

NJIT Research Newsletter

Issue: ORN-2017-34

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/>.

Special Announcements: Page 1
Grant Opportunity Alerts: Keyword Index: Page 4
Recent Awards: Page 5
In the News (Related to research funding): Page 7
Webinars and Events: Page 8
Grant Opportunities: Page 9
Streamlyne Update: Page 30

Special Announcements

2017 Rutgers BHI-RUN-NJIT Pilot Grants Program in Neuroscience

\$40,000 Faculty Neuroscience Seed Grants

We are pleased to announce the 2017 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, Friday, October 6th, 2017**. 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, Facilities and Resources and Equipment). Within the Research Plan under the Innovation section please describe explicitly how the pilot funding will promote new collaborations and/or new projects. 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 October 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 January 2018. 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, 2018. 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, Friday, October 6th, 2017**

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 January 2018. 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., Senior Vice Provost for Research, New Jersey Institute of Technology

NJIT Research Events

Event: Presentation of NJIT Board of Overseers Excellence in Research Prize & Medal and Excellence in Research Lifetime Achievement Award

When: October 4, 2017; 5.30 PM

Where: 112 Eberhardt; Live Steaming at www.njit.edu/excellenceinresearch

Brief Description: Dr. Tara Alvarez, a professor in the Department of Biomedical Engineering, is this year's recipient of the Board of Overseers Excellence in Research Prize and Medal, which recognizes sustained contributions that have enhanced the reputation of NJIT. Dr. Alvarez specializes in examining and treating vision function, Conversion Insufficiency (CI), in children with autism and patients with brain injury and concussions. She will formally receive the prize and medal at the Board of Overseers Excellence in Research Prize and Medal ceremony Oct. 4, 2017. Dr. Yehoshua Perl, a professor in the Department of Computer Science, will receive the Board of Overseers Excellence in Research Lifetime Achievement Award in recognition of his distinguished career in industry and academe. Dr. Perl specializes in developing knowledge representation framework and databases in biomedical ontologies. He has authored more than 125 papers for international journals and conferences and has previously received both the Overseers College Research Award for the Ying Wu College of Computing and the Harlan J. Perlis Research Award.

Event: President's Forum and 2017 NJIT Research Centers and Laboratories Showcase

When: November 16, 2017; 10.00 AM – 2.30 PM

Where: Ballroom A and B., Campus Center

Brief Description: The President's Forum and 2017 NJIT Research Centers and Laboratories Showcase will be held on November 16, 2017 to feature ongoing exciting research at NJIT. The showcase presents NJIT research enterprise to promote core and interdisciplinary collaborative research. This year, the showcase will feature 70 NJIT research institutes, centers and specialized laboratories. Dr. Steven Schachter, MD, Chief Academic Officer and Program Leader of NeuroTechnology at the Consortia for Improving Medicine with Innovation & Technology (CIMIT) and a Professor of Neurology at Harvard Medical School (HMS). will be our Keynote Speaker.

Keynote Speaker Bio: Dr. Steven Schachter is Chief Academic Officer and Program Leader of NeuroTechnology at the Consortia for Improving Medicine with Innovation & Technology (CIMIT) and a Professor of Neurology at Harvard Medical School (HMS). Dr. Schachter attended medical school at Case Western Reserve University in Cleveland, Ohio. He completed an internship in Chapel Hill, North Carolina, a neurological residency at the Harvard-Longwood Neurological Training Program, and an epilepsy fellowship at Beth Israel Hospital in Boston,

Massachusetts. Dr. Schachter is Past President of the American Epilepsy Society. He is also past Chair of the Professional Advisory Board of the Epilepsy Foundation and serves on their Board of Directors. He has directed over 70 research projects involving antiepileptic therapies, and published over 200 articles and chapters. He compiled the 6-volume Brainstorms series, which has been distributed to over 150,000 patients and families worldwide in several languages, and edited or written 26 other books on epilepsy and behavioral neurology. Dr. Schachter is the founding editor and editor-in-chief of the medical journals *Epilepsy & Behavior* and *Epilepsy & Behavior Case Reports*.

This President's forum is a featured event in the Albert Dorman Honors College Colloquium Series and is made possible in part by the generous support of the DeCaprio Family.

Grant Opportunity Alerts

Keywords and Areas Included in the Grant Opportunity Alert Section Below

NSF: Scalable Parallelism in the Extreme (SPX); Cyberlearning for Work at the Human-Technology Frontier; NSF/Intel Partnership on Foundational Microarchitecture Research (FoMR); Small Business Innovation Research Program Phase I (SBIR); Small Business Technology Transfer Program Phase I (STTR); Research Coordination Networks (RCN)

NIH: NIH Blueprint Diversity Specialized Predoctoral to Postdoctoral Advancement in Neuroscience (D-SPAN) Award (F99/K00); NCI Outstanding Investigator Award (R35); BRAIN Initiative: Exploratory Team-Research BRAIN Circuit Programs - eTeamBCP (U01); Collaborative Program Grant for Multidisciplinary Teams (RM1); NIH Science Education Partnership Award (SEPA)(R25); Innovative Approaches or Technologies to Investigate Regional, Structural and Functional Heterogeneity of CNS Small Blood and Lymphatic Vessels (R01); High Impact Neuroscience Research Resource Grants (R24)

Department of Defense/US Army/DARPA/ONR: DoD Medical Simulation and Information Sciences, Toward A Next-Generation Trauma Care Capability: Foundational Research for Autonomous, Unmanned, and Robotics Development of Medical Technologies (FORWARD) Award; Broad Agency Announcement for Extramural Medical Research; DoD Hearing Restoration Research Program Focused Research Award; DoD Psychological Health/ Traumatic Brain Injury Research Program, Complex Traumatic Brain Injury Rehabilitation Research Clinical Research Award; Young Faculty Award

Department of Energy: Generation 3 Concentrating Solar Power Systems; RFI: Solar Energy Technology Analysis & Data Needs; Advanced Power Electronics Design for Solar Applications; High-Energy-Density Laboratory Plasma Science

NASA: Use of the NASA Physical Sciences Informatics System

National Endowment of Humanities: PhD Planning Grants; Summer Stipends; Research and Development Grants

Bill and Melinda Gates Foundation: Grand Challenge Program

Streamlyne Update: New How-to-do Videos

Recent Research Grant and Contract Awards

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

PI: Gregory Fleishman (PI) and Dale Gary
Department: Center for Solar Terrestrial Research
Grant/Contract Project Title: Impulsive Ion Escape at the Sun
Funding Agency: NASA
Duration: 06/20/16-06/19/19

PI: William Marshall (PI) and John Federici (Co-PI)
Department: NJIT and Physics
Grant/Contract Project Title: Value Engineering for Enhanced Workforce Development, Training, and Technology Demonstrations
Funding Agency: US Army (Picatinny Arsenal)
Duration: 09/21/17-09/20/18

PI: William Marshall (PI), John Federici (Co-PI) and Somenath Mitra (Co-PI)
Department: NJIT, Physics and Chemistry and Environmental Sciences
Grant/Contract Project Title: Advanced Manufacturing for Weapon Systems Standardization and Effectiveness (AMWSSE)
Funding Agency: US Army (Picatinny Arsenal)
Duration: 09/27/17-09/26/18

PI: Haim Grebel (PI)
Department: Electrical and computer Engineering
Grant/Contract Project Title: Stacked 2-D Meta-Structures
Funding Agency: Department of Defense, US Army
Duration: 09/28/17-03/20/18

PI: Monique Paden-Hutchinson (PI)
Department: CPCP
Grant/Contract Project Title: Upward Bound
Funding Agency: Department of Education
Duration: 09/01/17-08/31/18

PI: Monique Paden-Hutchinson (PI)
Department: CPCP
Grant/Contract Project Title: Upward Bound 1
Funding Agency: Department of Education
Duration: 09/01/17-08/31/18

PI: Treean Arinzeh (PI)
Department: Biomedical Engineering
Grant/Contract Project Title: Stem Cells Combined with Smart Biomaterials for Cartilage Repair
Funding Agency: Lisa Dean Moseley Foundation
Duration: 09/01/17-08/31/18

PI: John Federici (PI)
Department: Physics
Grant/Contract Project Title: Fabrication of Printed Electronic Substrates for EWI
Funding Agency: Edison Welding Institute (EWI)
Duration: 09/25/17-10/31/17

PI: Iulian Neamtiu (PI)
Department: Computer Science
Grant/Contract Project Title: MACRO: Models for Enabling Continuous Reconfigurability of Secure Missions
Funding Agency: ARL, US Army
Duration: 09/20/16-09/19/18

In the News...

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

\$200 Million for Computer Science: In a move spearheaded by Ivanka Trump, [the Department of Education](#) set a goal of providing \$200 million in grants to, in President Trump's words, "explore ways to add or increase computer science to existing K-12 and post-secondary education programs." The private sector, through the Internet Association, committed another \$300 million over five years, with Amazon, Facebook, Google, Microsoft, and Salesforce each pledging \$50 million. NSF has a similar effort.

Use Of Drones For Research Has Increased In Recent Years: In a recent study at Oregon State University, the DRONES related research have been significantly increased. These research opportunities are made possible by drones equipped with cameras, infrared sensors and LIDAR systems to do survey work.

Pearson Study Downplays Future Job Market Automation: [U.S. News & World Report](#) reports that according to new research from Pearson, "the future of the labor market may not be as automated and job-crushing as previous research has suggested." The new report "suggests the jobs of tomorrow are likely to be more technically demanding than they are today but won't disappear entirely." Researchers "weighed ongoing employment, demographic, inequality and environmental trends in projecting out how the labor markets in the U.S. and the United Kingdom are likely to evolve over the next several years."

Defense Policy Bill: University representatives have identified provisions in each bill they think will be good for research. The Senate measure includes "special acquisition authority" for DOD to access universities' technical expertise and use of "other transactions authority and experimental procurement authority" to reach research agreements with industry and academia.

Sections of interest in the House bill include: \$15 million to establish "a Hacking for Defense Program, which seeks to build a network of innovators and entrepreneurs to develop and commercialize DOD technology"; a pilot program with DOD labs and DOE labs to facilitate tech

transfer and commercialization with private entities; a provision that allows non-profit research institutions to enter into prototype projects without cost sharing requirements; and a requirement that DOD identify STEM jobs needed to support future mission work, and determine a STEM jobs shortfall. Full report is posted on the website <https://www.congress.gov/bill/115th-congress/senate-bill/1519>

Research in Material Science: The Subcommittees on Energy and Research and Technology of the House Science, Space, and Technology Committee recently held a joint hearing to review federally funded research in materials science. Researchers in this field analyze existing materials, studying their chemical, physical, atomic, and magnetic make up in order to develop new materials with preferred properties. New materials research has facilitated innovations in areas such as biomedical engineering and at the Department of Defense. Investing in science, technology, engineering, and mathematics (STEM) education and the infrastructure that is needed for this advanced research is imperative. One witness at the hearing, Dr. Fred Higgs, a professor of Mechanical Engineering from Rice University and expert in tribology, expressed three main issues in his testimony. He stated that new materials can improve the safety and environmental impact of energy production technologies and that material advancements can provide the foundation for new technologies in medicine, transportation, manufacturing and computing. Additionally he promoted the merits of science prize competitions, university-federal lab/agency partnerships, and university-company partnerships, in speeding the development of advanced materials. The hearing testimony and archived video is available:

<https://science.house.gov/legislation/hearings/joint-subcommittee-energy-and-subcommittee-research-and-technology-hearing>

NSF: Important Notice No. 140: Training in Responsible Conduct of Research – A Reminder of the NSF Requirement

Important Notice to Presidents of Universities and Colleges and Heads of Other National Science Foundation Grantee Organizations

The National Science Foundation (NSF) requires that each institution submitting a proposal certify that it has a plan to provide appropriate training and oversight in the ethical conduct of research to all undergraduates, graduate students, and postdoctoral researchers who will be supported by NSF to conduct research. The institutions are responsible for verifying that the training has been received. This is in accordance with the 2007 [America COMPETES Act](#).ⁱ The NSF recognizes the importance of research integrity and the responsible and ethical conduct of research. The scientific research enterprise is critical to our nation, and its progress depends on maintaining integrity in the process of conducting research. A recent report by the National Academies of Sciences, Engineering, and Medicine, called [Fostering Integrity in Research](#), notes that the core values and guiding norms underpinning research integrity are crucial to assure that new generations of researchers are able to meet the challenges of a dynamic research environment.ⁱⁱ

NSF's Responsible Conduct of Research (RCR) requirement applies to the breadth of research disciplines the Foundation funds and the different educational levels of the students and post-doctoral researchers the agency supports. The training should be effective and appropriately tailored to the specific needs and circumstances at each university. Accordingly, it is the responsibility of each institution to determine both the focus and the delivery method for appropriate training.

The NSF Office of the Inspector General (OIG) has studied a sample of academic institutions to find out how they have implemented the [RCR requirement](#).ⁱⁱⁱ I encourage you to read the OIG

report as well as the [Fostering Integrity in Research](#) report cited above. Both of these reports draw attention to the importance of maximizing the effectiveness of RCR education. The OIG report suggests that universities could benefit from best practices. I would like to draw your attention to Chapters 9 and 10 in the [Fostering Integrity in Research](#) report to learn more about some best practices and the many resources available for RCR educational materials and strategies.

I believe we can all do more to achieve and demonstrate the effectiveness of RCR training and improve strategies for fostering research integrity. This will continue to be a topic of discussion at NSF, including the National Science Board, and among the scientific societies, universities, colleges, and other institutions involved in the research enterprise. Thank you for your continued commitment and dedication to this important endeavor.

France A. Córdova, Director; Website: <https://www.nsf.gov/pubs/issuances/in140.jsp?org=NSF>

Webinar and Events

Event: OISE Presents Accelerating Research: International Network-to-Network Collaboration

Sponsor: NSF

When: October 6, 2017 from 2:00 PM to 4.00 PM

Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=243183&org=NSF

Brief Description: The National Science Foundation (NSF) Office of International Science and Engineering (OISE) invites individuals or groups of individuals from the U.S. research community to submit White Papers on topics in science, engineering, and/or STEM education that are ripe for international network-to-network collaboration. Additional information on this call and instructions on submitting a White Paper are provided in the [Dear Colleague Letter](#). Please direct questions to oise-accelnet@nsf.gov. OISE is hosting public webinars to discuss the Dear Colleague Letter and answer questions from the research community.

Webinar 2: Oct. 6, 2017 – 2:00pm-4:00pm Eastern Time; Password: Accel1234!

<https://nsf.webex.com/nsf/onstage/g.php?MTID=e29874085681c819cf77a3ceb4ca7fd41>

Audio-only participation is available via phone by dialing 1-415-655-0002 (toll) and entering audio access code: 740 312 533. Note: To view real-time captions, open a separate browser page and go to <http://www.fedrcc.us/>. Enter the event confirmation #3389238

Event: IEEE Webinar: Modeling of Electromechanical Sensors & Systems

When: Wednesday, October 4, 2017; 2.00 PM – 3.00 PM

Website: <https://spectrum.ieee.org/webinar/modeling-of-electromechanical-sensors-systems>

About the Webinar: If you are interested in modeling electromechanical devices, including piezoelectric materials, then tune into this webinar to learn how PZFlex helps Fortune100 companies optimize device designs. Understanding the complex, highly coupled behavior of electromechanical sensors (e.g. piezoelectric transducer arrays, SAWs, and electrostatic MUTs) and their performance in a system as a whole is critical in the development of innovative technologies (e.g. Ultrasonic Fingerprint Sensors, Medical Imaging, and RF Filters). Due to the anisotropic materials, complex coupling effects, and multi-physics (piezoelectric, electrostatic, structural, thermal, and acoustic) involved in a single device design numerical

simulation using finite element analysis (FEA) is often the only way to fully understand device and system behavior and inform the design process. Powerful numerical simulation is an innovation enabler that provides engineers a means of predicting and understanding effects of design changes, environmental influences, and manufacturing tolerances on device and system performance. By facilitating rapid design iteration and assessment, effective simulation tools can explore large design spaces that would be impossible to do via physical prototypes.

In this webinar, PZFlex will explore and analyze some of the common pain-points in complex device design and present pragmatic examples demonstrating how rapid FEA simulation can help engineers overcome challenges while minimizing time, risk and cost.

Presenters:

Dr Gerry Harvey, VP of Engineering, PZFlex

Dr Andrew Tweedie, Director, UK of Operations, PZFlex

Grant Opportunities

National Science Foundation

Grant Program: Scalable Parallelism in the Extreme (SPX)

Agency: National Science Foundation NSF 17-600

RFP Website: <https://www.nsf.gov/pubs/2017/nsf17600/nsf17600.htm>

Brief Description: Computing systems have undergone a fundamental transformation from the single-core processor-devices of the turn of the century to today's ubiquitous and networked devices with multicore/many-core processors along with warehouse-scale computing via the cloud. At the same time, semiconductor technology is facing fundamental physical limits and single-processor performance has plateaued. This means that the ability to achieve performance improvements through improved processor technologies alone has ended. In recognition of this obstacle, the recent [National Strategic Computing Initiative](#) (NSCI) encourages collaborative efforts to develop, "over the next 15 years, a viable path forward for future high-performance computing (HPC) systems even after the limits of current semiconductor technology are reached (the 'post-Moore's Law era')."

Exploiting parallelism is one of the most promising directions to meet these performance demands. While parallelism has already been studied extensively and is a reality in today's computing technology, the expected scale of future systems is unprecedented. At extreme scales, factors that have small impacts today can become highly significant. For example, even short serial program sections can prove destructive to performance. Heterogeneity of processing elements [Central Processing Units (CPUs), Graphics-Processing Units (GPUs), and accelerators] and their memory hierarchies pose significant management challenges. High system complexity may lead to unacceptable latencies and mean time between failures, even if built with highly reliable components. Furthermore, the interconnectedness of large-scale distributed architectures poses an enormous challenge of understanding and providing guarantees on performance behavior. These are just four of many issues arising in the new era of parallel computing that is upon us.

The Scalable Parallelism in the Extreme (SPX) program aims to support research addressing the challenges of increasing performance in this modern era of parallel computing. This will require a collaborative effort among researchers in multiple areas, from services and applications down to micro-architecture. SPX encompasses all five NSCI [Strategic Objectives](#), including supporting foundational research toward architecture and software approaches that drive performance improvements in the post-Moore's Law era; development and deployment of

programmable, scalable, and reusable platforms in the national HPC and scientific cyberinfrastructure ecosystem; increased coherence of data analytic computing and modeling and simulation; and capable extreme-scale computing. Coordination with industrial efforts that pursue related goals are encouraged.

Awards: Standard Grant

; Anticipated Funding Amount: \$10,000,000

Letter of Intent: Not Required

Proposal Submission Due Date: January 09, 2018

Contacts: Tao Li, Program Director, CCF, telephone: (703) 292-8238, email: taoli@nsf.gov

- Anindya Banerjee, Program Director, CISE/CCF, telephone: (703) 292-7885, email: abanerje@nsf.gov
- Tracy Kimbrel, Program Director, CISE/CCF, telephone: (703) 292-8910, email: tkimbrel@nsf.gov

Grant Program: Cyberlearning for Work at the Human-Technology Frontier

Agency: National Science Foundation NSF 17-598

RFP Website: <https://www.nsf.gov/pubs/2017/nsf17598/nsf17598.htm>

Brief Description: The purpose of the **Cyberlearning for Work at the Human-Technology Frontier** program is to fund exploratory and synergistic research in learning technologies to prepare learners to excel in work at the human-technology frontier. This program responds to the pressing societal need to educate and re-educate learners of all ages (students, teachers and workers) in science, technology, engineering, and mathematics (STEM) content areas to ultimately function in highly technological environments, including in collaboration with intelligent systems. Innovative technologies can reshape learning processes, which in turn can influence new technology design. Learning technology research in this program should be informed by the convergence of multiple disciplines: education and learning sciences, computer and information science and engineering, and cognitive, behavioral and social sciences. This program funds learning technology research in STEM and other foundational areas that enable STEM learning.

Awards: Standard Grant; **Anticipated Funding Amount:** \$15,000,000

Letter of Intent: Not Required

Proposal Submission Due Date: January 08, 2018

Contacts: Tatiana Korelsky, co-lead CISE, CISE/IIS, telephone: (703) 292-8930, email: tkorelsk@nsf.gov

- Amy L. Baylor, co-lead EHR, EHR/DRL, telephone: (703) 292-5126, email: abaylor@nsf.gov
- John Cherniavsky, Senior Advisor, EHR/DRL, telephone: (703)292-5136, email: jchernia@nsf.gov

Grant Program: NSF/Intel Partnership on Foundational Microarchitecture Research (FoMR)

Agency: National Science Foundation NSF 17-597

RFP Website: <https://www.nsf.gov/pubs/2017/nsf17597/nsf17597.htm>

Brief Description: The confluence of transistor scaling, increases in the number of architecture designs per process generation, the slowing of clock frequency growth, and recent success in research exploiting Thread Level Parallelism (TLP) and Data Level Parallelism (DLP) all point to an

increasing opportunity for innovative microarchitecture techniques and methodologies in delivering performance growth in the future.

The NSF/Intel Partnership on Foundational Microarchitecture Research will support transformative microarchitecture research targeting improvements in instructions per cycle (IPC). This solicitation seeks microarchitecture technique innovations beyond simplistic, incremental scaling of existing microarchitectural structures. Specifically, FoMR seeks to advance research that has the following characteristics: (1) high IPC techniques ranging from microarchitecture to code generation; (2) “microarchitecture turbo” techniques that marshal chip resources and system memory bandwidth to accelerate sequential or single-threaded programs; and (3) techniques to support efficient compiler code generation. Advances in these areas promise to provide significant performance improvements to continue the cadence promised by Moore’s Law.

Awards: Six awards; **Anticipated Funding Amount:** \$3,000,000

Letter of Intent: Not Required

Proposal Submission Due Date: January 12, 2018

Contacts: Tao Li, Program Director, CCF, telephone: (703) 292-8238, email: taoli@nsf.gov

- Yan Solihin, Program Director, CNS, telephone: (703) 292-7939, email: ysolihin@nsf.gov
- Matt Haycock, Center Executive Sponsor, Vice President, Intel Labs, telephone: (503) 712-2872, email: matthew.haycock@intel.com

Grant Program: Small Business Innovation Research Program Phase I (SBIR)

Agency: National Science Foundation NSF 17-596

RFP Website: <https://www.nsf.gov/pubs/2017/nsf17596/nsf17596.htm>

Brief Description: The SBIR program is Congressionally mandated and intended to support scientific excellence and technological innovation through the investment of federal research funds to build a strong national economy by stimulating technological innovation in the private sector; strengthening the role of small business in meeting federal research and development needs; increasing the commercial application of federally supported research results; and fostering and encouraging participation by socially and economically disadvantaged and women-owned small businesses. The SBIR program at NSF solicits proposals from the small business sector consistent with NSF’s mission to promote the progress of science; to advance the national health, prosperity, and welfare; and to secure the national defense.

The program is governed by Public Law 112-81 (SBIR/STTR Reauthorization Act of 2011) [and reauthorized by Public Law 114-328](#). SBIR/STTR policy is provided by the Small Business Administration (SBA) through the [SBIR Policy Directive](#). A main purpose of the legislation is to stimulate technological innovation and increase private sector commercialization. The NSF SBIR/STTR program is therefore in a unique position to meet both the goals of NSF and the purpose of the SBIR/STTR legislation by transforming scientific discovery and innovation into both social and economic benefit, and by emphasizing private sector commercialization.

Because the program has no topical or procurement focus, the NSF offers very broad solicitation topics that are intended to permit as many eligible science- and technology-based small businesses as possible to compete for funding. The topics are detailed on the [website](#). In many cases, the program is also open to proposals focusing on technical and market areas not explicitly noted in the aforementioned topics.

Awards: Fixed award; **Anticipated Funding Amount:** \$33,750,000

Letter of Intent: Not Required

Proposal Submission Due Date: December 4, 2017

Contacts: Henry Ahn, Biomedical (BM) Technologies and Educational Applications (EA), telephone: 703-292-7069, email: hahn@nsf.gov

- Peter Atherton, Information Technologies (IT), telephone: (703) 292-8772, email: patherto@nsf.gov
 - Anna Brady-Estevez, Chemical and Environmental Technologies, telephone: (703) 292-7077, email: abrady@nsf.gov
-

Grant Program: Small Business Technology Transfer Program Phase I (STTR)

Agency: National Science Foundation NSF 17-595

RFP Website: <https://www.nsf.gov/pubs/2017/nsf17594/nsf17594.htm>

Brief Description: The STTR program is Congressionally mandated and intended to support scientific excellence and technological innovation through the investment of federal research funds to build a strong national economy by stimulating technological innovation in the private sector; strengthening the role of small business in meeting federal research and development needs; increasing the commercial application of federally supported research results; and fostering and encouraging participation by socially and economically disadvantaged and women-owned small businesses. The STTR program at NSF solicits proposals from the small business sector consistent with NSF's mission to promote the progress of science; to advance the national health, prosperity, and welfare; and to secure the national defense.

The program is governed by Public Law 112-81 (SBIR/STTR Reauthorization Act of 2011) and reauthorized by [Public Law 114-328](#). STTR policy is provided by the Small Business Administration (SBA) through the [STTR Policy Directive](#). A main purpose of the legislation is to stimulate technological innovation and increase private sector commercialization. The NSF SBIR/STTR program is therefore in a unique position to meet both the goals of NSF and the purpose of the SBIR/STTR legislation by transforming scientific discovery and innovation into both social and economic benefit, and by emphasizing private sector commercialization.

Because the program has no topical or procurement focus, the NSF offers very broad solicitation topics that are intended to permit as many eligible science- and technology-based small businesses as possible to compete for funding. The topics are detailed on the [website](#). In many cases, the program is also open to proposals focusing on technical and market areas not explicitly noted in the aforementioned topics.

Awards: Fixed awards; **Anticipated Funding Amount:** \$9,000,000

Letter of Intent: Not Required

Proposal Submission Due Date: December 04, 2017

Contacts: Henry Ahn, Biomedical (BM) Technologies and Educational Applications (EA), telephone: (703) 292-7069, email: hahn@nsf.gov

- Peter Atherton, Information Technologies (IT), telephone: (703) 292-8772, email: patherto@nsf.gov
 - Anna Brady-Estevez, Chemical and Environmental Technologies, telephone: (703) 292-7077, email: abrady@nsf.gov
-

Grant Program: Research Coordination Networks (RCN)

Agency: National Science Foundation NSF 17-594

RFP Website: <https://www.nsf.gov/pubs/2017/nsf17594/nsf17594.htm>

Brief Description: The goal of the RCN program is to advance a field or create new directions in research or education by supporting groups of investigators to communicate and coordinate their

research, training and educational activities across disciplinary, organizational, geographic and international boundaries. The RCN program provides opportunities to foster new collaborations, including international partnerships, and address interdisciplinary topics. Innovative ideas for implementing novel networking strategies, collaborative technologies, training, broadening participation, and development of community standards for data and meta-data are especially encouraged. RCN awards are not meant to support existing networks; nor are they meant to support the activities of established collaborations. RCN awards also do not support primary research. Rather, the RCN program supports the means by which investigators can share information and ideas, coordinate ongoing or planned research activities, foster synthesis and new collaborations, develop community standards, and in other ways advance science and education through communication and sharing of ideas. Additional information about the RCN program and its impacts may be found in Porter et al. 2012 Research Coordination Networks: Evidence of the relationship between funded interdisciplinary networking and scholarly impact. *BioScience*, 62: 282-288. Proposed networking activities directed to the RCN program should focus on a theme to give coherence to the collaboration, such as a broad research question or particular technologies or approaches.

Participating programs in the Directorates for Biological Sciences (BIO), Computer and Information Science and Engineering (CISE), Geosciences (GEO), Education and Human Resources (EHR), Engineering (ENG) and Social, Behavioral and Economic Sciences (SBE) will accept RCN proposals. PIs are encouraged (for CISE required) to discuss suitability of an RCN topic with a program officer that manages the appropriate program.

Several other NSF solicitations accept RCN proposals, or support research networking activities if appropriate to the solicitation. Please see section **IX. Other Information** of this solicitation for a listing of these programs. PIs are strongly advised to contact the appropriate Program Director before submitting an RCN proposal.

Awards: Standard Grant or Continuing Grant; **Anticipated Funding Amount:** \$12,500,000

Letter of Intent: Not Required

Proposal Submission Due Date: Submission deadlines vary by program. RCN proposals should be submitted to a particular program according to the program's submission dates; PIs should consult program websites and contact cognizant program officers for guidance.

Contacts: Peter H. McCartney, telephone: (703) 292-8470, email: pmccartn@nsf.gov

National Institutes of Health

Grant Program: NIH Blueprint Diversity Specialized Predoctoral to Postdoctoral Advancement in Neuroscience (D-SPAN) Award (F99/K00)

Agency: National Institutes of Health RFA-NS-18-007

RFP Website: <https://grants.nih.gov/grants/guide/rfa-files/RFA-NS-18-007.html>

Brief Description: The purpose of the NIH Blueprint Diversity Specialized Predoctoral to Postdoctoral Advancement in Neuroscience Award or D-SPAN (F99/K00) is to enhance the pool of well-trained diverse neuroscientists who will pursue academic/research careers. The D-SPAN will support mentored research training for late-stage graduate students from backgrounds that are nationally underrepresented in neuroscience research and who have demonstrated interest and potential in pursuing careers as independent researchers. The F99/K00 award will provide up to 6 years of support in two phases, described further in the section below. Strong individualized research training plans and career development activities will outline a defined research pathway and are expected to enhance the development of independent neuroscience research careers.

Individuals from underrepresented backgrounds in neuroscience research are eligible for support under this award if they are currently enrolled as students in a PhD or equivalent research doctoral degree program at the time of application. While the term "diversity" can generally encompass many personal attributes and characteristics, this NIH Blueprint D-SPAN award program seeks to support NIH's interest in enhancing the participation of individuals from groups that are nationally underrepresented in biomedical research ([NOT-OD-15-053](#)). See Section III for additional information regarding eligibility for this program.

The D-SPAN F99/K00 award is intended for individuals from nationally underrepresented backgrounds who have demonstrated an interest in a neuroscience research career in [NIH Blueprint](#) mission-relevant areas and/or [BRAIN Initiative](#) research areas. At the time of award, applicants are expected to require 1-2 years to complete their PhD dissertation research training (F99 phase) before transitioning to mentored postdoctoral research training (K00 phase). **Consequently, applicants are expected to propose an individualized research training plan for the next 1-2 years of dissertation research training and a plan for 3-4 years of mentored postdoctoral research training and career development activities that will prepare them for independent neuroscience-focused research careers.**

The D-SPAN F99/K00 award is meant to provide up to 6 years of support in two phases. The initial phase (F99) will provide support for the final 1-2 years of dissertation research in a neuroscience related field (including experiments, dissertation preparation) and the search for/selection of a postdoctoral mentor. The two award phases are intended to be continuous in time. The second phase (K00) will provide up to 4 years of mentored postdoctoral research career development support and is contingent upon successful completion of the doctoral degree requirements. A K00 award will be made only to a PD/PI who has successfully completed the F99-supported training, secured an appropriate postdoctoral position, and has provided the NIH Blueprint oversight committee with a strong research and career development plan that will occur in a supportive and competitive research environment.

Awards: For the F99 phase, award budgets are composed of stipends, tuition and fees, and institutional allowance, as described below. For the K00 phase, award budgets are composed of salaries and fringe benefits, research and career development support, and indirect costs. NIH Blueprint will contribute up to \$50,000 toward the salary of the career award recipient.

Letter of Intent: 30 days prior to the application due date

Deadline: December 13, 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: NCI Outstanding Investigator Award (R35)

Agency: National Institutes of Health PAR-17-494

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-17-494.html>

Brief Description: The purpose of the National Cancer Institute (NCI) Outstanding Investigator Award is to provide long-term support and increased flexibility for investigators with outstanding records of research productivity to continue or to embark upon a research program of unusual potential in cancer. Candidates for the OIA must be nominated by their applicant organization. Special features of the OIA include 7-year project periods; the expectation that the OIA PD/PI commit at least 6 person months effort to the OIA; the expectation of clear and substantial Institutional commitment to the PD/PI, for example, providing 20% of salary support; and that

PD/PIs will be expected to renegotiate their time and effort on all other grant support, including NIH grants, in order to accommodate the OIA level of effort. It is expected that the OIA will replace current NCI funding on individual research grants. The NCI will only consider funding two additional research project grants to the Outstanding Investigator while the OIA is active. This limit includes single PD/PI, multiple PD/PI and multi-project grants where the OIA Investigator is the PD/PI.

Awards: Awards will be for \$600,000 direct costs per year, plus applicable Facilities and Administrative (F&A) costs to be determined at the time of award.

Letter of Intent: 30 days prior to the application due date

Deadline: November 28, 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: Exploratory Team-Research BRAIN Circuit Programs - eTeamBCP (U01)

Agency: National Institutes of Health RFA-NS-18-008

RFP Website: <https://grants.nih.gov/grants/guide/rfa-files/RFA-NS-18-008.html>

Brief Description: The broad goal of the BRAIN Initiative is to understand the circuits and patterns of neural activity that give rise to mental experience and behavior, which will provide a foundation for understanding and treating diverse neurological, psychiatric, and behavioral disorders. It is the dynamic activity of massively interconnected ensembles of neurons in specially organized networks that give rise to the internal states we experience as sensations, perceptions, emotions, thoughts, memories, and movements. The activity of these networks is the substrate of cognitive processes such as attention, intention, emotions, and rational processes such as reasoning and decision making. Ultimately, these covert, internal activities are translated into patterns of neural activation that lead to overt behaviors, from simple reflexes to highly coordinated movements such as reaching and walking, to more complex behaviors such as navigating the environment and foraging, or speech and language. Dysfunction of these large systems of neurons due to disease, injury or developmental anomaly are the basis of neural and mental disorders. The mission of the NIH BRAIN initiative is to understand how large scale neural systems contribute to cognitive and neurological function in both health and disease.

We can seek to understand circuits of the brain by systematically controlling stimuli and measuring the resulting behaviors, while actively recording and manipulating the dynamic patterns of neural activity. We now have transformational technologies that allow us to record large, interrelated ensembles of neurons on an unprecedented scale during active behaviors. For example, it is now possible to study the collective neural activities of entire sensory-motor circuits. By clever manipulation of environments and contingencies, we can devise behavioral tasks that engage memories, decision making, and selective attention, while documenting and manipulating the functional relationships within the neural circuits that subtend the behaviors.

Increasingly, sophisticated approaches are required for data acquisition, analysis, interpretation, and dissemination. These demanding requirements often involve expertise not typically associated with traditional neurobiological experiments and training, such as expertise in computer and information science, hardware and software engineering, statistics, machine learning, and computational methods. As new, large-scale, systems approaches become routine, it will be essential to develop testable theories of how information originating from millions of neurons in diverse and widespread brain regions can be integrated to produce a wide range of

motor, sensory and cognitive behaviors, and how this information evolves dynamically to adapt, refine and learn.

The purpose of this FOA is to provide resources for integration of experimental, analytic, and theoretical capabilities for large-scale analysis of neural systems and circuits within the context, and during the simultaneous measurement of complex behavior. We seek applications to build teams of experts for exploratory studies that integrate theory and modeling with new and emerging methods for recording and manipulating neural circuits across multiple brain regions, to elucidate a specific behavioral or neural system in terms of dynamic circuit activity. Novel and innovative approaches to theory and analysis are expected.

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

Letter of Intent: November 15, 2017

Deadline: December 15, 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: Collaborative Program Grant for Multidisciplinary Teams (RM1)

Agency: National Institutes of Health PAR-17-340

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-17-340.html>

Brief Description: This funding opportunity announcement (FOA) encourages Collaborative Program Grant applications from institutions/organizations that propose to conduct research to address complex and challenging biomedical problems, important for the mission of NIGMS, through deeply integrated, multidisciplinary research teams. The Collaborative Program Grant is designed to support research in which funding a team of interdependent investigators offers significant advantages over support of individual research project grants. Applications should address critical issues and be sufficiently challenging, ambitious, and innovative that objectives could not be achieved by individual investigators.

Background

Recent reports (e.g., [enhancing the effectiveness of team science](#)) have evaluated the benefits of a team science approach to scientific inquiry, and the need to create flexible funding opportunities that enable interdisciplinary research teams to accomplish goals that could not be achieved individually. The Collaborative Program Grant draws on our past experience and is designed to improve support for interdisciplinary collaborative research across different scientific domains. We also anticipate that these grants will enhance the diversity and interdisciplinarity of participating investigators, and may encourage early stage investigators (ESIs) to initiate short-term, complementary pilot studies that enrich the team's program objectives.

Scope of Research

Successful Collaborative Program Grant applications will bring together scientists to apply complementary approaches to work on an important and well-defined problem. Applications may address any area of science within the NIGMS mission, which is to support basic research that increases understanding of biological processes at a range of levels, from molecules and cells to tissues, whole organisms and populations. NIGMS also supports research in a limited number of clinical areas that affect multiple organ systems (see [here](#) for scientific areas supported by NIGMS). Truly new interdisciplinary ideas for approaching significant biological problems are encouraged. Applications that bridge the research interests of more than one NIGMS division are

also encouraged, but must remain within the scope of the NIGMS mission. Consultation with NIGMS staff (see below) prior to preparing an application is strongly encouraged.

Awards: While applications may request research program budgets of up to \$1.5 million direct costs per year, it is anticipated that most awards will be between \$700,000-\$900,000 direct costs. Inflationary adjustments are not allowed. The requested budget should be consistent with the number of PDs/PIs and the complexity and needs of the proposed program. In addition to the research program budget, an additional \$250,000 direct costs per year may be requested for optional exploratory pilot studies for ESIs.

Letter of Intent: 30 days prior to the application due date

Deadline: January 25, 2018; May 25, 2018; January 25, 2019; May 25, 2019; January 25, 2020; May 25, 2020, by 5:00 PM local time of applicant organization. All [types of non-AIDS applications](#) allowed for this funding opportunity announcement are due on these dates.

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

Grant Program: NIH Science Education Partnership Award (SEPA)(R25)

Agency: National Institutes of Health PAR-17-339

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-17-339.html>

Brief Description: The over-arching goal of this NIGMS R25 program is to support educational activities that complement and/or enhance the training of a workforce to meet the nation's biomedical, behavioral and clinical research needs. To assure the vitality and continued productivity of the research enterprise, the NIGMS provides leadership in training the next generation of scientists, in enhancing the diversity of the scientific workforce and in developing research capacities throughout the country. The SEPA program supports P-12 and informal science education (ISE) activities that: (1) enhance the diversity of the biomedical, behavioral and clinical research workforce and (2) foster a better understanding of NIH-funded biomedical, behavioral and clinical research and its public health implications. Applications that target P-12 or ISE topics that may not be addressed by existing school, community or ISE-based activities are encouraged. Proposed projects may focus on any area of NIH-funded research.

To accomplish the stated over-arching goal, this FOA will support creative educational activities with a primary focus on:

- **Courses for Skills Development:** For example, advanced courses in a specific discipline or research area, clinical procedures for research, or specialized research techniques.
- **Research Experiences:** For example, for undergraduate students: to provide hands-on exposure to research, to reinforce their intent to graduate with a science degree, and/or to prepare them for graduate school admissions and/or careers in research; for graduate and medical, dental, nursing and other health professional students: to provide research experiences and related training not available through formal NIH training mechanisms; for postdoctorates, medical residents and faculty: to extend their skills, experiences, and knowledge base; for high school and college science teachers: to enhance their science teaching.
- **Mentoring Activities:** For example, dedicated efforts at providing not only technical expertise, but advice, insight, and professional career skills to college students, graduate students, postdoctorates and/or early-career faculty.
- **Curriculum or Methods Development:**
- Innovative and inquiry-based P-12 curricula that will increase student interest in Science, Technology, Engineering and Mathematics (STEM) topics, understanding of the scientific

research process and motivation to pursue careers in basic and medical research. example, to improve biomedical, behavioral or clinical science education, or develop novel instructional approaches or computer-based educational tools.

- Citizen or Crowd-Sourced projects where non-scientists participate in scientific research either alone or in collaboration with scientists.
- Maker Movement projects where students and teachers learn by "doing" or "making" in or outside the classroom.
- Veterinarian-based P-12 projects or ISE exhibits that will encourage students to consider careers in veterinary medicine or projects designed to educate students, Teachers, and the community on the need for, and the ethical use of, animals in research.
- Curriculum or Methods Development activities for P-12 Teachers that provide instruction in novel approaches to STEM curriculum that challenge the current knowledge base of pedagogy and problem based learning
- Interactive digital media (IDM)-based projects where scientists partner with educators and developers to create learning resources for P-12 students, Teachers and the public. IDM applications may include, but are not limited to: interactive curricula; attitude changes towards learning; new skills development; teamwork and group activities; public participation in scientific research (citizen science) projects and behavioral changes in lifestyle and health Community-Based Participatory Research
- (CBPR) projects on important health prevention issues such as obesity, diabetes and cardiovascular disease.
- Public service announcements, documentaries, films, radio, TV and other media-based community health literacy resources.
- Science center and museum-based exhibits, traveling exhibits and public outreach activities e.g., Science Cafes and Community Health Fairs, that will educate students, Teachers and the community on health-related topics.

Awards: Direct costs are limited to \$250,000 annually.

Letter of Intent: 30 days prior to the application due date

Deadline: November 20, 2017; July 9, 2018; July 9, 2019 , by 5:00 PM local time of applicant organization. All [types of 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: Innovative Approaches or Technologies to Investigate Regional, Structural and Functional Heterogeneity of CNS Small Blood and Lymphatic Vessels (R01)

Agency: National Institutes of Health RFA-NS-18-003

RFP Website: <https://grants.nih.gov/grants/guide/rfa-files/RFA-NS-18-003.html>

Brief Description: Small vessels (arterioles, venules, capillaries and lymphatic microvessels), generally <100 μm in internal diameter, are essential to the function of virtually every cell in the central nervous system (CNS, which includes retina) by providing oxygen and nutrients, in addition to a rich source of signaling and trophic factors. Considering the vital importance of the blood supply for the structural and functional integrity of the CNS, it is not surprising that small vessels have been implicated in numerous diseases. Yet, CNS small vessel cellular and molecular mechanisms related to homeostasis and/or injury response, their role in the pathophysiology of disease, and how differences among segments of the CNS vascular tree affect susceptibility to disease and the tissue-vascular units are poorly understood. The ubiquitous nature of small

vessels combined with their heterogeneous structure and function have been major impediments to a comprehensive understanding of the importance of these vessels in health and disease and represent an unrealized medical opportunity.

Because the brain has no energy reserve, it requires a precise matching of metabolic demand with microvascular density and function. Therefore, small changes in capillary diameters and autoregulation can lead to large changes in blood flow, which are of high significance both for immediate brain function and for maintaining brain health over the life course.

The poor accessibility of small vessels in the brain is a major barrier to research. For example, pathological analyses demonstrate that cerebral microinfarcts are the most widespread form of vascular lesion in the human brain, but most microinfarcts are still invisible to MRI analyses. It also remains challenging to study the blood-tissue barriers during life, and it is unclear in most instances whether cerebrovascular changes, including breakdown of the blood-brain or blood-retinal barriers, initiate or drive events that lead to neuronal injury, disrupted structural and functional brain connectivity, early neurological symptoms, vision impairment or blindness.

To a limited extent, the importance of small blood vessels has been recognized in some arenas but further progress is needed to improve scientific knowledge, as well as clinical practice. For example, advances in digital retinal imaging have facilitated accurate and reliable measurements of the retinal vasculature, and branching geometry, providing measures of how effectively the vascular network fills the retinal space. Understanding the mechanisms underlying region-specific differences in the CNS "vasculome" and in blood-brain barrier permeability may offer important insights into disease mechanisms, biomarkers and therapeutic targets.

This initiative will take advantage of recent advances to facilitate the development of tools and technology to characterize CNS small blood and lymphatic vessels and/or to elucidate the mechanisms underlying their structural and functional heterogeneity, complex local specialization, differential susceptibility to injury, and their role in disease and repair processes. Applications can be focused on the development of new technology and tools, novel mechanistic studies, or a combination of mechanistic and technology development studies specific to CNS small blood and lymphatic vessels in health and disease, across the life span. If successful, this initiative will allow the identification of novel and specific markers of CNS small vessels and enable the integration of traditional neurobiology with new knowledge about the CNS vasculature, which will help to better understand CNS function and treat diseases.

Preclinical studies using in vitro and/or animal models specific to CNS small blood and lymphatic vessels alone or in combination with pilot human studies are appropriate for this FOA.

Multidisciplinary teams with complementary expertise (for example in CNS cutting-edge imaging, neurovascular biology, immunology, biomarker development, etc.) are encouraged to apply. Both mechanistic studies using innovative approaches and proposals aimed at developing novel tools or technology specific to CNS small blood and lymphatic vessels will be in scope.

Awards: Application budgets are limited to \$400,000 direct costs/year and need to reflect the actual needs of the proposed project.

Letter of Intent: November 11, 2017

Deadline: December 11, 2017), by 5:00 PM local time of applicant organization. All [types of non-AIDS applications](#) allowed for this funding opportunity announcement are due on this date.

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

Grant Program: High Impact Neuroscience Research Resource Grants (R24)
Agency: National Institutes of Health RFA-NS-18-006

RFP Website: <https://grants.nih.gov/grants/guide/rfa-files/RFA-NS-18-006.html>

Brief Description: Research project grants such as the R01 provide funding for development of new technologies and resources. However, funding opportunities for making resources available to the research community are more limited, even though such activities can be critical for research progress. The goal of this FOA is to address this need by supporting innovative and high impact projects to make resources, tools and techniques available to neuroscience researchers.

Projects responsive to this FOA should engage one or more of the following types of activities:

- Propagation of recently developed, cutting edge reagents or techniques that are not widely available or easily obtained
- Broadening the impact of important existing resources by bringing them to new user groups for whom access would not otherwise be available
- Innovative approaches to increase the scale and efficiency of existing valuable resources.

The following categories of resources may be appropriate for this FOA, provided that the proposed resource concords with the types of high impact activities described above: animal models, animal surgery, behavioral testing, specialized cell culture, histochemistry, specialized imaging or microscopy, pathology, physiology, molecular/genetic tools and statistical/computational analysis.

Applicants are strongly encouraged to contact NINDS Program staff and/or the Scientific/Research Contact for this FOA ([Section VII](#), below) to discuss the potential relevance of a particular resource to this FOA.

Proposed projects must plan to substantially impact the quality of neuroscience research by virtue of the provided resources. Existing efforts are responsive to this FOA provided the application proposes specific plans for new high impact activities that would not otherwise be feasible. Technical improvements to existing strategies can be proposed if they enable or increase the scale and efficiency of dissemination. Efforts must be in support of the NINDS [mission](#).

Awards: The combined budget for direct costs for the entire project period may not exceed \$700,000. No more than \$350,000 may be requested in any single year.

Letter of Intent: 30 days prior to the application due date

Deadline: February 9, 2018, 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 Medical Simulation and Information Sciences, Toward A Next-Generation Trauma Care Capability: Foundational Research for Autonomous, Unmanned, and Robotics Development of Medical Technologies (FORwARD) Award

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

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

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

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

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

Proposal Deadline: February 05, 2018

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

Grant Program: FY18-FY22 Broad Agency Announcement for Extramural Medical Research

Agency: Department of Defense Dept. of the Army – USAMRAA W81XWH18SBAA1

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

Brief Description: The United States Army Medical and Materiel Command's (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 the 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. Extramural research and development programs play a vital role in the fulfillment of the objectives established by the USAMRMC. General information on the USAMRMC can be obtained at <http://mrmc.amedd.army.mil/>. The USAMRMC Fiscal Year 18 – Fiscal Year 22 (FY18-FY22) Broad Agency Announcement (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 the 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 the 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. The BAA provides a general description of the 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 the BAA. The FY18-FY22 USAMRMC BAA is continuously open for a 5-year period, from October 1, 2017 through September 30, 2022, 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 5-year period. If the USAMRMC is interested in receiving a full proposal/application, the Principal Investigator 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 FY18-FY22 BAA through September 30, 2022.

Awards: Funding available

Proposal Deadline: September 30, 2022

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

Grant Program: DoD Hearing Restoration Research Program Focused Research Award

DoD Hearing Restoration Research Program Translational Research Award

Agency: Department of Defense Dept. of the Army -- USAMRAA

W81XWH-17-HRRP-FRA; W81XWH-17-HRRP-TRA

Website: <https://www.grants.gov/web/grants/view-opportunity.html?oppId=297413>

Brief Description: The FY17 HRRP FRA is intended to support functional hearing restoration research that develops and validates assessment techniques and treatment methods using patient-centric outcomes to identify potential predictive indicators for successful treatment of individuals living with functional auditory system deficits. The research in this area should result in refined diagnostic tools and improved evaluation of the effectiveness of therapeutic approaches. Applications involving multidisciplinary collaborations among academia, industry, the military Services, the VA, and other Federal Government agencies are highly encouraged. Under this award mechanism, research may support correlative or observational studies that are associated with an ongoing or completed clinical trial.

The FY17 HRRP TRA mechanism is being offered in this first year of the program to support preclinical translational research that will accelerate the movement of promising initiatives relevant to hearing restoration into clinical applications. The ultimate goal of translational research is to move an observation forward into clinical application and accelerate the clinical introduction of healthcare products, technologies, or practice guidelines. Observations that drive a research idea may be derived from a laboratory discovery, population-based studies, or a clinician's first-hand knowledge of patients and anecdotal data. However, Principal Investigators (PIs) should not view translational research as a one-way continuum from bench to bedside. The research plan should involve a reciprocal flow of ideas and information between basic and clinical science.

Awards: Funding available: \$6,400,000

Proposal Deadline: November 15, 2017

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

Grant Program: DoD Psychological Health/ Traumatic Brain Injury Research Program, Complex Traumatic Brain Injury Rehabilitation Research Clinical Research Award

Agency: Department of Defense Dept. of the Army -- USAMRAA

W81XWH-17-CTRR-CRA

Website: <http://cdmrp.army.mil/funding/pa/FY17-PHTBI-CTRR-CTA.pdf>

Brief Description: The PH/TBIRP and JPC-8/CRM RP seek innovative rehabilitation research that has the potential to make a significant impact on improving the health and well-being of military Service members, Veterans, and other individuals with TBI. The programs challenge the clinical and scientific communities to design innovative research that will foster new directions for, and address neglected issues in, the field of TBI rehabilitation research. Applications from investigators within the military Services, and applications involving multidisciplinary collaborations among academia, industry, the military Services, the U.S. Department of Veterans Affairs (VA), and other Federal Government agencies are highly encouraged.

The FY17/18 PH/TBIRP CTRR-CTA seeks research focused on potential interventions relevant to the mission of the JPC-8/CRM RP. To meet the intent of the award mechanism, applications must be responsive to one or both of the following two FY17/18 PH/TBIRP CTRR-CTA Focus Areas:

1. Cognitive Rehabilitation: Cognitive rehabilitation-focused clinical trials should generate new knowledge to confirm whether novel or standard-of-care rehabilitation interventions are effective in remediating cognitive impairments (e.g., memory, processing speed, executive functioning) and functional limitations after TBI. Applications specifically addressing barriers to participation in Service members with TBI are strongly encouraged.

2. Vestibular Rehabilitation and Mechanisms of Recovery: Vestibular rehabilitation-focused clinical trials should generate new knowledge to remediate symptoms (e.g., dizziness, vertigo, motion intolerance), impairments (e.g., gaze, postural and dynamic instability), functional limitations, and barriers to participation (e.g., readiness to return to duty) associated with post-traumatic dizziness and/or vestibular pathology in patients with TBI. Applications should include a plan to collect data across a broad range of functional outcomes including standard-of-care DoD outcome measures. Applications are encouraged to include one or more aims that objectively characterize neurologic mechanisms of recovery associated with novel and/or standard-of-care vestibular rehabilitation interventions; include data obtained in a sample of active duty military personnel, and advance understanding of rehabilitation prescription (to include frequency, intensity, time, and type of therapeutic exercise).

Awards: The anticipated total costs budgeted for the entire period of performance for an FY17/18 PH/TBIRP CTRR-CTA will not exceed \$2.5 Million (M) for awards responding to the Vestibular Rehabilitation and Mechanisms of Recovery Focus Area or \$4.0M for awards responding to the Cognitive Rehabilitation Focus Area.

Proposal Deadline:

Pre-Application Submission Deadline: 5:00 p.m. Eastern time (ET), October 11, 2017

- Invitation to Submit an Application: November 10, 2017
- Application Submission Deadline: 11:59 p.m. ET, December 27, 2017

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

Grant Program: Young Faculty Award (YFA)

Agency: Department of Defense DARPA DARPA-RA-17-01

Website: <https://www.darpa.mil/news-events/2017-09-07>

Brief Description: The YFA program aims to identify and engage rising stars in junior faculty positions in academia as well as equivalent positions at non-profit research institutions and expose them to national security challenges and needs. The 2018 solicitation will provide high-impact funding to elite researchers early in their careers to develop innovative research directions that enable transformative Department of Defense (DoD) capabilities. The long-term

goal of YFA is to develop the next generation of scientists and engineers who will focus a significant portion of their future careers on DoD and national security issues.

Eligibility: Participation in the YFA program is limited to any current tenure-track Assistant or Associate Professors and to tenured Assistant or Associate Professors within three (3) years of their tenure appointment at a U.S. institution of higher education or equivalent at a U.S. non-profit science and technology research institutions. Proposals are not being sought from foreign organizations. Previous YFA recipients are not eligible to apply to this or any future YFA program.

Focus Areas: The 26 YFA topic areas for 2018 are listed below. For detailed descriptions of each topic see Para. I. E., "Topic Areas (TAs)" on P. 6 of the YFA Research Announcement (DARPA-RA-17-01) available here: <https://go.usa.gov/xRFCZ>

1. Designing Ungameably Complex Games
2. Topological Photonics
3. Artificial Intelligence for Materials Discovery
4. Transformative Radiation Sensing
5. Engineered Interactions with the Energy of the Vacuum
6. Novel Methods for Nonsurgical Brain Interfaces
7. Self-forming Chronic Central Nervous System (CNS) Neural Interfaces
8. The Minimal Plant: Engineering Plants for Easy Biosynthetic Pathway Design with High Modularity
9. Antifouling Solutions for Large, Nonplanar Optical Surfaces
10. Replicating Cell-Cell Information Transfer
11. Programmable DNA Repair for Improved Genome Editing Outcomes
12. Efficient Integrated Nanophotonics
13. Adversarial Artificial Intelligence (AI)
14. Developing Intelligent Sensors for Fentanyl and Related Toxins
15. High Quality Atomic Traps and Waveguides
16. Wideband Efficiency in Millimeter Wave Power Amplifiers
17. Materials and Actuator Innovation for Small Scale Mobility and Manipulation
18. Reducing Software Attack Surface through Compiler-Rewriter Cooperation
19. Computational Models of the Spread of False or Misleading Information
20. Big Data Summarization
21. Decentralized Control of Networked Unmanned Autonomous Systems
22. REsilience through COmposable Logistics (RECOiL)
23. Wide Area Sensing Using the Internet of Things
24. Tactical Terrain Analysis
25. Thermostructural Sensitivity to Uncertainties
26. Swarm Intent Understanding

Awards: The Research Announcement (RA) solicitation seeks grant proposals for research activity consisting of a 24-month base period. Each 12-month interval of the base period should not exceed \$250,000. Proposals should also include a 12-month option period with a maximum funding level of \$500,000. The 12-month option period, referred to as the "Director's Fellowship," will be reserved for a limited number of awardees who demonstrate exceptional YFA project performance over the 24-month base period. A target start date of July 2018 may be assumed for planning purposes.

Proposal Deadline: Executive summaries are due Oct. 2, 2017, at 4 p.m. Eastern Time, and full proposals are due Dec. 4, 2017, at 4 p.m. Eastern Time..

Contact Information: For all submission details, including eligibility, please refer to the RA here: <https://go.usa.gov/xRFCZ>

Department of Energy

Grant Program: Generation 3 Concentrating Solar Power Systems

Agency: Department of Energy DE-FOA-0001697

Website: <https://www.energy.gov/eere/sunshot/funding-opportunity-announcement-generation-3-concentrating-solar-power-systems-gen3csp>

Brief Description: The U.S. Department of Energy’s (DOE) Energy Efficiency and Renewable Energy (EERE) Solar Energy Technology Office (SETO) is seeking applications under this Funding Opportunity Announcement (FOA) to fund applied research and development to enable the reduction of the levelized cost of electricity (LCOE) generated by concentrating solar power (CSP) to 6 ¢/kWh-electric or less, without subsidies. This FOA intends to develop integrated thermal system solutions to overcome the temperature limitations of current CSP systems, while lowering capital costs by enabling the use of advanced turbines and achieving a higher overall system efficiency in converting solar thermal energy into electricity. Applications to this FOA are expected to advance individual high temperature components which have been developed at lab scale, and test them as an integrated system at a multi-MW thermal scale that can accept solar thermal energy, store it, and efficiently deliver it to a working fluid at high temperature, representative of a high efficiency power cycle.

Submission Deadline:

Submission Deadline for Mandatory Concept Papers:	October 27, 2017 5:00pm ET
Submission Deadline for Full Applications:	January 19, 2018 5:00pm ET

Contact Information: EERE-ExchangeSupport@Hq.Doe.Gov

Grant Program: RFI: Solar Energy Technology Analysis & Data Needs

Agency: Department of Energy DE-FOA-0001818

Website: <https://eere-exchange.energy.gov/#Foald2f31dbc5-6e1c-469a-a85b-dd174b90e0c2>

Brief Description: The Solar Energy Technologies Office (SETO), in the Office of Energy Efficiency and Renewable Energy (EERE) of the U.S. Department of Energy (DOE), is requesting input on integrated data and analysis needs across the solar value chain to inform near to mid-term plans for the development of information based network planning, real time optimization, and bankability tools in the context of the SunShot 2030 goals. SETO aims to better understand the information-related problems and questions that exist for key stakeholders, including manufacturers, project developers, financiers, engineering procurement and construction businesses, state and local jurisdictions, researchers, analysts, and others supporting the technological advancement and wide scale adoption of solar technology.

RFI: Responses to this RFI must be submitted electronically to solaranalysis@ee.doe.gov no later than 5:00pm (ET) on October 6, 2017. Responses must be provided as attachments to an email. It is recommended that attachments with file sizes exceeding 25MB be compressed (i.e., zipped) to

ensure message delivery. Messages that are over 25MB, even after compression, will not be delivered. Responses must be provided as a Microsoft Word (.docx) attachment to the email, and no more than 10 pages in length, 12 point font, 1 inch margins. Only electronic responses will be accepted.

Deadline: October 06, 2017

Contact Information: EERE-ExchangeSupport@Hq.Doe.Gov

Grant Program: Advanced Power Electronics Design for Solar Applications

Agency: Department of Energy DE-FOA-0001740

Website: <https://eere-exchange.energy.gov/Default.aspx#FoalId53bdf98a-0c8e-4bc1-9a5c-81810df79f69>

Brief Description: This Funding Opportunity Announcement (FOA) will fund research that can enable significant reductions in the lifetime costs of power electronics (PE) for solar photovoltaic (PV) energy that align with meeting the SunShot 2030 goals, and likewise enable versatile control functionalities to support grid integration of solar PV for enhanced grid services. Power electronics technology is fundamental for renewable energy systems, and especially for solar PV as the critical link between solar PV arrays and the electric grid.

In comparison to the state of the art, the SunShot Initiative seeks to fund early-stage solar PE research projects to enable the following objectives:

- 1) Lower the lifetime cost of residential, commercial, and utility-scale solar PV inverter/converter solutions;
- 2) Develop innovative modular, multi-purpose solar PV power electronics designs that offer enhanced services for improved lifetime value and lower grid integration costs.

The eXCHANGE system is currently designed to enforce hard deadlines for Concept Paper and Full Application submissions. The APPLY and SUBMIT buttons automatically disable at the defined submission deadlines. The intention of this design is to consistently enforce a standard deadline for all applicants.

Applicants that experience issues with submissions PRIOR to the FOA Deadline: In the event that an Applicant experiences technical difficulties with a submission, the Applicant should contact the eXCHANGE helpdesk for assistance (exchangehelp@hq.doe.gov). The eXCHANGE helpdesk and/or the EERE eXCHANGE System Administrators will assist the Applicant in resolving all issues. Applicants that experience issues with submissions that result in a late submission: In the event that an Applicant experiences technical difficulties with a submission that results in a late submission, the Applicant should contact the eXCHANGE helpdesk for assistance (exchangehelp@hq.doe.gov). The eXCHANGE helpdesk and/or EERE eXCHANGE System Administrators will assist the Applicant in resolving all issues (including finalizing the submission on behalf of and with the Applicant's concurrence). DOE will only accept late applications when the Applicant has a) encountered technical difficulties beyond their control; b) has contacted the helpdesk for assistance; and c) has submitted the application through eXCHANGE within 24 hours of the FOA's posted deadline.

Award: Up to \$500,000; Available Funding: \$24,000,000.

Letter of Intent: Concept Paper Submission Deadline: 10/12/2017 5:00 PM ET

Proposal Deadline: Full Application Submission Deadline: 12/15/2017 5:00 PM ET

Contact Information: EERE-ExchangeSupport@Hq.Doe.Gov

NASA

Grant Program: Use of the NASA Physical Sciences Informatics System - Appendix D

Agency: NASA NNH17ZTT001N-17PSI-D

Website:

<https://www.fbo.gov/index?s=opportunity&mode=form&tab=core&id=a3086df0e6b38ec720476107b522fd90>

Brief Description: This National Aeronautics and Space Administration (NASA) Research Announcement (NRA) solicits ground-based research proposals from established researchers and graduate students to generate new scientific insights by utilizing experimental data residing in NASA's Physical Sciences Informatics (PSI) system (<http://psi.nasa.gov>), an online database of completed physical science reduced-gravity flight experiments conducted on the International Space Station (ISS), Space Shuttle flights, and Free-flyers, or from related ground-based studies. The solicitation (NNH17ZTT001N-17PSI-D), entitled "Use of the NASA Physical Sciences Informatics System - Appendix D," will be available on or about September 15, 2017. Upon release, the solicitation will be found via the following steps: 1. Open the NSPIRES homepage at <http://nspires.nasaprs.com/> 2. Select "Solicitations" 3. Select "Open Solicitations" 4. Select "Use of the NASA Physical Sciences Informatics System NNH17ZTT001N" 5. Select List of Open Program Elements 6. Select "Use of the NASA Physical Sciences Informatics System - Appendix D" 7. Select "Appendix D NNH17ZTT001N-17PSI-D" under Announcement Documents. NASA plans to host a proposers' conference via WebEx shortly after the release of the Appendix to provide more information and to answer questions about the NRA and the PSI system. NASA's Physical Sciences Research Program conducts fundamental and applied physical sciences research, with the objective of enabling exploration and pioneering scientific discovery. NASA's experiments in the various disciplines of physical science reveal how physical systems respond to the near absence of gravity. They also reveal how other phenomena which have a small influence on physical systems in earth's gravity, can dominate system behavior in space. The PSI system (<http://psi.nasa.gov>) is an online, publicly accessible database of completed physical science reduced-gravity flight experiments conducted on the ISS, Space Shuttle flights, or Free Flyers and related ground-based studies. It is a tool designed for researchers to data mine information from reduced-gravity physical sciences experiments and use it to further science in accordance with the open science approach, while also meeting the requirements of the nation's Open Data Policy. This NRA solicits ground-based research proposals that present a compelling case on how the experimental data from the PSI system will be used to promote the advancement of further research. Proposers must show a clear path from the scientific data obtained from the PSI system to the proposed investigation. In addition, the project must address an important problem in the proposed area of research and advance scientific knowledge or technology. This NRA will remain open for five years. There will be annual call for proposals through a series of appendices which are planned to be released yearly. In general, the NRA solicits research in the following six research areas: 1) Biophysics, 2) Combustion Science, 3) Complex Fluids, 4) Fluid Physics, 5) Fundamental Physics, and 6) Materials Science. This announcement includes Appendix D, which will solicit proposals in several research areas identified above. See the full Appendix D for the list of the research areas solicited and eligible PSI investigations. Proposals for Appendix D are due on or about December 15, 2017. This solicitation is applicable to researchers in all categories of U.S. and non-U.S. organizations, including educational institutions, industry, nonprofit organizations, NASA Centers and other U.S. Government agencies. This NRA is soliciting proposals from two types of investigators: 1) established researchers, including postdoctoral scholars; 2) graduate students (with academic advisors) from accredited U.S. postsecondary institutions and programs.

Proposals from graduate students must be submitted by their advisor. Principal Investigators (PIs) may collaborate with investigators from universities, Federal Government laboratories, the private sector, state and local government laboratories, and other countries. Proposals including international participation are eligible, provided NASA policies regarding the conduct of research with non-U.S. organizations are met. Proposals must be submitted by an authorized official of the proposing organization. Proposals must be submitted electronically. Proposers may use either NSPIRES (<http://nspires.nasaprs.com/>) or Grants.gov (<http://www.grants.gov>) for proposal submission. Every organization that intends to submit a proposal in response to this NRA must be registered with NSPIRES, and such registration must identify the authorized organization representative(s) who will submit the electronic proposal. Instructions on how to register in NSPIRES are provided in the NRA. Each electronic proposal system places requirements on the registration of principal investigators and other participants (e.g., co-investigators). Potential proposers and proposing organizations are urged to access the system(s) well in advance of the proposal due date(s) to familiarize themselves with its structure and enter the requested information. Questions with regard to responding to this NRA may be addressed to the contacts referenced in the full solicitation document. This is a broad agency announcement as specified in FAR 6.102 (d)(2).

Awards: TBA

Response Deadline: December 15, 2017

Contact: Dr. Francis Chiamonte, Program Scientist for Physical Sciences
francis.p.chiamonte@nasa.gov Phone: 202-358-0693

National Endowment of Humanities

Grant Program: Next Generation Humanities PhD Planning Grants

Agency: National Endowment of Humanities

Website: <https://www.neh.gov/grants/education/next-generation-humanities-phd-planning-grants>

Brief Description: Next Generation Humanities PhD Planning Grants support universities in preparing to institute wide-ranging changes in humanities doctoral programs. Humanities knowledge and methods can make an even more substantial impact on society if students are able to translate what they learn in doctoral programs into a multitude of careers. Next Generation PhD Planning Grants are designed to bring together various important constituencies to discuss and strategize, and then to produce plans that will transform scholarly preparation in the humanities at the doctoral level. Students will be prepared to undertake various kinds of careers, and humanities PhD programs will increase their relevance for the twenty-first century.

Grantee institutions must provide funds raised from nonfederal third parties equal to the grant funds released by NEH.

Awards: NEH will offer successful applicants a 1:1 matching grant of up to \$25,000 for as long as twelve months. Thus the total grant will come to a maximum of \$50,000: up to \$25,000 raised by the grantee institution from nonfederal third parties, and up to \$25,000 provided by NEH..

Proposal Deadline:

November 1, 2017: Create or verify your institution's Entity record at the System for Award Management by this date

November 15, 2017: Register your institution (or verify its registration) with Grants.gov by this date

November 29, 2017: Submit application through Grants.gov by this date

Contact: Contact the staff of NEH's Division of Education Programs at 202-606-8500 or nextgen@neh.gov. Applicants who are deaf or hard of hearing can contact NEH via Federal Relay (TTY users) at 800-877-8399.

Grant Program: Summer Awards

Agency: National Endowment of Humanities

Website: <https://www.neh.gov/grants/research/summer-stipends>

Brief Description: Summer Stipends support individuals pursuing advanced research that is of value to humanities scholars, general audiences, or both. Eligible projects usually result in articles, monographs, books, digital materials and publications, archaeological site reports, translations, or editions. Projects must not result solely in the collection of data; instead they must also incorporate analysis and interpretation.

Summer Stipends support continuous full-time work on a humanities project for a period of two consecutive months. Summer Stipends support projects at any stage of development.

Awards: \$6,000 stipend.

Proposal Deadline: September 27, 2017 for Projects Beginning May 2018

Contact: Contact NEH's Division of Research Programs at 202-606-8200 or stipends@neh.gov

Bill and Melinda Gates Foundation

Grant Program: Grand Challenge Program

Agency: Bill & Melinda Gates Foundation

Website: <https://gcgh.grandchallenges.org/>

Brief Description: The Bill & Melinda Gates Foundation is inviting proposals for the latest round of Grand Challenges Explorations. [Grand Challenges Explorations](#) fosters early-stage discovery research to expand the pipeline of ideas for solving our greatest global health and development challenges. Launched in 2008 with an initial \$100 million commitment from the foundation, Grand Challenges Explorations grants have already been awarded to more than 1300 researchers in more than 65 countries.

- [Novel Approaches for Improving Timeliness of Routine Immunization Birthdose and Healthcare Worker Skill in Low-Resource Settings](#);
- [Healthy Minds for Adolescent Mothers: Achieving Healthy Outcomes for the Family](#);
- [Innovations for Integrated Diagnostics Systems](#)

Awards: [Grand Challenges Explorations](#) is an initiative where initial grants are for USD \$100,000 and successful projects are eligible to receive follow-on funding of up to USD \$1 million. Proposals are solicited twice a year for an expanding set of global health and development topics. Applications are only two pages, and no preliminary data is required. Applicants can be at any experience level; in any discipline; and from any organization, including colleges and universities, government laboratories, research institutions, non-profit organizations and for-profit companies.

Proposal Deadline: Wednesday, November 8, 11:30 am Pacific Time

Contact: For more information, please also contact Eric Blitz, Associate Director for Development Corporate and Foundation Relations, eric.blitz@njit.edu

Streamlyne Update

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

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

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

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

Also, the following links may be helpful:

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

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

John McCarthy, NCE Director of Research
(973) 596-3247; john.p.mccarthy@njit.edu

Cristo Leon, CSLA Director of Research
(973) 596-6426; cristo.e.yanezleon@njit.edu

Nancy Henderson, CCS Project Manager
973-596-5687; nancy.henderson@njit.edu
Iris Pantoja, CoAD and SOM Project Manager
973-596-4483; irp3@njit.edu
