2017 (no extension will be available)

Review Process and Criterion:

All Proposals will be reviewed within the College/School to which PI is affiliated. College/School Dean will make the recommendation of top ranked proposals based on the reviews from the College/School review committee, which will be forwarded to the Office of Research for further review and discussion with Deans leading to the announcement of awards.

Review criterion primarily includes the scientific merit of the proposal, and potential of external funding. Additional criterion includes significance of project goals, fit to the NJIT strategic research clusters and emerging trends towards developing critical mass in key areas, justification of internal funding, expected outcomes, and faculty expertise.

Other Requirements: Faculty receiving FSG awards will submit a full proposal to external funding agencies within six months from the end date of the award. They will also participate in the NJIT Faculty Research Showcase and Panel Discussion events in Spring semester.

Required FSG Proposal Format:

The main proposal (sections 2-7 in the required FSG proposal format below) is limited to 5 pages with single spaced 12 point font size. The page limit does not include the cover sheet, budget and budget justification (maximum one page) and list of references (maximum one page). In addition up to 2 pages of biographical sketch and 1 page of current and pending support are required for PI and each investigator. Please see the proposal format guidelines below.

The main proposal should have the following sections:

1. Cover Sheet:
 - Title of the Project
 - Principal and Co-Principal Investigators
 - Department
 - College
 - Date Submitted
 - PI and Co-PI (if multiple investigators) Signatures
2. Abstract (Maximum 250 words; Non-IP for public dissemination):
(Please summarize briefly on):
 - a. Project Goal(s)
 - b. Significance
 - c. Expected Outcomes
 - d. Justification of Internal Funding
3. Specific Objectives
4. Methods and Procedures
5. Evaluation and Deliverables
6. Future Plans
(Describe how the project funding with the deliverables will help in future proposal submissions, enhancing the research synergy, and obtaining external funds)
7. Justification of Internal Funding
(Describe what other funds are available and why additional internal funding is needed)
8. Budget and Budget Justification (maximum 1 page)
9. References (maximum 1 page)
10. Appendix (for PI and each Co-PI/Investigator):
 - a. PI Biographical Sketch (NSF/NIH or Federal Agency Format; maximum 2 pages per investigator)

Other Grant Support (maximum 1 page per investigator; summarize specific project goal(s) for each grant and any overlap with this proposal)

2016 Rutgers BHI-RUN-NJIT Pilot Grants Program in Neuroscience

We are pleased to announce the 2016 pilot grants program in neuroscience at Rutgers University. There are two main objectives of these pilot awards program: (i) to foster **new** collaborative, interdisciplinary research in the neurosciences not only across Rutgers but also NJIT, Kessler Foundation Research Center, East Orange VA Medical Center, and (ii) support pilot experiments that will lead to sustained funding from an external agency (e.g., NIH). There are two categories of pilot grants available; each award is limited to **\$40,000** direct costs and no indirect costs or overhead are allowed. For both type of pilots, collaborative multidisciplinary efforts are encouraged. The deadline for these applications is **5 PM Tuesday, September 6th, 2016**. The two categories of awards are:

(i) Translational neuroscience awards – these must address disease mechanisms, focusing on diagnosis, tools or treatments that involve animal models, clinical studies, or basic neuroscience relevant to a future clinical application. *The clinical relevance must be clearly described in the Research Plan*. These pilots require at least 2 faculty Co-PIs with appointments from different Schools across Rutgers. Formation of teams that integrate basic and clinical themes with a vision of a future translational impact will have preference. **Six** translational pilots are available and are funded by the BHI. Four out of the six BHI-funded pilot awards will only be for applications submitted by faculty co-PIs from RU-New Brunswick and RBHS. The other two can include co-PIs from RUN and NJIT.

(ii) Basic neuroscience awards – These can include a focus on more basic neural mechanisms, or focus on translational neuroscience experiments involving an animal model or clinical studies. These Basic awards must include at least 2 Co-PIs, no more than one of which can be a faculty member at RUN (**Four** awards funded by the RUN Strategic plan fund), or at NJIT (**One** award funded by NJIT).

Format: All applications should be formatted as an R21 NIH style application (**1 page** Specific Aims and **6 pages** for the Research Plan). Also include Literature Cited, Budget, Budget Justification, NIH Biosketches for all Key Personnel/Co-PIs, and Resources and Environment). Within the Research Plan under the Innovation section please describe explicitly how the pilot funding will promote new collaborations and/or new projects. Indicate one or more extramural funding agencies that you plan to target with the current or an expanded version of the proposal (for NIH grants, indicating study sections that could potentially review your proposal would also be helpful). The application should be single-spaced, use font/size Arial 11 with 0.5 inch page margins. *Funded* applicants from last year seeking a second year of funding must include in addition a **1 page** Introduction that gives a report of progress made in Year 1, grants and papers submitted as well as a clear justification for the need of second year of funding. Applicants will need to submit the Rutgers Endorsement form at submission and be compliant with the University's eFCOI requirements. IRB and IACUC approvals will need to be submitted using the Just-In-Time (JIT) approach. These forms and approvals are not required at the time of initial grant application submission on September 6th; however, awardees will have to submit these items before the funds from the grant award are disbursed. We anticipate that the award announcement will be made in November 2016. It is recommended that the applicants prepare and submit the IACUC/IRB applications associated with the pilot grant project well in advance, to the appropriate institutional committees, in order to get these approvals in a timely-fashion.

Please note-the pilot award funds cannot be used for PI and co-PI salaries. Pilot funds can be budgeted for post-doc, student and research technician stipends and salaries. Purchase of equipment costing more than \$5000 needs to be well-justified in the budget. Funds budgeted for purchase of equipment costing more than \$5000 have to be encumbered by June 30th, 2017. All applications must include the Cover page (Title, co-PI's, institutions, etc.) accompanying this announcement. The application should be combined into one PDF document with the Cover page in the front. Submit the SINGLE PDF file to bhi@ca.rutgers.edu **5 PM Tuesday, September 6th, 2016**

All grants will undergo a dual stage review process, organized by the Brain Health Institute in collaboration with RUN and NJIT. They will have an initial external review to judge scientific quality and assign a priority score by external reviewers (similar to NIH study section review). They then will be reviewed by an internal committee (similar to an NIH Council Review) to allocate funds consistent with the long-term strategies for developing neuroscience research at Rutgers and NJIT and the source of pilot funds. One main factor in determining funding will be perceived likelihood that the pilot data generated will lead to external funding.

All pilot awardees will be required to submit a final progress report within 2 months of the end of the award. This report will include publications and grant applications submitted, as well as results obtained and significance of those results. One PI also will be required to orally present results of the studies at the Annual BHI symposium. Awards will be announced by end of November 2016. Additional pilot funding may be available next year; successful applicants from this round can apply for a second year of funding at that point but will compete with new applications as well.

Please contact Gary Aston-Jones or Eldo Kuzhikandathil (bhi@ca.rutgers.edu), Nabil Adam (adam@adam.rutgers.edu) or Atam P Dhawan (atam.p.dhawan@njit.edu) with questions.

Gary Aston-Jones, Ph.D., Director, Brain Health Institute, Rutgers University/Rutgers Biomedical and Health Sciences

Nabil Adam, Ph.D., Vice Chancellor for Research & Collaborations and Founding Director for Rutgers Institute for Data Science, Learning, and Applications, Rutgers University-Newark

Atam P Dhawan, Ph.D., Vice Provost for Research and Development, New Jersey Institute of Technology

National Science Foundation

Grant Program: Graduate Research Fellowship Program (GRFP)

Agency: National Science Foundation NSF 16-588

RFP Website: <http://www.nsf.gov/pubs/2016/nsf16588/nsf16588.htm>

Brief Description: The purpose of the NSF Graduate Research Fellowship Program (GRFP) is to help ensure the vitality and diversity of the scientific and engineering workforce of the United States. The program recognizes and supports outstanding graduate students who are pursuing research-based master's and doctoral degrees in science, technology, engineering, and mathematics (STEM) or in STEM education. The GRFP provides three years of support for the graduate education of individuals who have demonstrated their potential for significant research achievements in STEM or STEM education. NSF especially encourages women, members of underrepresented minority groups, persons with disabilities, veterans, and undergraduate seniors to apply.

Awards: Each Fellowship consists of three years of support during a five-year fellowship period. Currently, NSF provides a stipend of \$34,000 to the Fellow and a cost-of-education allowance of \$12,000 to the graduate degree-granting institution for each Fellow who uses the fellowship support in a fellowship year.

Letter of Intent: Not required.

Full Proposal Submission Due Date: Must be received by 5 p.m. local time of applicant's mailing address):

October 24, 2016: Life Sciences, Geosciences

October 25, 2016: Computer and information Science and Engineering, Engineering, Materials Research

October 27, 2016: Psychology, Social Sciences, STEM Education and Learning

October 28, 2016: Chemistry, Mathematical Sciences, Physics and Astronomy

Contacts:

- Joerg Schlatterer, telephone: (866) 673-4737, email: info@nsfgrfp.org
- Susan Brennan, telephone: (866) 673-4737, email: info@nsfgrfp.org
- Erick Jones, telephone: (866) 673-4737, email: info@nsfgrfp.org
- Gisele Muller-Parker, telephone: (866) 673-4737, email: info@nsfgrfp.org
- Applications, contact: GRF Operations Center, telephone: (866) 673-4737, email: info@nsfgrfp.org

Grant Program: Wireless Innovation between Finland and US (WiFiUS)

Agency: National Science Foundation NSF 16-587

RFP Website: <http://www.nsf.gov/pubs/2016/nsf16587/nsf16587.htm>

Brief Description: The US National Science Foundation (NSF) and the Academy of Finland have signed a Memorandum of Understanding (MOU) on research cooperation in the area of wireless networking. This MOU provides an overarching framework to encourage collaboration between the US and Finland research communities, and sets out the principles by which jointly supported activities may be developed. With this solicitation, NSF's Directorate for Computer and Information Science and Engineering (CISE) and the Academy of Finland continue a joint program in the area of wireless networking, known as Wireless Innovation between Finland and US (WiFiUS) that provides for an international collaboration arrangement whereby US researchers may receive funding from NSF and Finnish collaborators may receive funding from the Academy of Finland to pursue joint projects.

Specifically, this solicitation continues the previous WiFiUS effort (see [NSF 14-563](#)), encouraging new and closer research collaborations, and addressing compelling research challenges on novel frameworks, architectures, protocols, theories, methodologies, and tools for the design and analysis of robust and highly dependable wireless communication systems and networks, particularly in light of the emerging Internet of Things (IoT).

This NSF solicitation parallels an equivalent Academy of Finland solicitation. Proposals submitted pursuant to this solicitation must describe joint research with Finnish counterparts who are requesting funding separately under the Academy of Finland solicitation.

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

Letter of Intent: Not required.

Limit on Number of Proposals per PI or Co-PI: 1

Full Proposal Submission Due Date: October 17, 2016

Contacts:

- Wenjing Lou, Program Director, CNS, 1175, telephone: (703) 292-8950, email: wlou@nsf.gov
 - D. Richard Brown, Program Director, CCF, 1115, telephone: (703) 292-8910, email: ribrown@nsf.gov
-

Grant Program: NSF/Intel Partnership on Information-Centric Networking in Wireless Edge Networks (ICN-WEN)

Agency: National Science Foundation NSF 16-586

RFP Website: <http://www.nsf.gov/pubs/2016/nsf16586/nsf16586.htm>

Brief Description: Next-generation wireless networks, utilizing a wide swath of wireless spectrum and an array of novel technologies in the wired and wireless domains, are on the cusp of unleashing a broadband revolution with promised peak bit rates of tens of gigabits per second and latencies of less than a millisecond. Such innovations will make possible a new set of applications such as autonomous vehicles, industrial robotics, tactile Internet applications, virtual and augmented reality, and dense Internet of Things (IoT) deployments. A key requirement of these applications is fast *information response time* that is invariant as a function of the bandwidth demanded, users/devices supported, and data generated, of which low-latency wireless access time is only one component. Intrinsic security, seamless mobility, scalable content caching, and discovery/distribution services are also essential for such applications. This solicitation seeks unique data network architectures featuring an *information plane using an Information-Centric Networking (ICN) approach* and addressing discovery, movement, delivery, management, and protection of information within a network, along with the abstraction of an underlying *communication plane* creating opportunities for new efficiencies and optimizations across communications technologies that could also address latency and scale requirements.

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

Letter of Intent: September 19, 2016.

Full Proposal Submission Due Date: November 21, 2016

Contacts:

- Thyagarajan Nandagopal, Program Director, NSF CISE/CNS, telephone: (703) 292-8950, email: tnandago@nsf.gov
 - Darleen L. Fisher, Program Director, NSF CISE/CNS, telephone: (703) 292-8950, email: dlfisher@nsf.gov
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Grant Program: Platforms for Advanced Wireless Research (PAWR): Establishing the PAWR Project Office (PPO) (PAWR/PPO)

Agency: National Science Foundation NSF 16-585

RFP Website: <http://www.nsf.gov/pubs/2016/nsf16585/nsf16585.htm>

Brief Description: The **Platforms for Advanced Wireless Research**(PAWR) program aims to support advanced wireless research platforms conceived by the U.S. academic and industrial wireless research community. PAWR will enable experimental exploration of robust new wireless devices, communication techniques, networks, systems, and services that will revolutionize the nation's wireless ecosystem, thereby enhancing broadband connectivity, leveraging the emerging Internet of Things (IoT), and sustaining US leadership and economic competitiveness for decades to come. In order to support the design, development, deployment, and operations of the advanced wireless research platforms, the National Science Foundation's (NSF) Directorate for Computer and Information Science and Engineering (CISE) will support the work of a PAWR Project Office (PPO). Working closely with the wireless research community, the PPO will assume responsibility for design, development, and deployment of a set of advanced wireless research platforms. Upon successful completion of the design of advanced wireless research platforms, and contingent upon support from NSF management, the PPO will proceed to the development and deployment phases with funding provided by NSF as well as a PAWR Industry Consortium. Upon successful deployment of each individual research platform, the PPO may subsequently operate the platform in service to the wireless research community.

Awards: Cooperative agreement. **Anticipated Funding Amount:** \$5,000,000

Pre-Proposal Deadline: September 20, 2016

Full Proposal Submission Due Date: November 23, 2016

Limit on Number of Proposals per Organization: 1

Limit on Number of Proposals per PI or Co-PI: 1

Contacts:

- Thyagarajan Nandagopal, Program Director, CISE/CNS, 1175, telephone: (703) 292-8950, email: tnandago@nsf.gov
- Jack Brassil, Program Director, CISE/CNS, 1175, telephone: (703) 292-8950, email: jbrassil@nsf.gov

Grant Program: Partnerships for Innovation: Accelerating Innovation Research-Technology Translation (PFI: AIR-TT)

Agency: National Science Foundation NSF 16-583

RFP Website: <http://www.nsf.gov/pubs/2016/nsf16583/nsf16583.htm>

Brief Description: The NSF Partnerships for Innovation (PFI) program within the Division of Industrial Innovation and Partnerships (IIP) is an umbrella for two complementary subprograms, Accelerating Innovation Research (AIR) and Building Innovation Capacity (BIC). Overall, the PFI program offers opportunities to connect new knowledge to societal benefit through translational research efforts and/or partnerships that encourage, enhance and accelerate innovation and entrepreneurship. The subject of this solicitation is PFI: AIR-Technology Translation (PFI: AIR-TT). The PFI: AIR-TT solicitation serves as an early opportunity to move previously NSF-funded research results with promising commercial potential along the path toward commercialization. Projects are supported to demonstrate proof-of-concept, prototype, or scale-up while engaging faculty and students in entrepreneurial/innovative thinking.

WEBINAR: A webinar will be held the end of July or early August, 2016 to answer any questions about this solicitation. Details will be posted on the IIP website (<http://www.nsf.gov/eng/iip/pfi/air-tt.jsp>) as they become available.

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

Limit on Number of Proposals per PI or Co-PI: 1

Letter of Intent: September 08, 2016.

Full Proposal Submission Due Date: October 11, 2016

Contacts:

- Barbara H. Kenny, Program Director, telephone: (703) 292-4667, email: bkenny@nsf.gov
-

Grant Program: NSF/VMware Partnership on Software Defined Infrastructure as a Foundation for Clean-Slate Computing Security (SDI-CSCS)

Agency: National Science Foundation NSF 16-582

RFP Website: <http://www.nsf.gov/pubs/2016/nsf16582/nsf16582.htm>

Brief Description: As the digital and physical worlds become increasingly intertwined, the real-world consequences of cyber-threats will become more pronounced. To mitigate foreseeable risks, fundamental advances in security are needed. This program will therefore explore the hypothesis that software defined infrastructure (SDI) enables realistic opportunities to revisit and improve the foundations of end-to-end computing security. SDI is an architectural approach in which compute, storage, and networking resources are virtualized; that is, abstractions of physical capabilities are made available to applications or higher-level services in a way that is decoupled from the underlying physical infrastructure. To date, SDI has been realized most fully in the context of data-centers, but it can also be viewed as a foundation for related emerging contexts such as the Internet of Things (IoT). Novel security properties of SDI have been demonstrated, and meanwhile, compute, storage, and network virtualization techniques are rapidly maturing. An intriguing opportunity is to systematically explore and identify the full potential of SDI as a new foundation for clean-slate computing security (CSCS).

The goal of this joint solicitation between NSF and VMware is to foster novel, transformative, multidisciplinary research that spans systems, networking, and security with the aim of exploring and creating groundbreaking new approaches to security based on the concept of SDI. The program also aims to support a research community committed to advancing research and education at the confluence of SDI-CSCS technologies, and to transition research findings into practice. NSF and VMware will support multiple projects with funding of up to \$3,000,000 each over three years, and it is intended that NSF and VMware will co-fund each project. This NSF/VMware partnership combines CISE's experience in developing and managing successful large, diverse research portfolios with VMware's significant expertise in SDI, virtualization technology, distributed systems, cloud computing, and other aspects of large-scale software infrastructure and infrastructure management.

Awards: Standard grants. **Anticipated Funding Amount:** \$6,000,000

Limit on Number of Proposals per PI or Co-PI: 1

Letter of Intent: Not Required.

Full Proposal Submission Due Date: October 05, 2016

Contacts:

- Darleen L. Fisher, Program Director, CISE/CNS, telephone: (703) 292-8950, email: dlfisher@nsf.gov
 - Mimi McClure, Associate Program Director, CISE/CNS, telephone: (703) 292-8950, email: mmcclure@nsf.gov
-

Grant Program: Information and Intelligent Systems (IIS): Core Programs

Agency: National Science Foundation NSF 16-581

RFP Website: <http://www.nsf.gov/pubs/2016/nsf16581/nsf16581.htm>

Brief Description: CISE's Division of Information and Intelligent Systems (IIS) supports research and education projects that develop new knowledge in three **core programs**:

- The Cyber-Human Systems (CHS) program;
- The Information Integration and Informatics (III) program; and
- The Robust Intelligence (RI) program.

Proposals in the area of computer graphics and visualization may be submitted to any of the three core programs described above.

Proposers are invited to submit proposals in three project classes, which are defined as follows:

- Small Projects - up to \$500,000 total budget with durations up to three years;
- Medium Projects - \$500,001 to \$1,200,000 total budget with durations up to four years; and

Large Projects - \$1,200,001 to \$3,000,000 total budget with durations up to five years.

Awards: Standard grants. **Anticipated Funding Amount:** \$100,000,000

Limit on Number of Proposals per PI or Co-PI: 2

Letter of Intent: Not Required.

Full Proposal Submission Window: October 12, 2016 - October 19, 2016

Contacts:

- William S. Bainbridge, Point of Contact, Cyber-Human Systems (CHS), 1125, telephone: (703) 292-8930, email: wbainbri@nsf.gov
- Ephraim P. Glinert, Point of Contact, Cyber-Human Systems (CHS), 1125, telephone: (703) 292-8930, email: eglinert@nsf.gov
- Tatiana Korelsky, Point of Contact, Robust Intelligence (RI), 1125, telephone: (703) 292-8930, email: tkorelsk@nsf.gov

Grant Program: Secure and Trustworthy Cyberspace (SaTC)

Agency: National Science Foundation NSF 16-580

RFP Website: <http://www.nsf.gov/pubs/2016/nsf16580/nsf16580.htm>

Brief Description: In today's increasingly networked, distributed, and asynchronous world, cybersecurity involves hardware, software, networks, data, people, and integration with the physical world. Society's overwhelming reliance on this complex cyberspace has, however, exposed its fragility and vulnerabilities: corporations, agencies, national infrastructure and individuals have been victims of cyber-attacks. Achieving a truly secure cyberspace requires addressing both challenging scientific and engineering problems involving many components of a system, and vulnerabilities that arise from human behaviors and choices. Examining the fundamentals of security and privacy as a multidisciplinary subject can lead to fundamentally new ways to design, build and operate cyber systems, protect existing infrastructure, and motivate and educate individuals about cybersecurity.

The goals of the Secure and Trustworthy Cyberspace (SaTC) program are aligned with the [Federal Cybersecurity Research and Development Strategic Plan](#) (RDSP) and the [National Privacy Research Strategy](#) (NPRS) to protect and preserve the growing social and economic benefits of cyber systems while ensuring security and privacy. The RDSP identified six areas critical to successful cybersecurity R&D: (1) scientific foundations; (2) risk management; (3) human aspects; (4) transitioning successful research into practice; (5) workforce development; and (6) enhancing the research infrastructure. The NPRS, which complements the RDSP,

identifies a framework for privacy research, anchored in characterizing privacy expectations, understanding privacy violations, engineering privacy-protecting systems, and recovering from privacy violations. In alignment with the objectives in both strategic plans, the SaTC program takes an interdisciplinary, comprehensive and holistic approach to cybersecurity research, development, and education, and encourages the transition of promising research ideas into practice.

The SaTC program welcomes proposals that address cybersecurity and privacy, and draw on expertise in one or more of these areas: computing, communication and information sciences; engineering; economics; education; mathematics; statistics; and social and behavioral sciences. **Proposals that advance the field of cybersecurity and privacy within a single discipline or interdisciplinary efforts that span multiple disciplines are both encouraged.**

Proposals may be submitted in one of the following three project size classes:

- Small projects: up to \$500,000 in total budget, with durations of up to three years;
- Medium projects: \$500,001 to \$1,200,000 in total budget, with durations of up to four years;
- Large projects: \$1,200,001 to \$3,000,000 in total budget, with durations of up to five years.

In addition to the project size classes, proposals must be submitted pursuant to one of the following designations, each of which may have additional restrictions and administrative obligations as specified in this program solicitation.

- CORE: The main focus of the SaTC research program, spanning the interests of NSF's Directorates for Computer and Information Science and Engineering (CISE), Engineering (ENG), Mathematical and Physical Sciences (MPS), and Social, Behavioral and Economic Sciences (SBE). Interdisciplinary proposals are welcomed to CORE.
- EDU: The Education (EDU) designation will be used to label proposals focusing entirely on cybersecurity education. *Note that proposals that are designated as EDU have budgets limited to \$300,000 and durations of up to two years.*
- STARSS: The Secure, Trustworthy, Assured and Resilient Semiconductors and Systems (STARSS) designation will be used to label proposals that are submitted to the joint program focused on hardware security with the Semiconductor Research Corporation (SRC). *The STARSS designation may only be used for Small proposals. This designation has additional administrative obligations.*

TTP: The Transition to Practice (TTP) designation will be used to label proposals that are focused exclusively on transitioning existing research results to practice. *The TTP designation may only be used for Small and Medium proposals.*

Awards: Standard grants. **Anticipated Funding Amount:** \$68,000,000

Letter of Intent: Not Required.

Full Proposal Submission Window: October 12, 2016 - October 19, 2016

Contacts:

- Nina Amla, Program Director, CISE/CCF, 1110, telephone: (703) 292-8910, email: namla@nsf.gov
- Sol Greenspan, Program Director, CISE/CCF, 1115, telephone: (703) 292-8910, email: sgreensp@nsf.gov
- Timothy Hodges, Program Director, MPS/DMS, 1020, telephone: (703) 292-2113, email: thodges@nsf.gov
- Dongwon Lee, Program Director, EHR/DGE, 865, telephone: (703) 292-4679, email: dlee@nsf.gov

National Institutes of Health

Grant Program: Center of Excellence for Research on Complementary and Integrative Health (P01)

Agency: National Institutes of Health PAR-16-379

RFP Website: <http://grants.nih.gov/grants/guide/pa-files/PAR-16-379.html>

Brief Description: The purpose of NCCIH's Centers of Excellence for Research on Complementary and Integrative Health (CERCIH) program is to support synergistic, multidisciplinary, multi-project research programs that have strong potential to significantly advance the mission of NCCIH and address areas of high research priority, as described in its current Strategic Plan [nccih.nih.gov/about/plans]. Basic, mechanistic, and translational approaches are appropriate for the CERCIH, but should not propose clinical trials of efficacy/effectiveness. Studies proposing to use human participants are allowed, and indeed for some complementary health interventions, using human participants may be the only current way to conduct mechanistic studies. The criteria for a CERCIH application are as follows:

1. A clearly defined, unifying central theme to which each project relates and to which each investigator contributes. The CERCIH should be directed toward a range of scientific questions having a central research focus, in contrast to the more narrow thrust of the traditional research project grant (R01). Investigators are strongly encouraged to carefully review NCCIH's Strategic Plan (<http://nccih.nih.gov/about/plans>), which describes its goals and the areas of high research priority that should be encompassed in a CERCIH application.

2. The inter-relationships of projects and collaborations among investigators will yield synergy (i.e., results beyond those achievable if each project were to be pursued independently). A CERCIH should not simply be a collection of R01-level projects; rather, the projects (and optional research cores) should be chosen and designed such that the contributions from each of the projects inform the other projects and result in greater scientific impact than would have occurred had the projects been conducted independently.

3. Leadership of the CERCIH as a whole should have a program director/principal investigator (PD/PI) (or multi-PD/Pis) who is an established, nationally-recognized research scientist and who has the experience, ability, and sufficient time commitment to ensure project completion, quality control, effective administration, and integration of all components of the CERCIH. This person should be an investigator with a strong track record (which includes peer-reviewed research publications) in one or more research areas proposed by the CERCIH, as well as a strong record of successful leadership of large research enterprises. Multiple PD/Pis are allowed.

4. Leadership of each research project (and each core if proposed) should be by an experienced investigator(s) with an established record of productivity and independent funding. The participation of experts in several disciplines or several areas of one discipline should greatly enhance the goals of the CERCIH. All investigators must contribute to, and share in, the responsibilities of fulfilling the program objectives. Generally, it would be inappropriate to have a postdoctoral fellow or junior faculty (e.g., early-stage investigator) as a project leader.

5. At least three projects in the CERCIH need to be judged to have significant scientific merit, and to be innovative, complementary, and deemed to contribute to the central theme of the CERCIH. Although investigators are allowed to submit a given project as a separate R01 application and as part of the CERCIH for review in the same review cycle, this practice is not encouraged. If, however, such a project were to receive impact scores that merit funding of both the R01 and P01 applications, funding of the project in the CERCIH will take precedence, and the

R01 application would be inactivated administratively. All projects should run in parallel and for the duration of the CERCIH funding.

6. An administrative core that is responsible for the overall management of the CERCIH. The administrative core may also include program enrichment activities such as seminars and research workshops, and supporting an External Advisory Committee (EAC).

7. Optionally - one or more research core facilities that provide services to at least two research projects. Each core leader is expected to be scientifically and administratively well qualified, with responsibility for the scientific, administrative, budgetary, and operational aspects of the core and for coordination with the PD/PI and other core/research project directors. A Core can be a laboratory, a facility, a service, or other shared resource that supports other program project components in their activities

Investigators are strongly encouraged to contact NCCIH Scientific/Research staff early in the process to discuss a potential CERCIH application. The discussion could include the choice of funding mechanism, relevance of the topic to NCCIH's strategic plan and research priorities, and the scope and approach of the project. If the requested budget exceeds \$500,000 in direct costs in any grant year, then pre-approval is required (see **Section IV.6 Other Information. Requests of \$500,000 or more for direct costs in any year**). It is expected that most, if not all, applications to this FOA will exceed this \$500,000 threshold, and applicants will need to seek pre-approval to submit an application.

Awards: Application budgets are not limited, but it is strongly recommended that applicants not request a budget of more than \$1,250,000 in direct costs per year. These costs are exclusive of subcontract facilities and administrative costs.

Letter of Intent: 30 days 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: Research Infrastructure Development for Interdisciplinary Aging Studies (R21/R33)

Agency: National Institutes of Health PAR-16-367

RFP Website: <http://grants.nih.gov/grants/guide/pa-files/PAR-16-367.html>

Brief Description: NIA is interested in applications in the following topic areas:

- Development of effective clinical and/or self- management approaches for older patients with multiple chronic conditions (MCCs), and evaluating how to disseminate best practices for MCC management.
- Development of research infrastructure to standardize methods, design and conduct clinical trials of multi-component strategies for treating chronic non-healing ulcerative wounds among predominantly older adults, using a primary outcome of complete wound healing. The approach might take an iterative process to transform current clinical and translational knowledge into well-designed hypothesis-driven interventional studies of modalities that might include but need not be limited to: cellular products, immune modulation, microbiome-modifying therapy, human tissue, animal-derived tissue, biosynthetic products, other strategies including exercise/physical therapy, and nutritional interventions.
- Development and implementation of palliative care strategies delivered early in the course of serious illness (as opposed to the end of life) for older adults.

- Development of research infrastructure to facilitate clinical studies involving geriatric cancer populations.
- Development of a geriatric physical activity collaborative to evaluate effects of physical activity and/or sedentary behavior/physical inactivity on development and progression of chronic diseases in older adults, and to identify mechanisms by which specific degrees of habitual physical activity across the range of levels affect health outcomes.
- Development of research infrastructure to explore multiple interacting mechanisms underlying skeletal muscle responses to aging and exercise and their impact on physical function.
- Enhancing safety of hospitalized older adults through identification and reduction of iatrogenic or secondary hospital-based complications; e.g., medication interactions or dosing errors, delirium, acute kidney injury, falls, bleeding, and cardiac complications.
- Exploration of physiological changes during childhood or in mid-life that contribute to increases in disease incidence with age, and/ or influence health outcomes at subsequent stages of life. Identification of early-life risk factors for adult-onset diseases or potential protective factors contributing to healthy aging are also of particular interest. Approaches may include (but are not limited to) pooling and harmonization of data from studies spanning differing age ranges.
- Identification of putative “juvenile protective factors” against aging-related changes in humans and evaluation of the impact of the loss or diminution of juvenile protective factors during maturation on subsequent age-related changes. The concept of juvenile protective factors is discussed in more detail two related NIA/NICHHD FOAs: [PAR-12-218](#) and [PAR-14-022](#). Interdisciplinary research networks, particularly those involving collaborations between experts in gerontology, postnatal growth/development and other relevant areas are strongly encouraged.
- Comprehensive characterization of effects of aging-related changes (e.g., increases in inflammatory mediators) on the multiple physiologic systems and functions that they affect in humans, and of beneficial and adverse effects of interventions that counter or reverse such changes. Factors that contribute to multiple age-related conditions are of particular interest.
- Combining existing human “omics” databases (e.g., genomics, metabolomics, proteomics) to explore regulatory pathways that may be common to the development of age-related pathologies and to subsequently identify key steps in the pathway(s) that could serve as potential therapeutic targets for health aging.
- Development, testing, and refinement of infrastructure and methodology for conducting large-scale pragmatic intervention trials in different geriatric settings for diseases and conditions associated with aging.
- Development and testing of infrastructure, as well as procedures for standardization and validation, of outcome measures for clinical trials on age-related diseases and conditions. Outcomes should be clinically meaningful and important to older adults; for example, physical function, cognitive function, health-related quality of life, and functional independence. Such outcomes could range from intermediate measures of early effects of interventions, to definitive measures of efficacy, to outcomes that could be used in large-scale pragmatic trials.
- Development and refinement of infrastructure for performing secondary analyses and meta-analyses of datasets and biological samples from completed clinical trials and epidemiologic studies to generate hypotheses for, and to inform designs of, future clinical studies on diseases and conditions associated with aging.

Awards: For the R21 phase, the combined budget for direct costs for a two year project period may not exceed \$275,000. No more than \$200,000 may be requested in any single year. For the R33 phase, application budgets must remain **under** \$500,000 in annual direct costs.

Letter of Intent: Not Required.

Deadline: [Standard dates](#) apply , by 5:00 PM local time of applicant organization. All types of non-AIDS applications allowed for this funding opportunity announcement are due on these dates. Applicants are encouraged to apply early to allow adequate time to make any corrections to errors found in the application during the submission process by the due date.

Grant Program: Exploratory/Developmental Investigations on Primary Immunodeficiency Diseases (R21)

Agency: National Institutes of Health PAR-16-373

RFP Website: <http://grants.nih.gov/grants/guide/pa-files/PA-16-373.html>

Brief Description: This FOA will support a wide range of innovative, exploratory and/or developmental research on primary immunodeficiency diseases. Research areas supported by this FOA include, but are not limited to:

- Identifying the clinical, immunological, genetic and molecular characteristics of genetically determined immunodeficiency diseases;
- Identifying the molecular basis of primary immunodeficiency diseases;
- Advancing our understanding of how a genetic variant results in immunodeficiency;
- Discovering/developing improved diagnostic/newborn screening tools for primary immunodeficiency diseases;
- Performing *ex vivo* studies with human specimens
- Discovering/developing new animal models for primary immunodeficiency diseases; and
- Analyzing clinical data and samples maintained in primary immunodeficiency registries, consortium databases and repositories to address questions relevant to primary immunodeficiency research.

Other research areas supported by this FOA include studies of novel therapeutic approaches for treatment of primary immunodeficiency diseases to:

- Improve and better understand existing treatments of primary immunodeficiency diseases;
- Understand complications associated with primary immunodeficiency diseases;
- Define environmental or other triggers that result in complications in individuals with primary immunodeficiency diseases; and
- Identify and validate biomarkers for primary immunodeficiency diseases.

Research areas NOT appropriate for this FOA include studies of:

- Immunodeficiency resulting from infection (e.g., HIV);
- Immunodeficiency resulting from treatments (e.g., chemotherapy), exposures (e.g., radiation), immunosuppression following transplantation, or autoimmune disorders;
- Immunodeficiency resulting from aging or immaturity; and
- Basic immunologic mechanisms unless related to understanding of primary immunodeficiency diseases.

Awards: Direct costs are limited to \$275,000 over the two-year project period, with no more than \$200,000 in direct costs allowed in any single year.

Letter of Intent: Not Required.

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

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

Department of Defense/US Army/DARPA/ONR

Grant Program: Collaborative Research for Enhanced Academic-TTCP Engagement (CREATE)

Agency: Department of Defense US Army Research Laboratory BAA W911NF-16-R-0027

Website: <http://www.arl.army.mil/www/default.cfm?page=8>

Brief Description: Information has always yielded tactical advantage on the battlefield. In the recent past this has largely been derived from ‘physics-based’ sensors (e.g. radar, electro-optic cameras). Additionally, significant battlefield advantage has been derived from the exploitation of information from ‘human-based’ sources (e.g. HUMINT and SIGINT). Human-based sources are typically less precise, more categorical and have richer content than physics-based sensors and therefore are typically analyzed separately from physics based sensors. Established human-based sources are being augmented with new human-based sources of data (e.g. social media, free text, and webpages) and the proliferation of these lead to a large amount of additional information that could potentially be fused with that from physics based sensors. This drives a requirement for automated fusion methods, which can also mitigate the enormous volume of unstructured data which could otherwise overload human analysts.

The fusion of human-based and physics-based sources will enhance situation awareness for various tasks, including the following:

- Finding targets
- Discriminating targets
- Reacquiring targets
- Prosecuting targets which are actively trying to deceive or manipulate
- Surveillance of patterns
- Understanding interactions between entities

Proposals are sought for research into novel fusion methods to improve situation awareness. These methods must be able to fuse data sourced from physics-based sensors with human-based sources of information.

Awards: ARL intends to issue one award of no more than \$200,000 under this FOA, subject to the availability of funds. An award will be in the form of a grant, and any award will be made by the U.S. Army Contracting Command-Aberdeen Proving Ground Research Triangle Park Division (ACC-APG-RTP Division) on behalf of ARL. The award will have a performance period of 12 months. An award decision will be based on the results of a merit review by scientists and engineers of the participating Agencies.

Deadline: Applications must be received by 4:00 p.m. Eastern Standard Time, September 15, 2016

Grant Program: Military Medical Photonics Program

Agency: Department of the Air Force AFOSR BAA-AFRL-AFOSR-2016-0009

RFP Website:

<https://www.fbo.gov/index?s=opportunity&mode=form&id=3ad881f0d385257cec5dd9da5a629566&tab=core&cvview=0>

Brief Description: The Air Force Office of Scientific Research (AFOSR) seeks unclassified proposals for broad-based research and development aimed at using lasers and other light source technology to develop applications in medicine, photobiology, surgery, and closely related materials sciences, with applications to combat casualty care and other military medical problems. This announcement is primarily directed toward university-based medical institutions; however, all qualified and responsible prime applicants located in the United States are eligible to submit proposals. The highest priority will be extended to proposals up to three (3) years duration to be conducted by teams of physicians, biomedical scientists, physical scientists, and engineers.

The efforts proposed may be basic or applied research, and must have direct relevance to combat casualty care or other military medical priorities. Applicants must demonstrate substantial experience working to further military medical priorities, including transitioning research into clinical practice and working products. Substantial experience collaborating with military medical centers is also a requirement to establish relevance to combat casualty care or other military medical priorities, and facilitate the transition of research results to meet military needs.

Awards: Up to \$3,500,000; Total anticipated funding: \$18,000,000.

Deadline: October 31, 2016

Grant Program: Peer Reviewed Alzheimer's Research Program: Convergence Science Research Award

Agency: Defense Health Program Congressionally Directed Medical Research Programs W81XWH-16-PRARP-CSRA

RFP Website: http://cdmrp.army.mil/funding/pa/16prarpcsra_pa.pdf

Brief Description: Military personnel and other individuals living with traumatic brain injury (TBI) face an increased risk for developing several long-term health problems. These include Alzheimer's-like dementia, aggression, memory loss, depression, and symptoms similar to those of other neurological diseases. The PRARP (formerly the Militarily Relevant Peer Reviewed Alzheimer's Disease Research Program) was initiated in 2011 to address the long-term consequences of TBI as they pertain to Alzheimer's disease (AD) and AD-related dementias (ADRD). The PRARP's mission is devoted to (1) understanding the association between TBI and AD/ADRD, and (2) reducing the burden on affected individuals and caregivers, especially in the military and Veteran communities. Support for the PRARP's mission is anticipated to be delivered by the research community through a combination of mechanistic and preclinical studies.

Awards: The anticipated direct costs budgeted for the entire period of performance will not exceed **\$500,000**. Indirect costs are to be budgeted in accordance with the organization's negotiated rate. No budget will be approved by the Government exceeding **\$500,000** direct costs or using an indirect rate exceeding the organization's negotiated rate.

Deadline: Pre-Application Submission Deadline: 5:00 p.m. Eastern time (ET), August 17, 2016

- **Invitation to Submit an Application:** October 5, 2016
 - **Application Submission Deadline:** 11:59 p.m. ET, November 9, 2016
-

Grant Program: Peer Reviewed Alzheimer's Research Program: Translational Research Partnership Award

Agency: Defense Health Program Congressionally Directed Medical Research Programs

W81XWH-16-PRARP-TRPA

RFP Website: http://cdmrp.army.mil/funding/pa/16prarptrpa_pa.pdf

Brief Description: Military personnel and other individuals living with traumatic brain injury (TBI) face an increased risk for developing several long-term health problems. These include Alzheimer's-like dementia, aggression, memory loss, depression, and symptoms similar to those of other neurological diseases. The PRARP (formerly the Militarily Relevant Peer Reviewed Alzheimer's Disease Research Program) was initiated in 2011 to address the long-term consequences of TBI as they pertain to Alzheimer's disease (AD) and AD-related dementias (ADRD). The PRARP's mission is devoted to (1) understanding the association between TBI and AD/ADRD, and (2) reducing the burden on affected individuals and caregivers, especially in the military and Veteran communities. Support for the PRARP's mission is anticipated to be delivered by the research community through a combination of mechanistic and preclinical studies.

The intent of the TRPA is to create an avenue for partnerships between clinicians and research scientists to address a translational research problem or question in a manner that would be unachievable through separate efforts. The research impact will benefit the military, Veteran, and civilian communities. To this end, the PRARP has identified FY16 TRPA Overarching Challenges and Focus Areas by which the intent of this mechanism can be facilitated (see Section I.B., FY16 PRARP TRPA Overarching Challenges and Focus Areas). These should be carefully considered as part of the application process.

The TRPA supports the development of partnerships between independent, faculty level (or equivalent) investigators. ***One partner must be a research scientist and the other must be a clinician, and it should be clear that both have had equal intellectual input into the design of the research project. Either partner may submit as the Principal Investigator. The other partner will be designated as the Partnering PI. Multi-institutional partnerships are encouraged but not required.*** As part of the application, the team must demonstrate experience in both TBI and AD/ADRD research.

The proposed study must include clearly stated plans for interactions between the partners. The plans must include communication, decision-making, allocation of resources, coordination of research progress and results, and sharing of data among both partners and organizations participating in the project. Additionally, multi-institutional applications must provide an intellectual property plan to resolve potential intellectual and material property issues and to remove institutional barriers that might interfere with achieving high levels of cooperation to ensure the successful completion of this award.

While the TRPA is intended to move basic research toward clinical application, it does not support clinical trials. Research projects may include preclinical studies in animal models, human subjects, and human anatomical substances.

Awards: The anticipated total costs budgeted for the entire period of performance will not exceed **\$1.3M**. Indirect costs are to be budgeted in accordance with the organization's negotiated rate. No budget will be approved by the Government exceeding **\$1.3M** total costs or using an indirect rate exceeding the organization's negotiated rate.

Deadline: Pre-Application Submission Deadline: 5:00 p.m. Eastern time (ET), August 17, 2016

- **Invitation to Submit an Application:** October 5, 2016
- **Application Submission Deadline:** 11:59 p.m. ET, November 9, 2016

Department of Energy

Grant Program: Request For Information (RFI): Hydrogen Infrastructure Research, Development, And Demonstration: Identifying Project Priorities To Address Deployment Barriers

Agency: Department of Energy DE-FOA-0001626

Website: <https://eere-exchange.energy.gov/Default.aspx#FoalId54195796-ebc7-46d5-b21a-9be30f9e5533>

Brief Description: The U.S. Department of Energy's (DOE) Fuel Cell Technologies Office (FCTO) seeks input on priority areas that will advance deployment of hydrogen fueling stations and delivery infrastructure and input on barriers and activities to pursue in both the near and longer-term. FCTO is a key component of the DOE's Energy Efficiency and Renewable Energy (EERE) portfolio. EERE seeks to provide clean, affordable, and reliable energy from diverse domestic resources, along with benefits of increased energy security, reduced criteria pollutants, and reduced greenhouse gas emissions; hydrogen and fuel cells are an important part of EERE's portfolio. FCTO funds activities addressing the barriers hydrogen fueling stations face today, including renewable hydrogen fuel cost, station and equipment cost, station reliability and performance, codes and standards development, manufacturing needs, and outreach and training needs.

This is a critical time for the hydrogen market in the United States, as we are in the early commercial phases for hydrogen fuel cell electric vehicles (FCEVs), hydrogen fueling stations and delivery infrastructure, and renewable production technologies. With independent data from over 6 million miles of driving FCEVs and over 163,000 kg of hydrogen dispensed, FCTO is obtaining important information to help identify key areas for further research and development and has identified specific challenges facing hydrogen infrastructure and fueling station components. FCTO is committed to enabling successful initial commercial deployment of hydrogen fueling stations. In the recent past, FCTO has focused on increasing public-private partnerships to address immediate technical challenges, an effort that will continue through the Hydrogen Fueling Infrastructure Research and Station Technology (H2FIRST) project. H2FIRST leverages capabilities at the national laboratories to address the technology challenges related to hydrogen fueling stations. Outside of infrastructure projects funded through H2FIRST, FCTO is looking to identify other strategic research, development, and demonstration pathways to lower station costs and increase the overall utilization of hydrogen in the market.

FCTO wants to address some of the barriers facing hydrogen infrastructure research, development, and deployment in the near and longer-term, listed below. Note that the following list does not include all of the barriers, but it does include many identified by both FCTO and stakeholders during an Annual Merit Review Session. Barriers to be addressed through this RFI include:

- Station and equipment cost
- Station footprint
- Station reliability and performance
- Station availability
- Lack of a domestic supply chain for equipment parts, and
- Lack of real-world business cases for FCEVs and hydrogen stations.

The purpose of this RFI is to solicit feedback from industry, academia, research laboratories, government agencies, and other stakeholders on the research, development, and demonstration topics.

Contact Information:

- FY16FCTONeedsandStrategies@ee.doe.gov

- For responses to this RFI.
 - ExchangeHelp@hq.doe.gov
-

NASA

Grant Program: ROSES 2016: Weather and Atmospheric Dynamics

Agency: NASA NNH16ZDA001N-WEATHER

RFP Website:

<https://nspires.nasaprs.com/external/solicitations/summary.do?method=init&solId={AAC58B3E-A615-5360-DEEF-077B6F08ACE9}&path=init>

Brief Description: The study of weather includes an analysis of the dynamics of the atmosphere and its interaction with the oceans and land. Improvement of our understanding of weather processes and phenomena is crucial in gaining an understanding of the Earth system.

The Weather Focus Area (http://science.nasa.gov/media/medialibrary/2015/08/03/Weather_Focus_Area_Workshop_Report_2015.pdf) is primarily designed to apply NASA scientific remote sensing expertise to the problem of obtaining accurate and globally distributed measurements of the atmosphere and the assimilation of these measurements into research and operational weather forecast models in order to improve and extend U.S. and global weather prediction. NASA-sponsored research continues to gain new insight into weather and extreme-weather events by the utilization of data obtained from a variety of satellite platforms (TRMM, GPM, Aqua, Terra, Suomi NPP, CloudSat, CALIPSO, SMAP and CYGNSS) and hurricane-themed tropical field experiments.

This solicitation is aimed at enabling improved predictive capability for certain weather and extreme weather events in four specific areas. The first one relates to the use of past NASA airborne data from a long series of field experiments, and in conjunction with satellite data and numerical models, to better understand tropical cyclone genesis and intensity changes. The second one is focused on utilizing the soon to be launched CYclone Global Navigation Satellite System (CYGNSS) satellite mission for the study of the Madden-Julian oscillation (MJO) and tropical cyclones. The third one offers research opportunities related to the upcoming availability of a Lightning Imaging Sensor (LIS) on the International Space Station (ISS), and, the last one describes an opportunity related to the conduct of a field experiment in 2017.

Award: Available funds: \$3.2M first year and ~\$2.7M in year 2 and year 3.

Proposal Deadline: Weather16 NOIs Due: July 15, 2016; Proposals Due: September 15, 2016

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Simon Foundation

Simon Foundation

Grant Program: Simons Fellows Programs in Mathematics and Theoretical Physics

Agency: Simon Foundation

RFP Website: <https://www.simonsfoundation.org/funding/funding-opportunities/mathematics-physical-sciences/simons-fellow-program/>

Brief Description: The Simons Foundation is proud to announce the 2016 Simons Fellows in [Mathematics](#) and [Theoretical Physics](#).

The Simons Foundation Division for Mathematics and the Physical Sciences invites applications for the Simons Fellows Programs in both Mathematics and Theoretical Physics. The Fellows Programs provide funds to faculty for up to a semester long research leave from classroom teaching and administrative obligations. Such leaves can increase creativity and provide intellectual stimulation. The goal of the Simons Fellows Program is to make it easier to take such leaves, or to extend sabbatical leaves by an extra half year. Grants awarded will be restricted to sabbatical-eligible faculty who wish to use the grant for the purpose of extending a single term sabbatical leave to a full academic year.

Award: A Simons Fellowship in Mathematics supports a research leave, defined as a continuous period of one or more academic semesters or quarters free from classroom teaching and academic administration. The program provides salary replacement for up to 50 percent (up to a maximum of \$100,000) of the Fellow's current academic-year salary, whether normally paid over nine or twelve months, and up to \$10,000 for expenses related to the leave. The award is to be administered through the Fellow's home institution, which will receive an additional 20 percent overhead on allowable expenses. Any unspent funds at the end of the research leave must be returned to the Simons Foundation.

A Simons Fellowship in Theoretical Physics supports a research leave, defined as a continuous period of one or more academic semesters or quarters free from classroom teaching and academic administration. The program provides salary replacement for up to 50 percent (up to a maximum of \$100,000) of the Fellow's current academic-year salary, whether normally paid over nine or twelve months, and up to \$25,000 for expenses related to the leave. The award is to be administered through the Fellow's home institution, which will receive an additional 20 percent overhead on allowable expenses. Any unspent funds at the end of the research leave must be returned to the Simons Foundation.

Fellowships may begin no earlier than July 1, 2017, and the foundation-supported portion of the leave must be completed by August 31, 2018.

Proposal Deadline:

- [Simons Fellows in Mathematics RFA](#) (Application Deadline: September 29, 2016)
- [Simons Fellows in Theoretical Physics RFA](#) (Application Deadline: September 29, 2016)

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