NJIT Research Newsletter

Issue: ORN-2016-037

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/

NJIT Panel Discussion Event
NSF Faculty Early Career Development Program (CAREER) Award
October 10, 2016; 2.00 PM – 3.30 PM
112 Eberhardt Hall

Faculty Panel
Tara Alvarez, Professor, Biomedical Engineering
Andrei Sirenko, Professor, Physics
Alexei Khalizov, Assistant Professor, Chemistry and Environmental Sciences
Casey Diekman, Assistant Professor, Mathematical Sciences
Moderator: Atam Dhawan, Vice Provost for Research

Scope: The NSF Faculty CAREER proposal submission guidelines will be presented with best practices. All panelists, past and current winners of NSF Faculty CAREER Award will share their experiences on preparation and submission of NSF CAREER proposal. All eligible faculty members are invited to participate in the panel discussion and ask questions about successful proposal submission to panelists.

***NSF Faculty CAREER Award*:** The Faculty Early Career Development (CAREER) Program is a Foundation-wide activity that offers the National Science Foundation's most prestigious awards in support of junior faculty who exemplify the role of teacher-scholars through outstanding research, excellent education and the integration of education and research within the context of the mission of their organizations. Such activities should build a firm foundation for a lifetime of leadership in integrating education and research. NSF encourages submission of CAREER proposals from junior faculty members at all CAREER-eligible organizations and especially encourages women, members of underrepresented minority groups, and persons with disabilities to apply.

Grant Opportunity Alerts

Keywords and Areas Included in the Grant Opportunity Alert Section Below

NJIT: Undergraduate Research and Innovation (URI) Student Seed Grants
NSF MRI Internal Competitions
NSF: Advanced Biomanufacturing of Therapeutic Cells (ABTC); IUSE / Professional Formation of Engineers: REvolutionizing engineering and computer science Departments (IUSE/PFE: RED); Data Infrastructure Building Blocks (DIBBs); Critical Resilient Interdependent Infrastructure Systems and Processes FY17 (CRISP); Transdisciplinary Research in Principles of Data Science Phase I (TRIPODS); Smart and Connected Communities (S&CC)
NIH: NINDS Institutional Center Core Grants to Support Neuroscience Research (P30)); BRAIN Initiative: Research Career Enhancement Award for Investigators to Build Skills in a Cross-Disciplinary Area (K18); NINDS Ruth L. Kirschstein National Research Service Award (NRSA) for Training of Postdoctoral Fellows (F32); BRAIN Initiative: New Concepts and Early-Stage Research for Large-Scale Recording and Modulation in the Nervous System (R21);
Department of Defense/US Army/DARPA/ONR: DoD USAMRMC FY17 Broad Agency Announcement for Extramural Medical Research; Biological Technologies
Department of Energy: Notice of Intent To Issue Funding Opportunity Announcement No. DE-FOA-0001647
NASA: ROSES 2016: Planetary Science Deep Space SmallSat Studies
GSK: Drug Discovery Challenge

Recent Research Grant and Contract Awards

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

PI: Kurt Rohloff (PI)
Department: Ying Wu College of Computing
Grant/Contract Project Title: RAMPARTS: Rapid Machine-learning Processing Applications and Reconfigurable Targeting of Security
Funding Agency: IARPA
Duration: 08/31/16-08/30/18

PI: Namas Chandra (PI) and Maciej Skotak
Department: Center for Injury, Biomechanics, Material and Medicine
Grant/Contract Project Title: Fundamental Understanding of the Mechanism of Cavitation, One of Possible Mechanisms of Blast-Induced Traumatic
Funding Agency: ONR
Duration: 06/01/15-05/31/18

PI: Jumin Shi (PI)
Department: School of Management
Grant/Contract Project Title: Repositioning Empty Containers for Agricultural Container Logistics
Funding Agency: USDA
Duration: 09/19/16-09/30/18

PI: Tara Alvarez (PI)
Department: Biomedical Engineering
Grant/Contract Project Title: Research and Development Proposal for Virtual Reality Vision Screening and Therapy Device
Funding Agency: Foundation Venture Capital Group
Duration: 09/16/16-09/15/17

In the News…

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

NSF: In FY 2017, NSF is continuing a program aligned with the Improving Undergraduate STEM Education (IUSE) framework: *REvolutionizing engineering and computer science Departments*. This funding opportunity enables engineering and computer science departments to lead the nation by successfully achieving significant sustainable changes necessary to overcome longstanding issues in their undergraduate programs and educate inclusive communities of engineering and computer science students prepared to solve 21st century challenges. Now, the NSF has released solicitation NSF 17-501 entitled IUSE / Professional Formation of Engineers: REvolutionizing engineering and computer science Departments (IUSE/PFE: RED). The solicitation seeks to implement sustainable changes in STEM education in these departments by engaging and incentivizing the entire faculties over an extended period. Awards from $1-2 million will be made for five-year periods. The Principal Investigator must be a department chair/head (or equivalent) to establish institutional accountability. Letters of intent are required and are due by December 9. See more information below in the Grant Opportunities Alert section.

BioPreferred Program: Biobased products have emerged as an important substitute for petroleum based products and thus could have a major environmental benefit. In addition, the bioproduct industry could have a substantial impact on the rural economy. For the past two years, the Department of Agriculture's BioPreferred Program, created by the 2002 Farm Bill, has quantified the economic impact of biobased products. This year's update reports that the bioproducts industry grew substantially from 2013 to 2014 adding 220,000 jobs and $24 billion. In 2014 accounted for a total economic impact of $393 Billion and 4.2 Million Jobs. The bioproduct industry directly supports 1.53 million jobs, with each job in the industry responsible for generating 1.76 jobs in other sectors.
More information on:
https://www.biopreferred.gov/BioPreferred/faces/pages/AboutBioPreferred.xhtml

Revitalizing American Manufacturing: On Manufacturing Day 2016, the Administration takes stock of the progress that the U.S. manufacturing sector has made over the nearly eight years since President Obama took office. When President Obama took office, the auto industry—the heartbeat of the American manufacturing sector—was on the brink of collapse and the economy was on the verge of the next Great Depression. After saving the auto industry, the Obama Administration set out to methodically reinvest in the capabilities that manufacturing needs to succeed. Since early 2010, U.S. manufacturing has added over 800,000 direct jobs, and companies from around the world again see the United States as the best place for new investment in the most leading-edge manufacturing across industries. Although the

manufacturing sector has faced challenges over the last two years, many have incorrectly argued that U.S. manufacturing competitiveness is weak or that manufacturing will return to a path of decline similar to what we faced from 2000 to 2009. Despite these bumps in the road, the reality is that the foundation for manufacturing expansion is as strong as it has been in decades. To take advantage of that underlying strength, policy choices matter to ensure the U.S. continues to reinvigorate the capabilities that are required for a successful and innovative manufacturing sector. The program "has grown from one institute with 65 members to a network of nine institutes and over 1,300 members" backed by over $600 million in federal money matched by "over $1.3 billion in non-federal investment" and 250 research projects. The report cited the University of Southern California and the Advanced Manufacturing Partnership for Southern California as having "built partnerships between industry, government, and academia focused on strengthening the aerospace and defense sector." Full report is available on the website:
https://www.whitehouse.gov/sites/whitehouse.gov/files/images/NEC_Manufacturing_Report_October_2016.pdf

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Webinar and Events

Event: NSF Webinar: Next Steps in the SBIR/STTR Process
When: October 11, 2016 2.00 PM – 3.00 PM
Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=189823&org=NSF
Brief Description: Join this webinar to learn more about the Small Business Innovation Research / Small Business Technology Transfer (SBIR/STTR) program and how to secure seed funding for your startup. SBIR Senior Program Director Ben Schrag will walk you through the process and answer questions. **Advance registration is required; register via WebEx.**
Prior to the webinar, feel free to browse our YouTube channel and proposal submission guide for a detailed step-by-step guide to assist applicants through the Phase I proposal submission process.

The NSF Small Business Innovation Research / Small Business Technology Transfer (SBIR/STTR) program seeks to transform scientific discovery into societal and economic benefit by catalyzing private sector commercialization of technological innovations. The program increases the incentive and opportunity for startups and small businesses to undertake cutting-edge, high-quality scientific research and development. We provide grants in phases: a proof-of-concept / feasibility grant (6-12 months, $225k) can potentially be followed by a longer development grant (2 years, $750k).
Contacts: Ben Schrag, (703) 292-8323, bschrag@nsf.gov

Event: IEEE Webinar: Simulation of RF Interference in Electronics
When: October 13, 2016 5.00 PM – 7.00 PM
Website: https://www.cst.com/events/webinars/2016-10-13-rfinterference?sc_camp=A0CCD3BCA65C448B975B5EE6EBB8D41A&utm_source=ieee&utm_medium=email&utm_content=rfinterference&utm_campaign=2016series
Brief Description: Connected electronic devices like tablets, laptops, smartphones and the diverse ecosystem of IOT products typically implement multiple RF systems. For example, a smartphone nowadays will offer connectivity for WiFi at 2.4 and 5 GHz, Bluetooth, GPS, GSM, NFC and multiple LTE Bands that need to coexist on a platform with a small form factor. Furthermore, the current generation of data buses like USB 3.0 and DDR4 run at high clock

speeds with harmonics spreading well into the RF frequencies. This poses a significant challenge to the designers of such devices as the tight integration can lead to interference between these systems. Such RF interference results in performance degradation of these systems and is not acceptable. In the first part of this webinar, we will demonstrate how a full wave 3D simulation can be used to analyze the coupling between different RF systems, antennas and digital signal lines. The analysis will be performed on a model of a modern, realistic mobile phone with a high complexity. The coupling data will then be used to estimate the possible RF interference using a completely new product: The CST interference tool. In this new system-level tool, RF systems can be defined to analyze inter-system coupling. The analysis delivers the possible occurrence of RF interference at a glance. The interference tool is fully integrated into the CST STUDIO SUITE, making it easy to run different scenarios and test mitigation strategies after the detection of possible interference.

Speaker: Andreas Barchanski received an MSc in physics in 2003 and a PhD in numerical EM in 2007 from the Technical University Darmstadt. He has joined CST's HQ in Darmstadt in 2007 as an application engineer. Since 2012 he is Market Development Manager for EMC. Besides EMC, his main interest lies in simulation of various electronic systems ranging from high speed digital to power electronics. He has authored over 50 scientific papers, journal articles and presentations on numerical EM and its application.

Event: NSF I-Corps Webinar
When: November 1, 2016 2:00 PM - 4:00 PM
Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=189701&org=NSF
Brief Description: Curious about the NSF I-Corps program? Join this monthly introductory webinar to learn more about I-Corps Teams and how they contribute to the innovation ecosystem. During the webinar, I-Corps program directors will answer questions about I-Corps and provide updated information about I-Corps contacts, the curriculum, important dates and other aspects of I-Corps. The I-Corps curriculum provides real-world, hands-on, immersive learning about what it takes to successfully transfer knowledge into products and processes that benefit society. The webinar will be held the **first Tuesday of every month at 2:00 p.m., eastern time.**

To join the webinar:

1. Access the audio portion of the webinar by phone by calling (800) 857-5210 (for callers inside the U.S.) OR (210) 234-7080 (for callers outside the U.S.). The participant passcode is 3192939#
2. Access the visual portion of the webinar (WebEx meeting number 746 732 125):
   - Go to https://nsf.webex.com/nsf/j.php?MTID=m37c931eeb5d7a1c32e62c41975c03a2b
     - Note: Firefox is recommended for Mac users.
     - If requested, enter your name and email address.
     - If a password is required, enter the meeting password: I_C0rp5!
     - Click "Join".
   - You may download the slides in advance--download the slides (PDF, 1.6 MB).

For assistance joining the meeting, go to https://nsf.webex.com/nsf/mc and click "Support" on the left navigation bar.
Note for first-time users: To check whether you have the appropriate players installed for UCF (Universal Communications Format) rich media files, go to https://nsf.webex.com/nsf/systemdiagnosis.php.

Event: 2016 NRT (NSF Research Traineeship) Program Information Webinar
When: November 9, 2015 1:00 AM to December 9, 2016 11:45 PM
Website: http://www.nsf.gov/events/event_summ.jsp?cntn_id=134466&org=NSF
Brief Description: The NSF Research Traineeship program (NRT) prerecorded informational videos to provide an overview of the NRT program and describe the key similarities and differences of the two tracks. The aim of these webinars was to give potential principal investigators information on program announcement 16-503 by emphasizing several key features and requirements of each track.

Grant Opportunities

Undergraduate Research

Grant Program: Undergraduate Research and Innovation (URI) Student Seed Grants
Phase-1 URI Student Seed Grants
Phase-2 URI Student Seed Grants
Funding: NJIT Internal and External Grants
Website: http://centers.njit.edu/uri/programs/index.php
Description: NJIT 2020 Vision strategic plan emphasizes providing undergraduate students an outstanding education with opportunities to have research and innovation experience as part of their NJIT learning enabling them to succeed and assume leadership roles in our society.

The Undergraduate Research and Innovation (URI) program has evolved as a significant part of the education and research experience at NJIT. The URI website http://centers.njit.edu/uri/ summarizes undergraduate research and innovation opportunities and provides information about resources and competitions. The proposal can be submitted for Track-1 Technology/Product Development and Innovation, or Track-2 Application based Research.

We are pleased to announce the Undergraduate Research and Innovation Student Grant (URISG) program to provide students Phase-1 Student Seed Grants of $500 per project to pursue preliminary research or demonstrate an initial proof-of-concept/prototypes. URI Phase-2 Student Seed Grants provides up to $3,000 per project to pursue research further or develop a complete prototype. Funds can only be used to order project supplies and prototyping through the Office of Undergraduate Research and Innovation. Phase-2 proposals may be submitted by former Phase-1 Student Seed Grant winners who have completed Phase-1 work, as well as new students who have a research or product idea that has shown the preliminary proof of concept, market assessment or application-based research to establish the need, significance and basic approach. The student may prepare URI Student Phase-1 or Phase-2 Seed Grant proposals following the template with format and guidelines on the URI website http://centers.njit.edu/uri/programs/index.php
Awards: Expected number of awards: 15-20
Up to $500 for Phse-1 Student Seed Grants
Up to $3,000 for Phase-2 Student Seed Grants
Deadline: All proposals should be submitted by **October 13, 2016** following the URI Phase-1 or Phase-2 Student Project Grant Proposal Format Guidelines posted on the URI website http://centers.njit.edu/uri/programs/index.php. Students working with a faculty member may submit URI Student Seed Grant proposals in the required format to Ms. Angela Retino at aretino@njit.edu. All proposals will be reviewed to select up to 15 finalist proposals for

presentation to the External Advisory Board in the URI Workshop to be held on October 20, 2016 at the Campus Center Ballroom A from 2.00 PM to 5.00 PM.
Contact Information: Any questions about the program or Information Session should be directed to Ms. Angela Retino, URI Program Administrator, at aretino@njit.edu.

Internal Competition: National Science Foundation

NSF Limited Submission and Internal Competition Through College/School Deans:

Grant Program: NSF Major Research Instrumentation Program: (MRI)
Agency: National Science Foundation NSF 15-504
RFP Website: http://www.nsf.gov/pubs/2015/nsf15504/nsf15504.htm
Brief Description: The Major Research Instrumentation Program (MRI) serves to increase access to shared scientific and engineering instruments for research and research training in our Nation's institutions of higher education, not-for-profit museums, science centers and scientific/engineering research organizations. The program provides organizations with opportunities to acquire major instrumentation that supports the research and research training goals of the organization and that may be used by other researchers regionally or nationally.

Each MRI proposal may request support for the acquisition (Track 1) or development (Track 2) of a single research instrument for shared inter- and/or intra-organizational use. Development efforts that leverage the strengths of private sector partners to build instrument development capacity at MRI submission-eligible organizations are encouraged.
The MRI program assists with the acquisition or development of a shared research instrument that is, in general, too costly and/or not appropriate for support through other NSF programs. The program does not fund research projects or provide ongoing support for operating or maintaining facilities or centers.

The instrument acquired or developed is expected to be operational for regular research use by the end of the award period. For the purposes of the MRI program, a proposal must be for *either* acquisition (Track 1) *or* development (Track 2) of a single, well-integrated instrument. The MRI program does not support the acquisition or development of a suite of instruments to outfit research laboratories or facilities, or that can be used to conduct independent research activities simultaneously.

Instrument acquisition or development proposals that request funds from NSF in the range $100,000-$4 million may be accepted from any MRI-eligible organization. Proposals that request funds from NSF less than $100,000 may also be accepted from any MRI-eligible organization for the disciplines of mathematics or social, behavioral and economic sciences and from non-Ph.D.-granting institutions of higher education for all NSF-supported disciplines.

Cost-sharing of precisely 30% of the total project cost is required for Ph.D.-granting institutions of higher education and for non-degree-granting organizations. Non-Ph.D.-granting institutions of higher education are exempt from cost-sharing and cannot include it. National Science Board policy is that voluntary committed cost sharing is prohibited.
Limited Number of Submission: Three (3) as described below. (Expected from the previous solicitation NSF 15-504)
If three proposals are submitted, at least one of the proposals must be for instrument development (i.e., no more than two proposals may be for instrument acquisition).
Awards Range: $100,000-$4 million
Letter of Intent: Not Required

Submission Deadline: January 11, 2017

Internal Competition Deadline to College Dean's Office: November 1, 2016: Please submit up to 5 pages pre-proposal white paper to your respective Dean by November 1, 2016 in the following format. College level reviews will be conducted by Deans to forward recommendations for up to 2 proposals to the Office of Research and Development by November 7, 2016. The final selection will be announced by November 14. The following format for the pre-proposal is suggested which is consistent with actual proposal guidelines and review criterion:

1. Cover Sheet (not counted in the page limit):
   a. Title of the project proposal
   b. Track Type: I or II
   c. PI name and affiliation and contact information
   d. Co-PIs name and affiliation
   e. Additional users or any consortium information, if applicable
   f. Date submitted to College Dean
2. Project Summary
   Each proposal must contain a summary of the proposed project not more than one page in length. The Project Summary consists of an overview, a statement on the intellectual merit of the proposed activity, and a statement on the broader impacts of the proposed activity.
3. Proposal Description covering the subsections (a)-(e) as posted on the previous RFP on http://www.nsf.gov/pubs/2015/nsf15504/nsf15504.htm with the section:
   (a) Information About the Proposal/Instrument
   (b) Research Activities to be Enabled
   (c) Description of the Research Instrumentation and Needs
   (d) Impact on Research and Training Infrastructure
   (e) Management Plan

   For Instrument Development Proposals (Track-II)

   The section (a) to (e) should be organized to address the following (as described in the RFP):
   (a) Describe the design, construction and commissioning phases of the project, including the work breakdown structure of the project activities (i.e., activities broken into tasks). Include a description of parts and materials, the estimated deliverables, associated timelines and the anticipated cost of each activity.
   (b) Describe the technical expertise that is needed, and that will be available, to execute each activity. Describe the organization of the project staff and methods of assessing performance. For each member of the team, include a description of the responsibilities and explain why a given position is necessary for the completion of the design and construction of the new instrument.
   (c) Assess the risks associated with each activity and describe potential methods for mitigating the risks, and for re-analyzing and modifying the project plan to keep it within scope, schedule and budget.
   (d) Include plans for making the instrument design readily available to other researchers, for example by means of publications, by transferring the technology to other U.S. academic, industrial, or government laboratories, and/or by commercializing the instrument.

(e) Include plans for the long-term operations and maintenance of the instrument, including procedures for allocating time on the instrument if appropriate. Describe plans for attracting and supporting new users and information on anticipated usage and downtime if appropriate. Inclusion of a letter documenting the performing organization's commitment to operations and maintenance is required as a supplemental document.

4. Preliminary Budget and Budget Justification; and Required Cost-Sharing
5. Brief biographical sketch of PI with a brief description of current and previous accomplishments.

For pre-proposal review, the NSF MRI proposal review criterion may be used to help faculty receive some feedback on their proposals that may be helpful for their final or future proposal submissions. The merit review criterion as posted on the RFP is:

- **Intellectual Merit:** The Intellectual Merit criterion encompasses the potential to advance knowledge; and
- **Broader Impacts:** The Broader Impacts criterion encompasses the potential to benefit society and contribute to the achievement of specific, desired societal outcomes

Instrument Acquisition Proposals.

The extent of shared use of the instrumentation for research and/or research training. Whether the management plan includes sufficient infrastructure and technical expertise to allow effective usage of the instrument; and provides the organization's commitments for operations and maintenance.

Whether the request for operations and maintenance is justified and reasonable in magnitude. If direct support for student involvement in operations and maintenance is requested, reviewers will be asked to evaluate the involvement in terms of both instrument needs and training the next generation of instrumentalists. Plans for using the new or enhanced research capability in research and research training. For instrument acquisition proposals of $1 million or above, proposals should address the potential impact of the instrument on the research community of interest and at the regional or national level when appropriate.

Instrument Development Proposals:

The appropriateness of submission as a development (Track 2) proposal.

The adequacy of the management plan. Does the plan have a realistic, detailed schedule? Are mechanisms in place to deal with potential risks?

The availability of appropriate technical expertise to design and construct the instrument. If direct support for student involvement in development efforts is requested, reviewers will be asked to evaluate the involvement in terms of both project needs and training the next generation of instrumentalists.

The appropriateness of the cost of the new technology.

The need for development of a new instrument. Will the proposed instrument enable enhanced performance over existing instruments, or new types of measurement or information gathering? Is there a strong need for the new instrument in the larger user community?

National Science Foundation

Grant Program: Advanced Biomanufacturing of Therapeutic Cells (ABTC)
Agency: National Science Foundation NSF 17-502
RFP Website: https://www.nsf.gov/pubs/2017/nsf17502/nsf17502.htm
Brief Description: In recent years, somatic cells as therapeutic agents have provided new treatment approaches for a number of pathological conditions that were deemed untreatable, or

difficult to treat. Several successful cell therapies using T cells have been demonstrated for cancer and autoimmune diseases, while stem cell therapies have given relief for heart disease and stroke. Hundreds of clinical trials are ongoing to examine efficacy of cell therapies for a variety of other diseases including diabetes, Alzheimer's, Parkinson's, and Crohn's disease. Production of therapeutic cells is currently expensive and, therefore, cost prohibitive for the large number of people who might benefit from these treatments. The overarching goal of this Advanced Biomanufacturing of Therapeutic Cells (ABTC) solicitation is to catalyze well-integrated interdisciplinary research to understand, design, and control cell manufacturing systems and processes that will enable reproducible, cost-effective, and high-quality production of cells with predictable performance for the identified therapeutic function.
Awards: Standard Grants. Anticipated funding amount: $5,000,000
Letter of Intent: Not Required
Preliminary Proposal Submission Due Date: January 04, 2017
Full Proposal Submission Due Date: April 17, 2017
Contacts:

- Carol Lucas, telephone: (703) 292-4608, email: carlucas@nsf.gov
- Rajakkannu Mutharasan, telephone: (703) 292-4608, email: rmuthara@nsf.gov

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Grant Program: IUSE / Professional Formation of Engineers: REvolutionizing engineering and computer science Departments (IUSE/PFE: RED)
Agency: National Science Foundation NSF 16-501
RFP Website:
https://www.nsf.gov/pubs/2017/nsf17501/nsf17501.htm?WT.mc_id=USNSF_25&WT.mc_ev=click
Brief Description: In FY 2017, NSF is continuing a program aligned with the Improving Undergraduate STEM Education (IUSE) framework: *REvolutionizing engineering and computer science Departments*. This funding opportunity enables engineering and computer science departments to lead the nation by successfully achieving significant sustainable changes necessary to overcome longstanding issues in their undergraduate programs and educate inclusive communities of engineering and computer science students prepared to solve 21st century challenges.

In 2014, ENG launched an initiative, the *Professional Formation of Engineers* (PFE), to create and support an innovative and inclusive engineering profession for the 21st century. At the same time, in 2014, NSF launched the agency-wide Improving Undergraduate STEM Education (IUSE) framework, which is a comprehensive effort to accelerate improvements in the quality and effectiveness of undergraduate education in all STEM fields. The RED program was first offered in FY 2015 as a PFE initiative aligned with the IUSE framework. Additional programs have been created within the IUSE framework across NSF, such as the IUSE: EHR program within EHR.

Even as demographic and regional socio-economic factors affect engineering and computer science departments in unique ways, there are certain tenets of sustainable change that are common across institutions. For instance, the development and engagement of the entire faculty within a department are paramount to the process, and faculty must be incentivized. Departmental cultural barriers to change and to inclusion of students *and* faculty from different backgrounds must be identified and addressed. Finally, coherent technical and professional threads must be developed and woven across the four years, especially (1) in the core technical courses of the middle two years, (2) in internship opportunities in the private and public sectors,

and (3) in research opportunities with faculty. These and other threads aim to ensure that students develop deep knowledge in their discipline more effectively and meaningfully, while at the same time building their capacities for 21st century and "T-shaped" professional skills, including design, leadership, communication, understanding historical and contemporary social contexts, lifelong learning, professional ethical responsibility, creativity, entrepreneurship, and multidisciplinary teamwork. It is expected that, over time, the awardees of this program will create knowledge concerning sustainable change in engineering and computer science education that can be scaled and adopted nationally across a wide variety of academic institutions. The research on departmental change that results from these projects should inform change more broadly across the STEM disciplines.

Note: The RED program is offered in alignment with the NSF-wide undergraduate STEM education initiative, *Improving Undergraduate STEM Education (IUSE)*. More information about IUSE can be found in the Introduction of this solicitation. The IUSE/PFE: RED program will hereafter be referred to as RED.

Prospective PIs are encouraged to consider the IUSE: EHR program for projects that are outside the scope of RED (see https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505082). Specifically, the Institutional and Community Transformation (ICT) track promotes innovative approaches to using research to catalyze change that addresses challenges across and within institutions (institutional transformation), as well as within and across specific disciplines (community transformation).

Prospective PIs are strongly discouraged from submitting identical or substantially similar proposals to RED and IUSE: EHR.

Awards: Standard Grants. Anticipated funding amount: $11,900,000

Letter of Intent: December 09, 2016

Full Proposal Submission Due Date: January 18, 2017

Contacts:

- Kamau Bobb, Program Director, Division of Computer and Network Systems, Directorate for Computer & Information Science & Engineering, telephone: (703) 292-4291, email:kbobb@nsf.gov
- Elliot Douglas, Program Director, Division of Engineering Education and Centers, Directorate for Engineering, telephone: (703) 292-7051, email: edouglas@nsf.gov

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Grant Program: Data Infrastructure Building Blocks (DIBBs)

Agency: National Science Foundation and National Institutes of Health NSF 17-500

RFP Website: https://www.nsf.gov/pubs/2017/nsf17500/nsf17500.htm

Brief Description: The NSF vision for a Cyberinfrastructure Framework for 21st Century Science and Engineering (CIF21) considers an integrated, scalable, and sustainable cyberinfrastructure to be crucial for innovation in science and engineering (seewww.nsf.gov/cif21). The Data Infrastructure Building Blocks (DIBBs) program is an integral part of CIF21. The DIBBs program encourages development of robust and shared data-centric cyberinfrastructure capabilities, to accelerate interdisciplinary and collaborative research in areas of inquiry stimulated by data.

DIBBs investments enable new data-focused services, capabilities, and resources to advance scientific discoveries, collaborations, and innovations. The investments are expected to build upon, integrate with, and contribute to existing community cyberinfrastructure, serving as evaluative resources while developments in national-scale access, policy, interoperability and sustainability continue to evolve.

Effective solutions will bring together cyberinfrastructure expertise and domain researchers, to ensure that the resulting cyberinfrastructure address researchers' data needs. The activities should address the data challenges arising in a disciplinary or cross-disciplinary context. (Throughout this solicitation, 'community' refers to a group of researchers interested in solving one or more linked scientific questions, while 'domains' and 'disciplines' refer to areas of expertise or application.) The projects should stimulate data-driven scientific discoveries and innovations, and address broad community needs, nationally and internationally.

This solicitation includes two classes of science data pilot awards:

1. **Early Implementations** are large "at scale" evaluations, building upon cyberinfrastructure capabilities of existing research communities or recognized community data collections, and extending those data-focused cyberinfrastructure capabilities to additional research communities and domains with broad community engagement.
2. **Pilot Demonstrations** address advanced cyberinfrastructure challenges across emerging research communities, building upon recognized community data collections and disciplinary research interests, to address specific challenges in science and engineering research.

Prospective PIs should be aware that DIBBs is a multi-directorate activity, and are encouraged to submit proposals that have broad, interdisciplinary interest. PIs are encouraged to refer to NSF core program descriptions, Dear Colleague Letters, and recently posted initiatives on directorate and divisional home pages to gain insight into the priorities for the relevant area(s) of science and engineering in which their proposals may be responsive. **It is strongly recommended that a prospective PI contact a Cognizant Program Officer in the organization(s) closest to the major disciplinary impact of the proposed work to ascertain whether the the scientific focus and budget of the proposed work are appropriate for this solicitation**.

Awards: Standard Grants. Anticipated funding amount: $25,000,000

Letter of Intent: Not Required

Full Proposal Submission Due Date: January 03, 2017

Contacts:

- Amy Walton, Program Director, CISE/ACI, telephone: (703) 292-8970, email:DIBBsQueries@nsf.gov
- Robert Chadduck, Program Director, CISE/ACI, telephone: (703) 292-8970, email:DIBBsQueries@nsf.gov
- Anita Nikolich, Program Director, CISE/ACI, telephone: (703) 292-8970, email:DIBBsQueries@nsf.gov

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Grant Program: Critical Resilient Interdependent Infrastructure Systems and Processes FY17 (CRISP)

Agency: National Science Foundation NSF 16-618

RFP Website: https://www.nsf.gov/pubs/2016/nsf16618/nsf16618.htm

Brief Description: Critical infrastructures are the mainstay of our nation's economy, security and health. These infrastructures are interdependent. They are linked to individual preferences and community needs. For example, the electrical power system depends on the delivery of fuels to power generating stations through transportation services, the production of those fuels depends in turn on the use of electrical power, and those fuels are needed by the transportation

services. Social networks, interactions, and policies can enable or hinder the successful creation of resilient complex adaptive systems.

The goals of the **Critical Resilient Interdependent Infrastructure Systems and Processes** (CRISP) solicitation are to: (1) foster an interdisciplinary research community of engineers, computer and computational scientists and social and behavioral scientists, that creates new approaches and engineering solutions for the design and operation of infrastructures as processes and services; (2) enhance the understanding and design of interdependent critical infrastructure systems (ICIs) and processes that provide essential goods and services despite disruptions and failures from any cause, natural, technological, or malicious; (3) create the knowledge for innovation in ICIs so that they safely, securely, and effectively expand the range of goods and services they enable; and (4) improve the effectiveness and efficiency with which they deliver existing goods and services. These goals lead to the following specific objectives for this solicitation:

- To create new knowledge, approaches, and solutions to increase resilience, performance, and readiness in ICIs. The solutions may emerge primarily from advances in cyber (computing, information, computational, sensing and communication), engineering, or societal (behavioral, economic, organizational) elements of ICIs, although proposals must integrate research across all three elements.
- To create theoretical frameworks and multidisciplinary models of ICIs, processes and services, capable of analytical prediction of complex behaviors, in response to system and policy changes.
- To develop frameworks to understand interdependencies created by the interactions between the physical, the cyber (computing, information, computational, sensing and communication), and social, behavioral and economic elements of ICIs. These could include, but are not limited to, software frameworks for modeling and simulation using advanced cyber infrastructures, management, monitoring and real-time control of interdependent ICIs and novel software engineering methodologies.
- To study socioeconomic, political, legal and psychological obstacles to improving ICIs and identifying strategies for overcoming those obstacles.
- To undertake the creation, curation or use of publicly accessible data on infrastructure systems and processes, whether in the context of explanation, prediction or modeling.

Awards: Standard Grants. Anticipated funding amount: $22,900,000
Letter of Intent: Not Required
Full Proposal Submission Due Date: February 08, 2017
Contacts:

- Richard J. Fragaszy, telephone: (703) 292-7011, email: rfragasz@nsf.gov
- Bruce Hamilton, telephone: (703) 292-7066, email: bhamilto@nsf.gov
- David J. Mendonca, telephone: (703) 292-7081, email: mendonca@nsf.gov

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Grant Program: Transdisciplinary Research in Principles of Data Science Phase I (TRIPODS)
Agency: National Science Foundation NSF 16-615
RFP Website: https://www.nsf.gov/pubs/2016/nsf16615/nsf16615.htm
Brief Description: *Transdisciplinary Research In Principles Of Data Science* (TRIPODS) aims to bring together the statistics, mathematics, and theoretical computer science communities to develop the theoretical foundations of data science through integrated research and training activities. Phase I, described in this solicitation, will support the development of small

collaborative Institutes. Phase II (to be described in an anticipated future solicitation, subject to availability of funds) will support a smaller number of larger Institutes, selected from the Phase I Institutes via a second competitive proposal process. All TRIPODS Institutes must involve significant and integral participation by all three of the aforementioned communities.
Awards: Standard Grants. Anticipated funding amount: $12,000,000
Letter of Intent: Submission of Letters of Intent is required. Please see the full text of this solicitation for further information. January 04, 2017 - January 19, 2017
Full Proposal Submission Due Date: March 01, 2017 - March 15, 2017
Contacts:

- Nandini Kannan, Program Director, Division of Mathematical Sciences, telephone: (703) 292-8104, email: nakannan@nsf.gov
- Tracy Kimbrel, Program Director, Division of Computing and Communication Foundations, telephone: (703) 292-8910, email: tkimbrel@nsf.gov

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Grant Program: Smart and Connected Communities (S&CC)
Agency: National Science Foundation NSF 16-610
RFP Website: https://www.nsf.gov/pubs/2016/nsf16610/nsf16610.htm
Brief Description: Cities and communities in the U.S. and around the world are entering a new era of transformational change, in which their inhabitants and the surrounding built and natural environments are increasingly connected by smart technologies, leading to new opportunities for innovation, improved services, and enhanced quality of life. The goal of this Smart & Connected Communities (S&CC) solicitation is to support strongly interdisciplinary, integrative research and research capacity-building activities that will improve understanding of smart and connected communities and lead to discoveries that enable sustainable change to enhance community functioning. Unless stated otherwise, for the purposes of this year's solicitation, communities are physical, geographically-defined entities, such as towns, cities, or incorporated rural areas, consisting of various populations, with a governance structure and the ability to engage in meaningful ways with the proposed research.

Successful S&CC projects are expected to pursue research and research capacity-building activities that integrate multiple disciplinary perspectives and undertake meaningful community engagement, and to include appropriate and robust evaluation plans for assessing activities and outcomes. To meet the multidisciplinary criterion, proposals must meaningfully integrate across both social and technological research dimensions. In this solicitation, the social dimensions reflect areas typically included in the portfolios of the NSF's Directorates for Social, Behavior, and Economic Sciences (SBE) and Education and Human Resources (EHR), while the technological dimensions reflect disciplinary areas typically included in the portfolios of the Directorates for Computer and Information Science and Engineering (CISE) and Engineering (ENG). Proposals may also pursue integration with other disciplines as needed, including but not limited to those typically encompassed in the portfolio of the NSF's Directorate for Geosciences (GEO). Successful proposals are also expected to include appropriate community engagement as defined further in the solicitation.
Awards: Standard Grants. Anticipated funding amount: $18,000,000
Letter of Intent: Not Required
Full Proposal Submission Due Date:

- **Preliminary Proposal Due Date(s)** ***(required)*** (due by 5 p.m. submitter's local time): November 30, 2016
- **Full Proposal Deadline(s)** (due by 5 p.m. submitter's local time): February 16, 2017

Contacts:

- David Corman, Program Director, CISE/CNS, telephone: (703) 292-8754, email:dcorman@nsf.gov
- Nicholas Anderson, Program Director, GEO/AGS, telephone: (703) 292-4715, email:nanderso@nsf.gov
- Radhakishan Baheti, Program Director, ENG/ECCS, telephone: (703) 292-8339, email:rbaheti@nsf.gov
- Wendy Nilsen, Program Director, CISE/IIS, telephone: (703) 292-2568, email: wnilsen@nsf.gov

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National Institutes of Health

Grant Program: NINDS Institutional Center Core Grants to Support Neuroscience Research (P30)
Agency: National Institutes of Health RFA-NS-17-011
RFP Website: http://grants.nih.gov/grants/guide/rfa-files/RFA-NS-17-011.html
Brief Description: This Funding Opportunity Announcement (FOA) invites applications for Center Core Grants to support the NINDS mission, which is to seek fundamental knowledge about the brain and nervous system, and to use that knowledge to reduce the burden of neurological disease. In pursuit of this mission, NINDS supports basic, translational, and clinical research on the normal and diseased nervous system. For an overview of NINDS see http://www.ninds.nih.gov/about_ninds/ninds_overview.htm.

The Centers will provide cutting edge resources (cores) and facilities to investigators who have existing NINDS-funded research projects, and to other investigators pursuing research consistent with the NINDS mission. The Centers should enhance the effectiveness of ongoing research and facilitate new research directions. They should provide services that would be impractical for individual labs, either because of ongoing requirements for specialized expertise, or because of associated economies of scale. Their support is intended to increase resource accessibility and to capitalize on potential synergies that would not be attained through independent funding of separate research projects.

Program Requirements

To be responsive to this Funding Opportunity Announcement, an institution or consortium must meet the following program requirements.
Cores and Core services must be specifically targeted to neuroscience research. Resources (cores) that are general to biomedical sciences are not appropriate for this FOA, unless a specific unmet neuroscience research need can be demonstrated.

Centers must support at least six Program Director(s)/Principal Investigator(s) (PD(s)/PI(s)) from one or more organizations who hold qualifying NINDS-funded research projects. Qualifying projects include R01 and other awards of similar scale and duration of at least four years, as specified in Section III.3. Additional Information on Eligibility.

Service provided by the Cores to the qualifying projects must be for activities within the scope of the projects' funded Specific Aims, although support from the Core will not duplicate existing funding for projects' activities.

All of the qualifying investigators must be significant users of the Center, and no more than 25% of the effort from a single Core facility can be devoted to projects directed by any single investigator.

The qualifying projects are necessary, but must not be the only projects supported by the Cores. It is expected that the Cores will serve a wide base of neuroscience investigators beyond the qualifying projects.

A Core must provide services that are not available to investigators elsewhere either off-site (e.g., commercially) or via other facilities at the host institution or one or more consortium institution(s). Exceptions to this requirement may be allowable in infrequent cases, but only if the Core adds substantial and demonstrable value both for potential users and for support of the NINDS mission.

Core facilities and personnel should be focused on a service mission, with a goal of meeting the needs of a variety of potential users. Awards will not support independent research that is separate from the goal of service to Center users. Center personnel may receive partial funding from other sources for independent research, but their effort towards Center activities must be documented as described below.

In infrequent cases, technology development may be appropriate for a given Core, but only insofar as this development enhances the service to Center users. Applicants considering technology development efforts are encouraged to contact NINDS Scientific/Research staff to discuss alternative grant mechanisms.

Awards: Applications may request up to $300,000 per year in direct costs.
Letter of Intent: January 14, 2017
Deadline: February 14, 2017, by 5:00 PM local time of applicant organization. All types of non-AIDS applications allowed for this funding opportunity announcement are due on this date.
Applicants are encouraged to apply early to allow adequate time to make any corrections to errors found in the application during the submission process by the due date.

Grant Program: BRAIN Initiative: Research Career Enhancement Award for Investigators to Build Skills in a Cross-Disciplinary Area (K18)
Agency: National Institutes of Health RFA-DA-17-022
RFP Website: http://grants.nih.gov/grants/guide/rfa-files/RFA-DA-17-022.html
Brief Description: This funding opportunity announcement (FOA) invites applications for mentored career enhancement (K18) awards in research areas that are highly relevant to the NIH BRAIN Initiative. This career enhancement program will support development of research capability for the BRAIN Initiative, with specific emphasis on cross-training independent investigators in a substantively different area of neuroscience, neuroethics, or in a quantitative and physical discipline (e.g., physics, chemistry, engineering, computer science, mathematics); and vice versa, cross-training independent investigators trained in a quantitative or physical discipline proposing to gain in-depth training in a high-priority area of neuroscience. The research project conducted under this K18 should enhance the candidate's ability to significantly contribute to or lead projects that investigate questions central to the goals of the BRAIN Initiative. Eligible candidates are independent investigators at any faculty rank or level.
Awards: The BRAIN Initiative intends to fund an estimate of 7 awards, corresponding to a total of $2M, for FY 2017.
Letter of Intent: March 14, 2017
Deadline: April 14, 2017, by 5:00 PM local time of applicant organization. All types of non-AIDS applications allowed for this funding opportunity announcement are due on this date.
No late applications will be accepted for this Funding Opportunity Announcement.
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: NINDS Ruth L. Kirschstein National Research Service Award (NRSA) for Training of Postdoctoral Fellows (F32)
Agency: National Institutes of Health PAR-16-458
RFP Website: http://grants.nih.gov/grants/guide/pa-files/PAR-16-458.html
Brief Description: The purpose of this award is to support outstanding scientific training of highly promising postdoctoral candidates with outstanding mentors. Candidates are eligible to apply for support from this program from ~12 months prior to the start of the proposed postdoctoral position to within 12 months after starting in postdoctoral position. Based on the early timeframe of eligibility, and the discouragement of inclusion of preliminary data, this NINDS F32 seeks to foster early, goal-directed planning and to encourage applications for bold and/or innovative projects by the candidate that have the potential for significant impact. Applications are expected to incorporate strong training in quantitative reasoning and the quantitative principles of experimental design and analysis. Support by this program is limited to the first 3 years of a candidate's activity in a specific laboratory or research environment, so as to further encourage early fellowship application and timely completion of "mentored training" of the postdoctoral candidate in a single environment.
Awards: Individuals may receive up to 3 years of aggregate Kirschstein-NRSA support at the postdoctoral level, including any combination of support from institutional training grants (e.g., T32) and an individual fellowship award. For this FOA, support will be provided only during the first 3 years of cumulative postdoctoral experience in any one particular laboratory or research environment. For example, if an award is made 18 months after the start of the postdoctoral position in the fellowship laboratory or research environment, the award duration will be for a maximum of 18 months.
Letter of Intent: Not Required
Deadline: Standard dates apply , by 5:00 PM local time of applicant organization. All types of non-AIDS applications allowed for this funding opportunity announcement are due on these dates. Applicants are encouraged to apply early to allow adequate time to make any corrections to errors found in the application during the submission process by the due date.

Grant Program: BRAIN Initiative: New Concepts and Early-Stage Research for Large-Scale Recording and Modulation in the Nervous System (R21)
Agency: National Institutes of Health RFA-EY-17-001
RFP Website: http://grants.nih.gov/grants/guide/rfa-files/RFA-EY-17-001.html
Brief Description: This FOA is related to sections II.2, II.3, and II.4 from the BRAIN 2025 Report. These three recommendations call for accelerated development of new large-scale recording technologies and tools for neural circuit manipulation. These new technologies and approaches will provide unprecedented opportunities for exploring how the nervous system encodes, processes, utilizes, stores, and retrieves vast quantities of information. A better understanding of this dynamic neural activity will enable researchers to seek new ways to diagnose, treat, and prevent brain disorders.

Achieving these goals requires the ability to record simultaneously from thousands or tens-of- thousands of neurons contributing to the dynamic activity in a neural circuit. The relevant activity may be in clusters of cells packed closely together or may be in widely distributed circuits. Current microelectrode and imaging technologies are limited in the number of cells from which activity can be isolated and sampled simultaneously, by the size or location of the area to be sampled, by the depth of penetration, and by the invasiveness of the technique that might prohibit their use in human experimentation. Non-invasive technologies suitable for

use in humans are currently limited in spatial resolution and temporal dynamics, as well as in their reflection of on-going electrical activity in circuit elements. This FOA seeks entirely new ideas, concepts and/or approaches from physics and engineering, and biology, for how these limitations might be overcome to enable increased recording capabilities on the scale of one or more orders of magnitude beyond that of current technology.

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

Applications are expected to propose the development of ideas in the earliest stages for entirely new approaches for large-scale neural recording and/or manipulation of neural activity. Such ideas could encompass unique and innovative combinations of existing technology that create a synergistic result. An important goal is to stimulate new thinking and concepts for accelerating development of novel technologies that break current barriers to neural recording and/or manipulation. In addition to experimental approaches, this FOA may support early-stage testing using calculations, simulations, computational models, or other mathematical techniques for demonstrating that the signal sources and/or measurement technologies are theoretically capable of meeting the demands of large-scale recording or manipulation of circuit activity in humans or animal models. The support might also be used for building and testing phantoms, prototypes, in-vitro or other bench-top models in order to validate underlying theoretical assumptions in preparation for future FOAs aimed at proof-of concept testing in animal models. Preliminary data is not expected for ideas in these very early stages of development.

Applications are expected to propose research that will explore ideas in their earliest stages of development in order to be responsive to goals and objectives of this FOA. Applications proposing work that does not meet the goals of this FOA will be deemed non-responsive and will not be reviewed. Some examples of non-responsive applications might be: i) further development of existing technology; ii) hypothesis-testing; iii) validation and/or refinement of current technology; or iv) development of analytical methods to be applied to existing technology and/or data.

The technologies that would ultimately evolve from these new approaches should be compatible with experiments in humans and/or behaving animals, and should dramatically increase the capacity for recording and manipulating neural activity in order to enable experiments that are currently not possible.

Applications from individuals not usually associated with neuroscience research or teams that cross boundaries forming interdisciplinary collaborations capable of bringing new and untested ideas are particularly encouraged. Accordingly, applicants might consider, where appropriate, multi-PD/PI applications that integrate appropriate expertise, including but not limited to biological, chemical and physical sciences, engineering, computational modeling and statistics.

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

Letter of Intent: Not Required.

Deadline: December 7, 2016, by 5:00 PM local time of applicant organization. All types of non-AIDS applications allowed for this funding opportunity announcement are due on this date.

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

Department of Defense/US Army/DARPA/ONR

Grant Program: DoD USAMRMC FY17 Broad Agency Announcement for Extramural Medical Research
Agency: Department of Defense Dept. of the Army – USAMRAA W81XWH-17-R-BAA1
Website:
https://www.fbo.gov/index?s=opportunity&mode=form&id=bacdeb99dc1cf27e8dcd920b1fe751ac&tab=core&_cview=0
Brief Description: The USAMRMC mission is to provide solutions to medical problems of importance to the American Service member at home and abroad, as well as to the general public at large. The scope of this effort and the priorities attached to specific projects are influenced by changes in military and civilian medical science and technology, operational requirements, military threat assessments, and national defense strategies. The extramural research and development programs play a vital role in the fulfillment of the objectives established by the USAMRMC. General information on USAMRMC can be obtained at http://mrmc.amedd.army.mil/index.cfm. This FY17 BAA is intended to solicit extramural research and development ideas and is issued under the provisions of the Competition in Contracting Act of 1984 (Public Law 98-369), as implemented in Federal Acquisition Regulation (FAR) 6.102(d)(2) and 35.016 and in DoD Grant and Agreement Regulations (DoDGARS) 22.315. In accordance with FAR 35.016, projects funded under this BAA must be for basic and applied research to support scientific study and experimentation directed towards advancing the state of the art or increasing knowledge or understanding rather than focusing on development of a specific system or hardware solution. Research and development funded through this BAA are intended and expected to benefit and inform both military and civilian medical practice and knowledge. The selection process is highly competitive and the quantity of meaningful submissions (both pre-proposals/pre-applications and full proposals/applications) received typically exceeds the number of awards that available funding can support. This BAA provides a general description of USAMRMC's research and development programs, including research areas of interest, evaluation and selection criteria, pre-proposal/pre-application and full proposal/application preparation instructions, and general administrative information. Specific submission information and additional administrative requirements can be found in the document titled "General Submission Instructions" available in Grants.gov along with this BAA. **This FY17 BAA is continuously open for a 12-month period, from October 1, 2016 through September 30, 2017, at 11:59 p.m. Eastern Time**. Submission of a pre-proposal/pre-application is required and must be submitted through the electronic Biomedical Research Application Portal (eBRAP) (https://eBRAP.org/). Pre-proposals/pre-applications may be submitted at any time throughout the 12-month period. If the USAMRMC is interested in receiving a full proposal/application, the PI will be sent an invitation to submit via eBRAP. A full proposal/application must be submitted through Grants.gov (http://www.grants.gov/). Invited full proposals/applications can be submitted under this FY17 BAA through September 30, 2017.
Awards: Various
Deadline: Open until September 30, 2017
Contact: Technical POC: RA Coordinator, DARPA/DSO • Solicitation Email: YFA2017@darpa.mil

Grant Program: Biological Technologies
Agency: Defense Advanced Research Projects Agency DARPA-BAA-16-33
Website:
https://www.fbo.gov/index?s=opportunity&mode=form&id=554fc440fe8689512243aabe0a1fb789&tab=core&_cview=0
Brief Description: The Defense Advanced Research Projects Agency (DARPA) is soliciting innovative research proposals of interest to the Biological Technologies Office (BTO). Proposed research should investigate leading edge approaches that enable revolutionary advances in science, technologies, or systems at the intersection of biology with engineering and the physical and computer sciences. Specifically excluded is research that primarily results in evolutionary improvements to the existing state of the art. BTO seeks unconventional approaches that are outside the mainstream, challenge assumptions, and have the potential to radically change established practice, lead to extraordinary outcomes, and create entirely new fields.
Awards: Various
Deadline: Proposal Abstracts and Full Proposals will be submitted on a rolling basis until April 28, 2017, 4:00pm ET
Contact: The BAA Administrator for this effort can be reached at: E-mail: DARPA-BAA-16-33@darpa.mil

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Department of Energy

Grant Program: Notice Of Intent To Issue Funding Opportunity Announcement No. DE-FOA-0001647
Agency: Department of Energy DE-FOA-0001680
Website: https://eere-exchange.energy.gov/default.aspx#FoaIdf7d62876-8a95-481d-9a2c-4ea1d5f4f1f2
Brief Description: The Office of Energy Efficiency and Renewable Energy (EERE) intends to issue, on behalf of the Fuel Cell Technologies Office (FCTO), a Funding Opportunity Announcement (FOA) entitled "Fuel Cell Technologies Office Annual FOA".
The FCTO is a key component of the Department of Energy's (DOE) EERE portfolio. Fuel cells powered by hydrogen from renewable or low-carbon resources can lead to substantial energy savings and reductions in imported petroleum and carbon emissions. The FCTO aims to provide clean, safe, secure, affordable, and reliable energy from diverse domestic resources, providing the benefits of increased energy security and reduced criteria pollutants and green-house gas emissions through research, development and demonstration (RD&D) to address both key technical challenges for fuel cells and hydrogen fuels (i.e. hydrogen production, delivery and storage) and institutional barriers such as hydrogen codes and standards.

It is anticipated that the FOA will include 4 topics that are detailed below. The first 3 topics will leverage FCTO's national lab consortia launched under the DOE Energy Materials Network (EMN) in FY16, in support of the President's Materials Genome Initiative and advanced manufacturing priorities. Consortia that will be leveraged include: ElectroCat, HydroGEN, and HyMARC (additional information is below). Applicants will be encouraged to leverage consortia capabilites in their research, and share research results with consortia data portals. Interested applicants are encouraged to explore consortia capabilites, and interface with consortia steering committees prior to the release of the FOA. To help facilitate this, FCTO plans to hold webinars and/or weekly public teleconferences with technical representatives from each consortium in the coming weeks, wherein interested applicants can ask questions about the consortia's

capabilities. These webinars and teleconferences will be open to the public and their recordings will be publically posted to ensure everyone has the same access. To ensure you are notified of upcoming FCTO webinars, please subscribe to our Fuel Cell News and Financial Opportunity Updates at the following link: http://energy.gov/eere/fuelcells/subscribe-news-and-financial-opportunity-updates.

This notice of intent (NOI) is issued so that interested parties are aware of the EERE's intention to issue this FOA in the near term. All of the information contained in this NOI is subject to change. EERE will not respond to questions concerning this NOI. Once the FOA has been released, EERE will provide an avenue for potential applicants to submit questions.

EERE plans to issue the FOA in the Fall of 2016 via the EERE Exchange website https://eere-exchange.energy.gov/. If applicants wish to receive official notifications and information from EERE regarding this FOA, they should register in EERE Exchange. When the FOA is released, applications will be accepted only through EERE Exchange.

Contact Information: Laura J. Gonzalez EERE-ExchangeSupport@hq.doe.gov EERE-ExchangeSupport@hq.doe.gov

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NASA

Grant Program: ROSES 2016: Planetary Science Deep Space SmallSat Studies
Agency: NASA NNH16ZDA001N-PSDS3
Website:
https://nspires.nasaprs.com/external/solicitations/summary.do?method=init&solId={DF68AD7A-2E90-746B-21A4-C6528A7C6B4F}&path=init

Brief Description: This program element supports the study of spaceflight mission concepts that can be accomplished using small spacecraft, including CubeSats. All proposed investigations must be responsive to the goals of the Planetary Science Division, as described in the 2014 NASA Science Plan. Additionally, proposals may address the operational requirements of the Planetary Defense Coordination Office in conducting surveys for potential Near Earth Objects (NEO's) and characterization of known NEO's as documented in the National Research Council study, "Defending Planet Earth: Near-Earth Object Surveys and Hazard Mitigation Strategies Final Report," released in 2010.

NASA's Planetary Science Program is considering including small secondary payloads on every future planetary science launch. As such, studies performed under this program element will provide valuable information to assist future Announcement of Opportunity planning and NASA's development of small spacecraft technologies relevant to deep space science investigations. In order to advance the objectives outlined in the Science Plan, proposed investigations may target any body in the Solar System, including near Earth objects (NEO's), except for the Earth and Sun. Investigations of extra-solar planets are not included in this program element.

The Planetary Science Deep Space SmallSat Studies (PSDS3) program is intended to capitalize on the creativity in the planetary science community to envision science enabled by smaller and significantly lower cost deep space missions. NASA expects to make awards for mission concept studies that will explore the breadth of missions possible that are enabled by CubeSat/SmallSat technologies. Mission design assistance, if required, for these mission concepts will be offered by NASA during the six-month studies. NASA Headquarters will also use the results of these studies when considering expanding the provisions and capabilities of future Announcements of Opportunity for technology development.

Awards: ~ $3.0 M
Proposal Deadline: November 18, 2016
Contact: Carolyn Mercer Planetary Science Division Science Mission Directorate National Aeronautics and Space Administration Washington, DC 20546-0001 Telephone: (202) 358-1014 E-mail: cmercer@nasa.gov .

GSK

Grant Program: GSK Drug Discovery Idea
Agency: GSK
Website: http://openinnovation.gsk.com/challenge-mid-atlantic.html
Brief Description: Applicants should meet the following criteria:

- **Do you have a clear therapeutic hypothesis?**

We are looking for a coherent and supportable hypothesis to develop a medicine that would provide therapeutic benefit to particular groups of patients.

- **Do you have a defined target?**

You should have identified a specific protein drug target linked to a disease and be able to propose why modulating this with a small molecule could provide an effective and safe therapy.

- **Do you have enabling expertise?**

The Discovery Fast Track Mid-Atlantic Challenge is a collaboration. You should have generated data which provides proof of concept for your proposal and, ideally, already have developed key reagents and assays.

Deadline: November 18, 2016
NJIT Contact: Eric Blitz at blitz@njit.edu
