

NJIT Research Newsletter

Issue: ORN-2017-37

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 2
NSF NRT and MRI Internal Competition: Page 3
Recent Awards: Page 7
In the News (Related to research funding): Page 8
Webinars and Events: Page 10
Grant Opportunities: Page 11
Streamlyne Update: Page 33

Special Announcements

Limited Submissions Internal Competitions: NSF NRT and MRI Programs

(Please see next section)

NJIT Research Events

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 Professor of Neurology at Harvard Medical School will be the 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: NSF National Science Foundation Research Traineeship (NRT) Program; Major Research Instrumentation Program: (MRI); Enabling Discovery through GENomic Tools (EDGE); International Research Experiences for Students (IRES); Dynamics of Coupled Natural and Human Systems (CNH); Collaborative Research in Computational Neuroscience (CRCNS); Condensed Matter and Materials Theory (CMMT)

NIH: BRAIN Initiative: Theories, Models and Methods for Analysis of Complex Data from the Brain (R01); Program: Fundamental Science Research on Mind and Body Approaches (R21); Innovation Corps (I-Corps™) at NIH Program for NIH and CDC Translational Research (Admin Supp); BRAIN Initiative: Proof of Concept Development of Early Stage Next Generation Human Brain Imaging (R01); BRAIN Initiative: Targeted BRAIN Circuits Projects- TargetedBCP (R01); BRAIN Initiative: Exploratory Research Opportunities Using Invasive Neural Recording and Stimulating Technologies in the Human Brain (U01)

Department of Defense/US Army/DARPA/ONR: 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

Department of Energy: FY2018 Scientific Infrastructure Support for CINR Funding Opportunity Announcement; State Energy Program 2017 Competitive Awards

NASA: Use of the NASA Physical Sciences Informatics System

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

The Lemelson Foundation: Lemelson-MIT Prize

Henry Luce Foundation: HERS-CBL Scholarships

Streamlyne Update: New How-to-do Videos

Internal Competition: National Science Foundation

NSF Limited Submission and Internal Competition Through College/School Deans

Grant Program: NSF National Science Foundation Research Traineeship (NRT) Program

Agency: National Science Foundation NSF 18-507

RFP Website: <https://www.nsf.gov/pubs/2018/nsf18507/nsf18507.htm>

Brief Description: The NSF Research Traineeship (NRT) program is designed to encourage the development and implementation of bold, new, and potentially transformative models for STEM graduate education training. The NRT program seeks proposals that explore ways for graduate students in research-based master's and doctoral degree programs to develop the skills, knowledge, and competencies needed to pursue a range of STEM careers.

The program is dedicated to effective training of STEM graduate students in high priority interdisciplinary research areas, through the use of a comprehensive traineeship model that is innovative, evidence-based, and aligned with changing workforce and research needs. For FY2018, proposals are requested in any interdisciplinary research theme of national priority, with special emphasis on two high priority areas: (1) Harnessing the Data Revolution (HDR) and (2) Innovations at the Nexus of Food, Energy, and Water Systems (INFEWS). HDR is expected to continue as a priority research area for FY2019 and FY2020 competitions, along with a new priority area to be announced in 2018.

The NRT program addresses workforce development, emphasizing broad participation, and institutional capacity building needs in graduate education. Strategic collaborations with the private sector, non-governmental organizations (NGOs), government agencies, national laboratories, field stations, teaching and learning centers, informal science centers, and academic partners are encouraged. NRT especially welcomes proposals that will pair well with the efforts of NSF INCLUDES to develop STEM talent from all sectors and groups in our society (https://www.nsf.gov/news/special_reports/nsfincludes/index.jsp). Collaborations are encouraged between NRT proposals and existing NSF INCLUDES projects, provided the collaboration strengthens both projects.

Limited Number of Submission: 2: An eligible organization may participate in two proposals per competition. **Participation includes serving as a lead organization, non-lead organization, or subawardee on any proposal.** Organizations participating solely as evaluators on projects are excluded from this limitation. Proposals that exceed the institutional eligibility limit (beyond the first two submissions based on timestamp) will be returned without review regardless of the institution's role (lead organization, non-lead collaborative, or subawardee) in the returned proposal.

Limit on Number of Proposals per PI or Co-PI: 1: An individual may serve as Lead Principal Investigator (PI) or Co-PI on only one proposal submitted to the NRT program per annual competition. Proposals that exceed the PI/Co-PI eligibility limit (beyond the first submission based on timestamp), will be returned without review regardless of the individual's role (PI or co-PI) in the returned proposal.

Awards Range: Standard Grant; **Anticipated Funding Amount:** \$36,100,000

Letter of Intent: Submission of Letters of Intent is required. Please see the full text of this solicitation for further information.

Submission Deadline:

- **Letter of Intent Due Date(s) (required)** (due by 5 p.m. submitter's local time):

November 27, 2017 - December 06, 2017

November 26, 2018 - December 06, 2018

November 25, 2019 - December 06, 2019

- **Full Proposal Deadline(s)** (due by 5 p.m. submitter's local time):

February 06, 2018

February 06, 2019

February 06, 2020

Contact: Laura B. Regassa, telephone: (703) 292-2343, email: lregassa@nsf.gov

- Tara L. Smith, telephone: (703) 292-7239, email: tsmith@nsf.gov

- Stephen Mulkey, telephone: (703) 292-8954, email: smulkey@nsf.gov

Internal Competition Deadline to College Dean's Office: November 15, 2017: Please submit a pre-proposal for internal competition in the following format to your Dean. Dens are requested to forward the pre-proposals with their recommendations to the Office of Research for institutional review by November 19, 2017. The pre-proposal should include:

Section 1. Letter of Intent (NSF Format): Submit a one-page LOI through FastLane during the open submission window with the following information:

- The name and departmental affiliation of the Principal Investigator (PI).
- The name(s) and departmental affiliation(s) of the Co-PI(s) and others composing the Core Participants (maximum 10).
- The names(s) of any other (non-lead) participating institutions or organizations. If the sole contribution of the partner is evaluation, then designate as "*Evaluation: institutional or organizational name*"; evaluators are exempt from institutional eligibility limits (see section IV). If there are partnering institutions, then the LOI MUST include the appropriate mandatory statement at the end of the project synopsis (see Project Synopsis below).
- Project Title: The title must begin with "NRT-HDR:" or "NRT-INFEWS:" for projects targeting the Harnessing the Data Revolution or Nexus of Food, Energy, and Water Systems research areas, respectively. Titles for projects addressing another interdisciplinary theme of national importance must begin with "NRT:". Any collaborative project with proposals from multiple institutions should begin with "Collaborative Research:". For example, a collaborative proposal in INFEWS would have a title beginning "Collaborative Research: NRT-INFEWS:"
- Project Synopsis (up to 2500 text characters including required organizational statement): Provide a brief summary of the vision and goals of the proposed training program, including a brief description of the interdisciplinary research theme, the main training elements, the integration of the research and training, and the need for the program. Add the appropriate **required partner organization statement** at the end of the project synopsis. If the project has a partner institution that is not solely an evaluator, then the following text must appear at the end of the project synopsis: "*The participating institutions and organizations have agreed to partner on this NRT project. The NRT-eligible institutions have been informed by the lead organization that serving as a non-lead organization or subawardee on a proposal where the institution appears in the budget will count toward their institutional eligibility limit of two NRT proposals per annual competition.*" NRT-eligible institutions are universities and colleges accredited in and having a campus located in the U.S. that award a research-based master's degree and/or a doctoral degree in a STEM discipline supported by the National Science Foundation. If the project has no NRT-eligible partner institutions or if the only NRT-eligible institution solely has an evaluation role (and has been designated as such, see participating institution instructions above), then the following text is required at the end of the project synopsis: "*There are no NRT-eligible institutions partnering on this project outside of an evaluation role.*"
- Target Disciplines: List up to 5 primary disciplinary areas contributing to the research focus.

Section 2. Tentative Budget Summary: Please provide itemized budget for the entire duration

Section 3. Biographical Sketch of the PI (NSF Format)

Grant Program: NSF Major Research Instrumentation Program: (MRI)

Agency: National Science Foundation NSF 15-504

RFP Website: https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5260

<http://www.nsf.gov/pubs/2015/nsf15504/nsf15504.htm>

Brief Description: The Major Research Instrumentation Program (MRI) serves to increase access to shared scientific and engineering instruments for research and research training in our Nation's institutions of higher education, not-for-profit museums, science centers and scientific/engineering research organizations. The program provides organizations with opportunities to acquire major instrumentation that supports the research and research training goals of the organization and that may be used by other researchers regionally or nationally.

Each MRI proposal may request support for the acquisition (Track 1) or development (Track 2) of a single research instrument for shared inter- and/or intra-organizational use. Development efforts that leverage the strengths of private sector partners to build instrument development capacity at MRI submission-eligible organizations are encouraged.

The MRI program assists with the acquisition or development of a shared research instrument that is, in general, too costly and/or not appropriate for support through other NSF programs. The program does not fund research projects or provide ongoing support for operating or maintaining facilities or centers.

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

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

Cost-sharing of precisely 30% of the total project cost is required for Ph.D.-granting institutions of higher education and for non-degree-granting organizations. Non-Ph.D.-granting institutions of higher education are exempt from cost-sharing and cannot include it. National Science Board policy is that voluntary committed cost sharing is prohibited.

Limited Number of Submission: Three (3) as described below. (Expected from the previous solicitation NSF 15-504)

If three proposals are submitted, at least one of the proposals must be for instrument development (i.e., no more than two proposals may be for instrument acquisition).

Awards Range: \$100,000-\$4 million

Letter of Intent: Not Required

Submission Deadline: January 10, 2018

Internal Competition Deadline to College Dean's Office: November 7, 2017: Please submit up to 5 pages pre-proposal white paper to your respective Dean by November 7, 2017 in the following format. College level reviews will be conducted by Deans to forward recommendations for up to 2 proposals to the Office of Research and Development by November 15, 2017. The final selection will be announced by November 21, 2017. The following format for the pre-proposal is suggested which is consistent with actual proposal guidelines and review criterion:

1. Cover Sheet (not counted in the page limit):

- a. Title of the project proposal
- b. Track Type: I or II
- c. PI name and affiliation and contact information
- d. Co-PIs name and affiliation
- e. Additional users or any consortium information, if applicable
- f. Date submitted to College Dean

2. Project Summary

Each proposal must contain a summary of the proposed project not more than one page in length. The Project Summary consists of an overview, a statement on the intellectual merit of the proposed activity, and a statement on the broader impacts of the proposed activity.

3. Proposal Description covering the subsections (a)-(e) as posted on the previous RFP on <http://www.nsf.gov/pubs/2015/nsf15504/nsf15504.htm> with the section:

- (a) Information About the Proposal/Instrument
- (b) Research Activities to be Enabled
- (c) Description of the Research Instrumentation and Needs
- (d) Impact on Research and Training Infrastructure
- (e) Management Plan

For Instrument Development Proposals (Track-II)

The section (a) to (e) should be organized to address the following (as described in the RFP):

- (a) Describe the design, construction and commissioning phases of the project, including the work breakdown structure of the project activities (i.e., activities broken into tasks). Include a description of parts and materials, the estimated deliverables, associated timelines and the anticipated cost of each activity.
 - (b) Describe the technical expertise that is needed, and that will be available, to execute each activity. Describe the organization of the project staff and methods of assessing performance. For each member of the team, include a description of the responsibilities and explain why a given position is necessary for the completion of the design and construction of the new instrument.
 - (c) Assess the risks associated with each activity and describe potential methods for mitigating the risks, and for re-analyzing and modifying the project plan to keep it within scope, schedule and budget.
 - (d) Include plans for making the instrument design readily available to other researchers, for example by means of publications, by transferring the technology to other U.S. academic, industrial, or government laboratories, and/or by commercializing the instrument.
 - (e) Include plans for the long-term operations and maintenance of the instrument, including procedures for allocating time on the instrument if appropriate. Describe plans for attracting and supporting new users and information on anticipated usage and downtime if appropriate. Inclusion of a letter documenting the performing organization's commitment to operations and maintenance is required as a supplemental document.
4. Preliminary Budget and Budget Justification; and Required Cost-Sharing
 5. Brief biographical sketch of PI with a brief description of current and previous accomplishments.

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

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

Instrument Acquisition Proposals.

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

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

Instrument Development Proposals:

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

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

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

The appropriateness of the cost of the new technology.

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

Recent Research Grant and Contract Awards

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

PI: Gale Spak (PI)

Department: CPE

Grant/Contract Project Title: Construction and Utilities Talent Development Center

Funding Agency: NJ Dept. Of Labor & Workforce Development

Duration: 11/01/17-10/31/18

PI: Bipin Rajendran (PI)

Department: ECE

Grant/Contract Project Title: Non-von-Neumann Cognitive Hardware with Emerging NVMs Featuring On-Chip Learning-NJIT

Funding Agency: Semiconductor Research Corporation

Duration: 12/01/16-11/30/18

PI: Zoi-Heleni Michalopoulou (PI)

Department: Mathematical Sciences

Grant/Contract Project Title: Shallow Water Inversion with Optimization and Direct Methods

Funding Agency: ONR

Duration: 04/01/16-12/31/18

In the News...

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

F&A (Overhead or Indirect Cost) Rates Averages 55% Nationwide: Rep. Tom Cole (R-OK), who chairs the panel in charge of National Institutes of Health spending, "wants President Donald Trump's administration and fellow Republicans to drop the notion of capping overhead costs" at the agency. He contended that "less F&A would actually mean that the university could not afford to conduct even as much research as it currently does."

Table 1.1. Ten-year trend of annualized percent change in F&A rates for 107 U.S. research institutions. From [5].

Reporting Cohort & Survey Year	FY 2007	FY 2017	Annualized Percent Change
<i>Research Universities (average)</i>	<i>51.2</i>	<i>55.0</i>	<i>+ 0.8%</i>
<i>Research Universities (median)</i>	<i>50.3</i>	<i>54.5</i>	<i>+ 0.7%</i>

Source: Kelvin Droegemeier [prepared testimony](#).

Future OF NSF Engineering Research Centers (ERCs): How to implement the National Academy of Engineering's [recommendations](#) for National Science Foundation-backed Engineering Research Centers is generating more questions than answers. On building the centers around grand challenges, one option proposed by NAE, members of NSF's Engineering Directorate [Advisory Committee](#) asked: Which ones – the NAE's? The United Nations' Sustainable Development Goals? NSF's? According to our partners at Lewis-Burke Associates, the committee debated a number of report recommendations, including whether ERC teams should be self-formed by researchers and industry or be pulled together by NSF. More discussion is expected next week when center reps assemble for their biennial meeting. NSF has time to digest various views: It won't issue its next ERC request for proposals until September, 2018. Full report is posted on the website <https://www.nap.edu/catalog/24767/a-new-vision-for-center-based-engineering-research>

BRAINSTORMS: NIH is looking for "new theories, computational models, and statistical tools to derive understanding of brain function from complex neuroscience data. Proposed tools could include the creation of new theories, ideas, and conceptual frameworks to organize/unify data and infer general principles of brain function; new computational models to develop testable hypotheses and design/drive experiments; and new mathematical and statistical methods to support or refute a stated hypothesis about brain function, and/or assist in detecting dynamical features and patterns in complex brain data." While the NIH BRAIN initiative anticipates providing \$6M per year to fund up to 15 awards each year, the number of awards "is contingent upon NIH appropriations and the submission of a sufficient number of meritorious applications." [Find out more](#). See as well NSF's Collaborative Research in Computational Neuroscience program, extended for three years. The RFP is posted on the website <https://www.nsf.gov/pubs/2018/nsf18501/nsf18501.htm?org=NSF>

Intelligent Cognitive Machines: Look for [Intelligent Cognitive Assistants](#) – “platforms which augment human capabilities” – to potentially become a major NSF Engineering-led initiative, based on discussions by the Advisory Committee. Participants at an earlier interdisciplinary workshop “reached a consensus around the concept of Intelligent Cognitive Assistants that complement, rather than replace, human capabilities. These must respond and change flexibly to changing environmental and usage conditions, consider the human life course in their application, facilitate ‘natural’ interactions involving ‘common sense’ toolkits and intuitive interfaces, and ultimately cultivate trust in relations between humans and machines.”

NSF, Air Force Team Up on Microstructures: NSF's Division of Civil, Mechanical and Manufacturing Innovation (CMMI), in collaboration with the Air Force Office of Scientific Research (AFOSR), "seeks research proposals for multidisciplinary teams with the potential to transform fundamental understanding of structural materials through the quantitative representation of microstructures." The RFP/DCL is posted on the website <https://nsf.gov/pubs/2018/nsf18018/nsf18018.jsp>

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.

Webinar and Events

Event: NSF/Intel Partnership on Foundational Microarchitecture Research (FoMR) Webinar

Sponsor: NSF

When: November 7, 2017 from 2:00 PM to 3:00 PM

Website: <http://www.bio-itworld.com/applied-biomath/quantitative-modeling-and-simulation-approaches/>

Brief Description: NSF, in partnership with Intel, has released a new solicitation entitled "NSF/Intel Partnership on Foundational Microarchitecture Research (FoMR)" ([NSF 17-597](#)). This solicitation calls for proposals to be awarded in FY 2018. It will support transformative microarchitecture research targeting improvements in instructions per cycle (IPC). It seeks microarchitecture technique innovations beyond simplistic, incremental scaling of existing microarchitectural structures.

To join the webinar: please register at: <https://nsf.webex.com/nsf/j.php?RGID=r9907679bf92ed7ce1c9d1dd12532425a> by **midnight Monday November 6th**. After your registration is accepted, you will receive an email with a URL to join the meeting.

Event: BioIT Webinar: Quantitative Modeling and Simulation Approaches: Driving Critical Decisions from Research through Clinical Trials

Sponsor: Applied BioMath

When: November 7, 2017 from 1:00 PM to 2:00 PM

Website: <http://www.bio-itworld.com/applied-biomath/quantitative-modeling-and-simulation-approaches/>

Brief Description: Quantitative Systems Pharmacology (QSP) is a mathematical modeling and engineering approach to translational medicine that aims to quantitatively integrate knowledge about therapeutics with an understanding of its mechanism of action in the context of human disease mechanisms. QSP approaches de-risk projects, accelerate the development of best in class therapeutics, and reduce late stage attrition rates. This results in helping industry save money, accelerate timelines, and make better therapeutics, ultimately improving patients' lives.

In this webinar, two case studies will be discussed to highlight how QSP efforts in rheumatoid arthritis have accelerated the discovery and development of best-in-class therapeutics, and impacted critical decisions, in the continuum from preclinical exploration to clinical research. Specifically, we will show how QSP impacts:

- Biological understanding
- Lead generation
- Clinical candidate selection
- IND support
- Clinical trial go/no go decisions from industry

This webinar is ideal for scientists and decision makers in R&D who want to learn more about how to leverage QSP to provide quantitative guidance for their drug discovery and development.

To join the webinar: Please register at the above URL.

Event: EMC Simulation of Automotive Ethernet**When: November 2, 2017; 5:00 PM CET****Website:** https://www.cst.com/events/webinars/ethernet-2017?sc_campaign=F6AFCF84E3704B429D2ECB77F536F195&utm_source=ieee&utm_medium=listin g&utm_content=ethernet&utm_campaign=2017series

About the Webinar: The demand for high speed data transmission between electronics systems in modern vehicles has experienced a dramatic increase over the past years. The current generation of infotainment and ADAS systems already requires high data rates that are projected to grow even further in the future, fueled by trends like the upcoming introduction of connected and autonomous vehicles.

Automotive ethernet based on the BroadR-Reach technology is a promising candidate to become the standard high speed interface in vehicles. The current implementation offers a data rate of 100 Mbit/s over a single unshielded twisted pair cable, with plans to further increase it to 1000 Mbit/s. Unshielded twisted cables are lightweight and cost effective, however this comes at the cost of reduced EMC performance. The high data rates and the cable layout can pose significant challenges on designers of automotive electronics.

This webinar will present simulations of EMC related aspects of the automotive ethernet: the effect of the PCB layout on the emission from an automotive ethernet channel, crosstalk from the automotive ethernet channel to other cables inside one harness, and susceptibility of the channel based on the BCI testing method.

To join the webinar: Please register at the above URL.

Grant Opportunities

National Science Foundation

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partners are encouraged. NRT especially welcomes proposals that will pair well with the efforts of NSF INCLUDES to develop STEM talent from all sectors and groups in our society (https://www.nsf.gov/news/special_reports/nsfincludes/index.jsp). Collaborations are encouraged between NRT proposals and existing NSF INCLUDES projects, provided the collaboration strengthens both projects.

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- **Full Proposal Deadline(s)** (due by 5 p.m. submitter's local time): February 06, 2018

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Brief Description: The Major Research Instrumentation Program (MRI) serves to increase access to shared scientific and engineering instruments for research and research training in our Nation's institutions of higher education, not-for-profit museums, science centers and scientific/engineering research organizations. The program provides organizations with opportunities to acquire major instrumentation that supports the research and research training goals of the organization and that may be used by other researchers regionally or nationally.

Each MRI proposal may request support for the acquisition (Track 1) or development (Track 2) of a single research instrument for shared inter- and/or intra-organizational use. Development efforts that leverage the strengths of private sector partners to build instrument development capacity at MRI submission-eligible organizations are encouraged.

The MRI program assists with the acquisition or development of a shared research instrument that is, in general, too costly and/or not appropriate for support through other NSF programs. The program does not fund research projects or provide ongoing support for operating or maintaining facilities or centers.

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

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

Cost-sharing of precisely 30% of the total project cost is required for Ph.D.-granting institutions of higher education and for non-degree-granting organizations. Non-Ph.D.-granting institutions of higher education are exempt from cost-sharing and cannot include it. National Science Board policy is that voluntary committed cost sharing is prohibited.

Limited Number of Submission: Three (3) as described below. (Expected from the previous solicitation NSF 15-504)

If three proposals are submitted, at least one of the proposals must be for instrument development (i.e., no more than two proposals may be for instrument acquisition).

Awards Range: \$100,000-\$4 million

Letter of Intent: Not Required

Submission Deadline: January 10, 2018

Internal Competition Deadline to College Dean's Office: November 7, 2017: Please submit up to 5 pages pre-proposal white paper to your respective Dean by November 7, 2017 (please see page 4 for details about the internal submission).

Grant Program: Enabling Discovery through GENomic Tools (EDGE)

Agency: National Science Foundation NSF 18-506

RFP Website: <https://www.nsf.gov/pubs/2018/nsf18506/nsf18506.htm>

Brief Description: The Division of Integrative Organismal Systems (IOS) continues to support the Enabling Discovery through GENomic Tools (EDGE) program, previously a component of the IOS Core Programs solicitation ([NSF 16-505](#)). EDGE is designed to provide support for research addressing current impediments to research progress in organismal biology. In particular, the ability to directly test gene function is essential to improve understanding of the genomes-to-phenomes relationship, an area relevant to Understanding the Rules of Life, one of 10 Big Ideas for future NSF investment (https://www.nsf.gov/about/congress/reports/nsf_big_ideas.pdf). EDGE projects should focus on development of functional genomic tools, approaches, and associated infrastructure to enable direct tests of hypotheses about gene function in diverse organisms for which such tools and infrastructure are presently unavailable.

EDGE proposals must include training and rapid dissemination plans enabling larger communities of investigators to utilize the newly-developed tools, thereby catalyzing an increase in the capacity of research communities to test cause-and-effect hypotheses about genes and phenotypes in organisms for which such tools and infrastructure are presently lacking.

Awards: Standard Grant; **Anticipated Funding Amount:** \$6,000,000

Letter of Intent: Not Required

Proposal Submission Due Date: February 01, 2018

Contacts: Michelle Elekonich, telephone: (703) 292-7202, email: melekoni@nsf.gov

- Diane J. Okamuro, telephone: (703) 292-8420, email: dokamuro@nsf.gov
 - Edda Thiels, telephone: (703) 292-8421, email: ethiels@nsf.gov
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Grant Program: International Research Experiences for Students (IRES)

Agency: National Science Foundation NSF 18-505

RFP Website: <https://www.nsf.gov/pubs/2018/nsf18505/nsf18505.htm>

Brief Description: The International Research Experiences for Students (IRES) program supports international research and research-related activities for U.S. science and engineering students. The IRES program contributes to development of a diverse, globally-engaged workforce with world-class skills. IRES focuses on active research participation by undergraduate or graduate students in high quality international research, education and professional development experiences in NSF-funded research areas.

The overarching, long-term goal of the IRES program is to enhance U.S. leadership in research and education and to strengthen economic competitiveness through training the next generation of research leaders.

This solicitation features three mechanisms; proposers are required to select one of the following tracks to submit their proposal.

Track I focuses on the development of world-class research skills in international cohort experiences. Track II is dedicated to targeted, intensive learning and training opportunities that leverage international knowledge at the frontiers of research. Track III calls for U.S. institutional partnerships and coalitions to develop and evaluate innovative models for high-impact, large-scale international research and professional development experiences for graduate students, as individuals or groups.

1. **IRES - Track I: *IRES Sites (IS)*** projects engage a group of undergraduate and/or graduate students in active high quality collaborative research at an international site with mentorship from researchers at a host lab. IRES Sites must be organized around a coherent intellectual theme that may involve a single discipline or multiple disciplines funded by NSF.
2. **IRES - Track II: *Advanced Studies Institutes (ASI)*** are intensive short courses with related activities that engage advanced graduate students in active learning and research at the frontiers of knowledge. ASIs typically range in length from ten to twenty-one days and must be held outside the United States. ASIs must have a compelling rationale for their international location and should involve distinguished active researchers in the target field from the U.S. and abroad. ASIs should enable students to develop skills and broaden professional networks, leveraging international participation and complementary resources (expertise, facilities, data, field site, etc.) for mutual benefit.
3. **IRES - Track III: *New Concepts in International Graduate Experience (IGE)*** projects propose, implement, and evaluate creative ideas for catalyzing the development of globally engaged U.S. scientists and engineers at the graduate student level. The IGE IRES track invites professional societies and organizations in the U.S. directly associated with science and engineering education or research activities to propose innovative large-scale programs to provide high-quality international research and/or research-related professional development experiences for U.S. graduate students as individuals or groups. The proposed experiences should enhance transferable skills and expand professional networks. Graduate students recruited from a broad, diverse applicant pool should travel to non-U.S. locations for periods of several weeks to a semester for immersive experiences under the mentorship

of appropriate collaborators in the U.S. and foreign locations. The proposed international professional development model may focus on research or research-related activities in any NSF-funded area(s). Proposals that utilize, leverage and potentially expand existing global networks and infrastructure are encouraged.

Student participants supported by IRES funds must be citizens, nationals, or permanent residents of the United States.

Students do not apply directly to NSF to participate in IRES activities. Students apply to NSF-funded investigators who receive IRES awards. To identify appropriate IRES projects, students should consult the directory of active [IRES awards](#).

Awards: Standard Grant; **Anticipated Funding Amount:** \$11,000,000

Letter of Intent: Not Required

Proposal Submission Due Date:

- **Full Proposal Deadline(s)** (due by 5 p.m. submitter's local time):

January 30, 2018

Track - I: IRES Sites

February 06, 2018

Track-II: Advanced Studies Institutes

September 11, 2018

Second Tuesday in September, Annually Thereafter

Track - I: IRES Sites

September 18, 2018

Third Tuesday in September, Annually Thereafter

Track-II: Advanced Studies Institutes

- **Full Proposal Target Date(s):**

February 13, 2018

Track - III: New Concepts in International Graduate Experience

September 25, 2018

Fourth Tuesday in September, Annually Thereafter

Track - III: New Concepts in International Graduate Experience

Contacts: Maija M. Kukla, telephone: (703) 292-4940, email: mkukla@nsf.gov

- Fahmida N. Chowdhury, telephone: (703) 292-4672, email: fchowdhu@nsf.gov
- Simona L. Gilbert, W 17162, telephone: (703) 292-7216, email: sgilbert@nsf.gov

Grant Program: Dynamics of Coupled Natural and Human Systems (CNH)

Agency: National Science Foundation NSF 18-503

RFP Website: <https://www.nsf.gov/pubs/2018/nsf18503/nsf18503.htm>

Brief Description: The Dynamics of Coupled Natural and Human Systems (CNH) Program supports interdisciplinary research that examines human and natural system processes and the complex interactions among human and natural systems at diverse scales. Research projects to be supported by CNH must include analyses of four different components: (1) the dynamics of a natural system; (2) the dynamics of a human system; (3) the processes through which the natural system affects the human system; and (4) the processes through which the human system affects the natural system. CNH also supports research coordination networks (CNH-RCNs) designed to facilitate activities that promote future research by broad research communities that will include all four components necessary for CNH funding.

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

Letter of Intent: Not Required

Proposal Submission Due Date: January 23, 2018

Contacts: Richard F. Yuretich, Lead Program Officer 2018, telephone: (703) 292-4744, email: cnh@nsf.gov

- Elizabeth R. Blood, telephone: (703) 292-4349, email: cnh@nsf.gov
 - Thomas J. Baerwald, telephone: (703) 292-7301, email: cnh@nsf.gov
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Grant Program: Collaborative Research in Computational Neuroscience (CRCNS)

Agency: National Science Foundation NSF 18-501

RFP Website: <https://www.nsf.gov/pubs/2018/nsf18501/nsf18501.htm>

Brief Description: Computational neuroscience provides a theoretical foundation and a rich set of technical approaches for understanding complex neurobiological systems, building on the theory, methods, and findings of computer science, neuroscience, and numerous other disciplines.

Through the CRCNS program, the National Science Foundation (NSF), the National Institutes of Health (NIH), the German Federal Ministry of Education and Research (Bundesministerium für Bildung und Forschung, BMBF), the French National Research Agency (Agence Nationale de la Recherche, ANR), the United States-Israel Binational Science Foundation (BSF), and Japan's National Institute of Information and Communications Technology (NICT) support collaborative activities that will advance the understanding of nervous system structure and function, mechanisms underlying nervous system disorders, and computational strategies used by the nervous system.

Two classes of proposals will be considered in response to this solicitation:

Research Proposals describing collaborative research projects, and

Data Sharing Proposals to enable sharing of data and other resources.

Domestic and international projects will be considered. As detailed in the solicitation, international components of collaborative projects may be funded in parallel by the participating agencies. Specific CRCNS opportunities for parallel funding are available for bilateral US-German Research Proposals, US-German Data Sharing Proposals, US-French Research Proposals, US-French Data Sharing Proposals, US-Israeli Research Proposals, US-Israeli Data Sharing Proposals, US-Japanese Research Proposals, US-Japanese Data Sharing Proposals, and multilateral proposals involving the United States and two or more partnering countries (Germany, France, Israel, and/or Japan; please see Section VIII of the solicitation for country-specific instructions and limitations).

Appropriate scientific areas of investigations may be related to the interests of any of the participating funding organizations. Questions concerning a particular project's focus, direction, and relevance to a participating funding organization should be addressed to the appropriate person in the list of agency contacts found in Section VIII of the solicitation.

Awards: Standard Grant; **Anticipated Funding Amount:** \$5,000,000-\$20,000,000

Letter of Intent: Not Required

Proposal Submission Due Date: January 05, 2018

Contacts: Jasmine Owens, CRCNS Administrative Coordinator - NSF; Program Analyst, Division of Information and Intelligent Systems, National Science Foundation, telephone: (703) 292-8377, fax: (703) 292-9073, email: jowens@nsf.gov

- Kenneth Whang, CRCNS Program Coordinator - NSF; Program Director, Division of Information and Intelligent Systems, National Science Foundation, telephone: (703) 292-5149, fax: (703) 292-9073, email: kwhang@nsf.gov
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Grant Program: Condensed Matter and Materials Theory (CMMT)**Agency: National Science Foundation NSF 18-500****RFP Website:** <https://www.nsf.gov/pubs/2018/nsf18500/nsf18500.htm>

Brief Description: CMMT supports theoretical and computational materials research in the topical areas represented in DMR's Topical Materials Research Programs (these are also variously known as Individual Investigator Award (IIA) Programs, or Core Programs, or Disciplinary Programs), which include: Condensed Matter Physics (CMP), Biomaterials (BMAT), Ceramics (CER), Electronic and Photonic Materials (EPM), Metals and Metallic Nanostructures (MMN), Polymers (POL), and Solid State and Materials Chemistry (SSMC). The CMMT program supports fundamental research that advances conceptual understanding of hard and soft materials, and materials-related phenomena; the development of associated analytical, computational, and data-centric techniques; and predictive materials-specific theory, simulation, and modeling for materials research. First-principles electronic structure, quantum many-body and field theories, statistical mechanics, classical and quantum Monte Carlo, and molecular dynamics, are among the methods used in the broad spectrum of research supported in CMMT. Research may encompass the advance of new paradigms in materials research, including emerging data-centric approaches utilizing data-analytics or machine learning. Computational efforts span from the level of workstations to advanced and high-performance scientific computing. Emphasis is on approaches that begin at the smallest appropriate length scale, such as electronic, atomic, molecular, nano-, micro-, and mesoscale, required to yield fundamental insight into material properties, processes, and behavior, to predict new materials and states of matter, and to reveal new materials phenomena. Approaches that span multiple scales of length and time may be required to advance fundamental understanding of materials properties and phenomena, particularly for polymeric materials and soft matter. Areas of recent interest include, but are not limited to: strongly correlated electron systems; active matter; topological phases; low-dimensional materials and systems; quantum and classical nonequilibrium phenomena, the latter including pattern formation, materials growth, microstructure evolution, fracture, and the jamming transition; gels; glasses; disordered materials, hard and soft; defects; high-temperature superconductivity; nanostructured materials and mesoscale phenomena; creation and manipulation of coherent quantum states; polymeric materials and soft condensed matter, biologically inspired materials, and research at the interface with biology.

Awards: Standard Grant; **Anticipated Funding Amount:** \$15,000,000**Letter of Intent:** Not Required**Proposal Submission Due Date:** Proposals Accepted Anytime**Contacts:** Daryl W. Hess, telephone: (703) 292-4942, email: dhess@nsf.gov

- Alexios Klironomos, telephone: (703) 292-4920, email: aklirono@nsf.gov

National Institutes of Health**Grant Program: BRAIN Initiative: Theories, Models and Methods for Analysis of Complex Data from the Brain (R01 Clinical Trial Not Allowed)****Agency: National Institutes of Health RFA-EB-17-005****RFP Website:** <https://grants.nih.gov/grants/guide/rfa-files/RFA-EB-17-005.html>

Brief Description: The broad goal of The BRAIN InitiativeSM is to understand the circuits and patterns of neural activity that give rise to mental experience and behavior. As stated in the BRAIN 2025 Report (II.5), "Theory, Modeling, and Statistics Will Be Essential to Understanding

the Brain." As advances in neurotechnologies are producing large, complex datasets at an unprecedented rate, novel theoretical and analytical approaches are needed to realize the potential of these rich datasets. Understanding neural circuitry requires an understanding of the algorithms and mechanisms that govern information processing within and between interacting circuits in the brain as a whole. Informed by rich observations, formalized theoretical frameworks allow researchers to infer general principles of brain function and the algorithms underlying functioning neural circuitry. Theory coupled with mathematical modeling and simulations are needed to identify gaps in knowledge, to drive the systematic collection of the future data (e.g., collected data should address model parameters that are currently unknown), and to formulate testable hypotheses on neural circuit mechanisms and how they affect behavioral and cognitive processes. Statistical approaches are needed to conduct formal inference to support or refute a stated theory or hypothesis. Finally, new data analysis methods are needed to detect dynamical features and patterns in complex data, often spanning multiple modalities and scales, are needed to reveal underlying mechanisms of brain function.

The following reports have inspired ideas and concepts for this FOA (but do not represent or replace its specific goals):

<http://www.braininitiative.nih.gov/2025/BRAIN2025.pdf>

<https://www.simonsfoundation.org/life-sciences/simons-collaboration-on-the-global-brain/>, http://www.amstat.org/policy/pdfs/StatisticsBRAIN_April2014.pdf, https://www.imagwiki.nibib.nih.gov/sites/default/files/ComputationalmodelingforUSBRAINinitiative_2.pdf.

This FOA is designed to solicit new theories, ideas, and conceptual frameworks; computational models; and mathematical and statistical methods for driving experimental data collection and analyzing complex data from the nervous system. It is expected that this next generation of analytical tools will be developed such that the neuroscience research community can easily share and use them. This reissue is specifically promoting the development of analytical tools for analyzing behavioral and functional brain circuits that include cellular and sub-second temporal resolution. For example, projects using fMRI are required to include other data types and methods that include cellular and sub-second temporal resolution. **Applications to this FOA must focus on tool building and dissemination in the domain of theories about neural circuit mechanisms, models of circuit structure and function, and/or computational methods of analysis spanning the scale of neurons and firing rates (or proxies thereof) or finer. Investigative studies should be limited to validity testing of the tools being delivered.**

Awards: Application budgets not limited, but are expected to range between \$150,000 to \$250,000 direct costs per year.

Letter of Intent: November 15, 2017

Deadline: December 15, 2017; October 17, 2018; October 17, 2019, by 5:00 PM local time of applicant organization. All [types of non-AIDS applications](#) allowed for this funding opportunity announcement are due on these dates. 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: Fundamental Science Research on Mind and Body Approaches (R21 Clinical Trial Optional)

Agency: National Institutes of Health PA-18-322

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PA-18-322.html>

Brief Description: The goal of this FOA is to support fundamental science research projects that address at least one of these three aspects. The FOA can support research to deconstruct the components of mind and body approaches and analyze their effects on both biological systems and subjective experience. It can also support the development and optimization of mind and body interventions but will not support efficacy or effectiveness trials. Studies carried out for this FOA should use the most appropriate model systems for the mechanism being investigated. Processes and mechanisms may be analyzed and studied at many levels, including biochemical, molecular, cellular, genetic, epigenetic, genomic and epigenomic, systems, network, physiological, neurobiological, behavioral, and social interaction analysis.

There should be adequate justification for applicants' choice of the mind and body approach that they propose to study including the following: the prevalence of use, the strength of the evidence supporting its value and safety, gaps in knowledge, and opportunities to advance the relevant science.

The mechanisms and processes by which mind and body approaches act on targeted biological systems may be very broad. This FOA encourages interdisciplinary collaborations by experts from multiple fields—neuroscientists, psychologists, endocrinologists, immunologists, geneticists, pharmacologists, chemists, physicists, behavioral scientists, and others in relevant fields of inquiry, including scientists based at either research-intensive institutions or those who train complementary practitioners.

Examples of types of investigations appropriate for this FOA include, but are not limited to, the following:

- Determine the perceptual, neurocognitive, and/or behavioral mechanisms underlying a mind and body approach.
- Analyze the neural mechanisms of emotional regulation, affective function, or social interaction affected by a mind and body approach.
- Examine the arousal and regulatory systems for sleep and wake cycles and the default mode network influenced by a mind and body approach.
- Elucidate the neural mechanisms underlying cortical or higher order neural control of brain regions primarily responsible for autonomic neural function relevant to a mind and body approach.
- Assess the mechanistic effects of mind and body approaches on local musculoskeletal systems and connective tissues and/or neuromuscular interactions.
- Study mechanisms by which mind and body approaches regulate neuroinflammatory processes or the functioning of the immune, endocrine, or vascular systems.
- Determine the molecular mechanisms and neural pathways by which mind and body approaches affect the ascending and/or descending process to regulate pain or pain-related functions.
- Conduct imaging studies of central nervous system structure and function to elucidate underlying mechanisms.
- Assess whether multiple biological mechanism may simultaneously contribute to the effects of a mind and body approach.
- Compare the mechanisms and processes by which mind and body approaches affect symptom management or well-being.
- Develop or validate novel psychological, behavioral, or imaging instruments or analytic tools to deconstruct the complexity of mind and body approaches in healthy human subjects or clinical populations.
- Develop and validate biomarkers for chronic pain or other key symptoms to be used in studies of mind and body approaches.

- Where appropriate, develop animal models or in vitro systems that can be used to study cellular effects, neuromuscular interactions, changes in inflammatory processes, or other biological mechanisms underlying mind and body approaches.

Awards: The combined budget for direct costs for the two-year project period may not exceed \$275,000. No more than \$200,000 may be requested in any single year.

Letter of Intent: Not applicable

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

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

Grant Program: Innovation Corps (I-Corps™) at NIH Program for NIH and CDC Translational Research (Admin Supp)

Agency: National Institutes of Health PA-18-314

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PA-18-314.html>

Brief Description: The goal of the I-Corps™ Program is to accelerate the translation of biomedical research to the marketplace by providing training to SBIR and STTR grantees in the areas of innovation and entrepreneurship. Under this program, the NIH and CDC foster the development of early-stage biomedical technologies, focus on teaching researchers how to gain a clearer understanding of the value of their inventions in the marketplace, and ultimately how to advance their technologies from the research lab into the commercial world. This program is designed to complement activities within the scope of the parent SBIR Phase I (R43) or STTR Phase I (R41) grant or the Phase I portion of an SBIR/STTR Fast-Track grant (R44/R42, respectively), to help accelerate the commercialization of new products and services derived from NIH- and CDC-funded technical feasibility studies.

Through this program, I-Corps™ teams will participate in an entrepreneurial immersion course. The I-Corps™ curriculum uses a hypothesis-driven method of customer discovery in order to gain insights into the issues associated with technology commercialization. As part of this program, participants are required to get "out of the lab" and gather information by conducting a large number of interviews (i.e., 100+) with potential customers, strategic partners, and other third-party stakeholders. During the course, I-Corps™ teams share what they learn with instructors and other teams, gaining new insights into the prospective impact of the technology being developed under the SBIR or STTR grant. It is anticipated that the feedback and learning gained during the I-Corps™ program will help inform future Phase II SBIR/STTR projects and commercialization strategies.

The I-Corps™ program will be supported through administrative supplement awards to active NIH or CDC SBIR and STTR Phase I grantees. Administrative supplement awards are intended only to support travel and other costs associated with the training program. A cohort (up to 24 teams per cohort) will be selected to participate in the I-Corps™ at NIH program, which is expected to last approximately eight weeks. **The NIH anticipates that applicants receiving administrative supplements under this FOA will be enrolled in the I-Corps™ at NIH Program in the first of two cohorts in 2018. Only one cohort is invited through this FOA.**

Awards: Application budgets are limited to no more than \$50,000 in total direct costs, and must reflect the actual needs of the proposed project. Note in Section IV.2 that proposed budgets should also include \$20,000 per team to cover workshop registration fees (\$20,000 out of the total budget allowed of \$50,000).

Letter of Intent: Not Applicable

Deadline: December 18, 2017, by 5:00 PM local time of applicant organization.

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: Proof of Concept Development of Early Stage Next Generation Human Brain Imaging (R01 Clinical Trials Not Allowed)

Agency: National Institutes of Health RFA-EB-17-003

RFP Website: <https://grants.nih.gov/grants/guide/rfa-files/RFA-EB-17-003.html>

Brief Description: The long-term objective of the overall BRAIN initiative is to accelerate technology development and the use of tools for acquiring fundamental insight about how the nervous system functions in health and disease. This FOA aims to support early stage development of entirely new and novel noninvasive human brain imaging technologies and methods that will lead to transformative advances in our understanding of the human brain.

The FOA solicits unusually bold and potentially transformative approaches and supports small-scale, proof-of-concept development of human brain imaging based on exceptionally innovative, original and/or unconventional concepts. The goal is to accelerate early stage development of promising and entirely new concepts that require some initial stage of development and testing before launching into full-scale tool development. Applications submitted in response to this FOA should focus on innovative approaches and proof-of-principle initial stage development for breakthrough, noninvasive imaging technology to measure human brain processes in ways that are currently unachievable via imaging technologies in live persons. The proposed concepts and approaches are expected to be high-risk, high-impact, and disruptive (c.f. C. Christensen “The Innovator's Dilemma”, 1997).

This FOA will support early stage development of novel interdisciplinary research and technology for noninvasive next generation human brain imaging, with the intention that the technologies be capable of being used practically and ethically in healthy humans at any point in the life span. To this end, this FOA will support interdisciplinary teams from diverse research domains to conduct research and development activities such as data exchange, prototype development projects, and small-scale studies in mammals or humans to generate preliminary results. The teams should be prepared, by the completion of the award period, to commence fully developing the next-generation brain imaging technology for use in healthy humans within the timeframe of the BRAIN Initiative (“BRAIN 2025: A Scientific Vision,” <http://braininitiative.nih.gov/>).

Achieving this goal will likely require leveraging the expertise of an interdisciplinary team. This FOA will provide the needed resources to support teams to meet the grand challenges of developing novel and transformative interdisciplinary approaches to human brain imaging. Academic - industrial partnerships are strongly encouraged, although not required.

Effort supported under this FOA should not be restricted to only new hardware development, but could address any of the steps along the chain of brain imaging data acquisition including hardware and probes. Advanced, adaptive sampling and analytic approaches for image acquisition and image processing that can scale from macro to micro-levels of the brain (in space and/or time) are encouraged. Creative efforts using both theory and experiment to bridge multiple scales in human neuroimaging are strongly encouraged.

Innovative, impactful next generation imaging tools span a wide array of approaches. These include hardware, software, and methods that have a potential to revolutionize the way noninvasive human neuroimaging is conducted today. This FOA solicits applications proposing

early stage development of entirely new concepts for next generation human brain imaging, including but not limited to:

- New classes of noninvasive human neuroimaging
- Disruptive, new approaches that dramatically improve spatiotemporal resolution of current human neuroimaging
- Behaviorally active human neuroimaging that allows for movement in space/place during imaging in more natural environments while maintaining high resolution
- Innovative approaches for bridging multiple scales in human neuroimaging

Awards: Application budgets are limited to \$300,000 in direct costs in any project year.

Letter of Intent: November 20, 2017

Deadline: December 20, 2017 and December 11, 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 these dates. 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: BRAIN Initiative: Targeted BRAIN Circuits Projects- TargetedBCP (R01 - Clinical Trial Not Allowed)

Agency: National Institutes of Health RFA-NS-18-009

RFP Website: <https://grants.nih.gov/grants/guide/rfa-files/RFA-NS-18-009.html>

Brief Description: This FOA is one of a family of "Integrated Approaches" NIH BRAIN FOAs that range from small or exploratory, targeted brain circuits projects with specific research deliverables (R21, R01) to large, team-research projects with exploratory aims (U01) or with extensive and elaborated goals and a 5-10 year horizon of discovery (U19). In each case, the FOAs are guided by BRAIN 2025 A Scientific Vision: "The Application of Integrated Technologies to Study Fundamental Questions in Neuroscience: Numerous long-standing problems in brain science will benefit dramatically from the integrated experimental approach made possible by the BRAIN Initiative."

Potential applicants are encouraged to visit the NIH BRAIN Initiative website for information and guidance <https://www.braininitiative.nih.gov/funding/initiatives.htm>.

All FOAs in this family of initiatives emphasize the use of cutting-edge methods of activation and recording to understand the behavior of circuits at cellular and sub-second levels of spatial and temporal resolution; that is, at the level of the functional units of circuits. All FOAs welcome basic research using human or non-human animal subjects. However, there is a specific FOA for neurobiology research involving research opportunities employing invasive neural recording (Research Opportunities Using Invasive Neural Recording and Stimulating Technologies in the Human Brain). This family of initiatives also seeks advances in theory and/or analytics, and has a requirement of a data standards and management plan, as well as a data dissemination plan to facilitate use of the results by the research community.

Targeted Brain Circuits Projects

The primary goal of this FOA is to solicit research projects using innovative, methodologically-integrated approaches to understand how circuit activity gives rise to mental experience and behavior. The activity of neural circuits is the substrate of cognitive processes such as perception, attention, reasoning, intention, decision-making, and emotion. These internal activities are translated into patterns of activation that support simple motor behaviors, as well as more complex behaviors such as navigation and communication. Dysfunction of these large systems of

neurons due to disease, injury, or developmental anomaly is the basis of neural and mental disorders. A 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.

Targeted Brain Circuit Project R01 awards will support an individual laboratory or a small multi-PD/PI group. Supported projects will reflect the NIH BRAIN Initiative interests in the application of cutting-edge methodologies in the service of understanding brain circuit function at cellular and sub-second levels of resolution in ethologically relevant behaviors. Applications should offer specific, feasible research goals as endpoints within a 5-year term.

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

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

Deadline: December 8, 2017 and March 15, 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 these dates.

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

Grant Program: BRAIN Initiative: Exploratory Research Opportunities Using Invasive Neural Recording and Stimulating Technologies in the Human Brain (U01)

Agency: National Institutes of Health RFA-NS-18-010

RFP Website: <https://grants.nih.gov/grants/guide/rfa-files/RFA-NS-18-010.html>

Brief Description: Investigations within the human brain offer revolutionary, but challenging, opportunities for experimental investigation of how the brain senses, thinks, perceives, remembers, plans, registers emotions, activates movements, and makes decisions. Invasive surgical procedures provide the unique ability to record and stimulate neurons within precisely localized brain structures in humans. However, human studies using invasive technology are often constrained by a limited number of patients and resources available to implement complex experimental protocols and are rarely aggregated in a manner that addresses research questions with appropriate statistical power. Therefore, this FOA seeks applications to assemble integrated, multi-disciplinary teams to develop exploratory research efforts to overcome these fundamental barriers. Projects should investigate high-impact questions in human neuroscience and the biological basis of disorders of the human nervous system. Designs should be offered to turn early-stage, range-finding data into mechanistic models and hypotheses, including validation of biological presumptions. Research designs can be offered as pilot projects, exploratory research or activities to establish feasibility, proof-of-principle and early-stage development of technologies or approaches in human neuroscience. Studies that offer planning and development for high temporal resolution of behavioral quantification integrated with invasive recording of brain activity is encouraged, especially those that would transition to utilization in naturalistic environments outside of strict laboratory settings. It is expected that projects funded under this FOA will build teams and data that can later compete for a “phase II” of continued funding under new or ongoing FOAs of the BRAIN Initiative or other programs.

An additional goal of this FOA within the NIH BRAIN portfolio is to support human research studies that seek to understand complex human behaviors by precisely measuring and analyzing behavior with high temporal resolution during neural recordings in naturalistic settings. This can be made possible through utilization of rapid advances in neural recording technology, wearables, computational capability, and analytical approaches. Projects that include

this goal should demonstrate feasibility or show proof-of-concept that will lead to realization of methodologies for monitoring behavior outside of constraining laboratory settings.

Projects should engage multidisciplinary teams consisting of clinicians, scientists, device engineers, data/computational scientists, regulatory specialists, and/or ethics specialists. Teams may be assembled within a single institution, but because of the likelihood of a limited number of patients at any single research center, integration of research teams across sites is strongly encouraged.

In the interest of iterative models of discovery, limited support for complementary animal studies may be allowed only if they validate or inform these empirical studies of human physiology. Applicants are expected to employ approaches guided by specified theoretical constructs, and are encouraged to employ quantitative, mechanistic models where appropriate.

We anticipate that implantable devices for most of these applications will rely on existing technology sufficiently advanced for an IRB Non-Significant Risk designation, or an FDA IDE without needing significant additional pre-clinical testing on the device. We also anticipate that newly IDE-approved devices may become available over the course of these awards. NIH BRAIN is supporting new device development and regulatory approval through other NIH BRAIN initiatives, including the availability of template Memoranda of Agreements (MOUs), Confidential Disclosure Agreements (CDAs) and Collaborative Research Agreements (CRAs) with various private and commercial device providers that may facilitate awardees to adopt novel technologies to fit their needs (see <http://braininitiative.nih.gov/> for up to date information and NIH Scientific/Research contacts). Where appropriate, applicants are encouraged to anticipate potential and alternative plans for adopting newly available technologies. Further, use of the cooperative agreement mechanism will allow awardees to negotiate the incorporation of new technologies by working through NIH Program staff in collaboration with technology providers

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

Letter of Intent: December 19, 2017

Deadline: January 19, 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..

Grant Program: National Institute of General Medical Sciences Ruth L. Kirschstein National Research Service Award (NRSA) Predoctoral Institutional Research Training Grant (T32)

Agency: National Institutes of Health PAR-17-341

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-17-341.html>

Brief Description: Through this funding announcement, NIGMS intends to encourage changes in biomedical graduate training to keep pace with the rapid evolution of the research enterprise that is increasingly complex, interdisciplinary, and collaborative. As the scientific enterprise has expanded, there is greater variation in the backgrounds of people participating, approaches taken to investigate research questions, and the range of the careers in the biomedical research workforce that Ph.D. recipients are pursuing. There is also an increasing recognition of the need to enhance reproducibility of biomedical research results through scientific rigor and transparency. This FOA is intended to enable the scientific community to develop and implement evidence-based approaches to biomedical research training and mentoring that will effectively train future generations of outstanding biomedical scientists.

Each funded program should provide high-quality research training, mentored research experiences, and additional opportunities that equip trainees with the technical, operational and professional skills required for careers in the biomedical research workforce. The intention is not to layer additional activities onto existing structures; instead, this FOA is designed to allow for creative approaches to biomedical graduate training that preserve the best elements of current programs, while enhancing the focus on the development of trainee skills.

The **Overarching Objective** of the NIGMS Predoctoral Institutional Research Training Grant (T32) program is to develop a diverse pool of well-trained scientists who have the following:

- A broad understanding across biomedical disciplines and the skills to independently acquire the knowledge needed to advance their chosen field;
- The ability to think critically, independently and to identify important biomedical research questions and approaches that push forward the boundaries of their areas of study;
- A strong foundation in scientific reasoning, rigorous research design, experimental methods, quantitative approaches, as well as data analysis and interpretation;
- A commitment to approaching and conducting biomedical research responsibly and with integrity;
- Experience initiating, conducting, interpreting, and presenting rigorous and reproducible biomedical research with increasing self-direction;
- The ability to work effectively in teams with colleagues from a variety of cultural and scientific backgrounds, and to promote inclusive and supportive scientific research environments;
- The skills to teach and communicate scientific research methodologies and findings to a wide variety of audiences (e.g., discipline-specific, across disciplines, and the public); and
- The knowledge, professional skills and experiences required to identify and transition into careers in the biomedical research workforce (i.e., the breadth of careers that sustain biomedical research in areas that are relevant to the NIH mission).

Because diversity at all levels is integral to research and training excellence, this FOA is intended to support outstanding research training environments that focus on all trainees and enhance diversity in the biomedical enterprise by paying particular attention to groups underrepresented in the biomedical sciences, [NOT-OD-15-053](#).

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

Letter of Intent: Not Applicable

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

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

Department of Defense/US Army/DARPA/ONR

Grant Program: 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?opId=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

Department of Energy

Grant Program: FY2018 Scientific Infrastructure Support for CINR Funding Opportunity Announcement

Agency: Department of Energy DE-FOA-0001773

Website: https://nsuf.inl.gov/File/FOA-NEGTN02-225847-v2-FY18_CSIS_SOLICITATION_DE-FOA-0001773.pdf

Brief Description: The Department of Energy's (DOE) Office of Nuclear Energy (NE) conducts crosscutting nuclear energy research and development (R&D) and associated infrastructure support activities to develop innovative technologies that offer the promise of dramatically improved performance for advanced reactors and fuel cycle concepts while maximizing the impact of DOE resources. The development of nuclear energy-related infrastructure and basic capabilities in the research community is necessary to promote R&D that supports nuclear science and engineering (NS&E), DOE-NE's mission, and the Nation's nuclear energy challenges. Accordingly, DOE intends to enable the education and training of nuclear scientists, engineers, and policy-makers in graduate and undergraduate study and two-year programs, as well as R&D that is relevant to the Department and the nuclear energy industry in general. The Nuclear Energy University Program (NEUP) utilizes up to 20 percent of funds appropriated to NE's R&D program for university-based infrastructure support and R&D in key NE program-related areas: • Fuel Cycle Research and Development (FC R&D) • Reactor Concepts Research, Development and Demonstration (RC RD&D) • Nuclear Energy Advanced Modeling and Simulation (NEAMS) The infrastructure requested should be individual, discrete, and definable items or capabilities that will: • Support, maintain, or enhance the institutions' capacities to attract and teach high quality students interested in nuclear energy-related studies; • Build the institutions' research or education capabilities; or • Enhance the institutions' capacities to perform R&D that is relevant to DOE-NE's mission. NE reserves the right to respond to potential shifts in priorities during FY 2018 that may be driven by events, policy developments, or Congressional/budget direction. NE will factor such considerations into decisions related to the timing and scale of award announcements associated with this FOA.

Submission Deadline: Nov 30, 2017 Applicants are encouraged to transmit applications well before the deadline. APPLICATIONS RECEIVED AFTER THE DEADLINE WILL NOT BE CONSIDERED FOR AWARD. (Please read the FOA instructions for information on how to apply.)

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

Grant Program: FOA: State Energy Program 2017 Competitive Awards

Agency: Department of Energy DE-FOA-0001644

Website: <https://eere-exchange.energy.gov/#Foaid039aab9e-c42b-4a8a-bf67-85af26b0f2f6>

Brief Description: Limited to State Energy Offices (defined as the 50 states, the District of Columbia and five territories). The Office of Energy Efficiency and Renewable Energy's (EERE) State Energy Program (SEP) seeks applications to advance policies, programs, and market strategies that advance affordable and reliable energy to promote economic growth and energy security for the nation. This competitive Funding Opportunity Announcement (FOA) allows States (which includes the District of Columbia and five territories) to compete for funding designed to meet SEP's goals to enhance energy security, advance state-led energy initiatives, and maximize the benefits of decreasing energy waste. Specifically, this FOA includes three Areas of Interest:

State Energy Planning, Innovative Opportunities for Energy Efficiency and Renewable Energy (EE/RE) Practices, and Technical Assistance to Advance SEP Formula Grant EE/RE Activities.

Submission Deadline: January 11, 2018. Applicants are encouraged to transmit applications well before the deadline. APPLICATIONS RECEIVED AFTER THE DEADLINE WILL NOT BE CONSIDERED FOR AWARD. (Please read the FOA instructions for information on how to apply.)

Contact Information: SEPCompetitive2017@ee.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: Collaborative Research Grants

Agency: National Endowment of Humanities

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

Brief Description: Debate, exchange of ideas, and working together—all are basic activities that advance humanities knowledge and foster rich scholarship that would not be possible by researchers working on their own. The Collaborative Research grant program encourages collaboration that proposes diverse approaches to topics, incorporates multiple points of view, and explores new avenues of inquiry that lead to publications and other resources for scholarly audiences and/or general audiences.

Collaborative Research grants support groups of two or more scholars engaging in significant and sustained research in the humanities. The program seeks to encourage interdisciplinary work, both within the humanities and beyond. Projects that include partnerships

with researchers from the natural and social sciences are encouraged, but they must remain firmly rooted in the humanities and must employ humanistic methods.

Eligible projects must propose tangible and sustainable outcomes such as co-authored or multi-authored books; born-digital publications; themed issues of peer-reviewed journals; and content-rich, open-access digital resources (for example, websites, databases, or tools). All project outcomes must be based on and must convey interpretive humanities research. All grantees are expected to disseminate the results of their work to scholarly audiences and/or general audiences.

Awards: Collaborative Research offers three types of awards to address different sorts of projects and stages of development.

Type 1: Convening Grants – up to \$50,000

Convening grants last one year and typically fund conferences and working group meetings to sharpen the chosen research topic and discuss and plan subsequent publication.

Type 2: Publication Grants – up to \$250,000 (no more than \$100,000 per year)

Publication grants last one to three years and support the project toward completion of its publication goals. Publications can appear in traditional print or in digital form. Note that costs paid to publishers and subventions are not supported.

Type 3: Archaeology Grants – up to \$250,000 (no more than \$100,000 per year)

Archaeology grants last one to three years and support projects that lead to publication.

Proposal Deadline: Information about Preliminary Draft Proposals

Prospective applicants may submit a draft of their proposal for staff review (submission of draft proposals is optional) no later than October 15.

Final Proposals: **December 6, 2017** for Projects Beginning October 2018

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

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.

The Lemelson Foundation

Grant Program: Lemelson-MIT Prize

Agency: The Lemelson Foundation

Website: <https://lemelson.mit.edu/prize>

Brief Description: The \$500,000 Lemelson-MIT Prize recognizes individuals who translate their ideas into inventions that improve the world in which we live. The Lemelson-MIT Prize is awarded to outstanding *mid-career* inventors, who have developed a patented product or process of significant value to society, which has been adopted for practical use, or has a high probability of being adopted.

Eligibility Requirements: Candidates for the \$500,000 Lemelson-MIT Prize must:

- be U.S. citizens or permanent residents
- be mid-career, which is defined as having received their bachelor's degree no more than twenty-five years ago. A nominee for the 2018 \$500,000 Lemelson-MIT Prize must have received their bachelor's degree in 1993 or later.
- be the primary inventor of two or more granted U.S. patents, one of which is a product or process that has been commercialized or has potential or realized adoption
- serve as an inspiration to young people, through their creativity, outreach or mentoring activities

Candidates may be individuals or two collaborating inventors, and they must be nominated by one of their peers. Winners will be invited and encouraged to participate in Lemelson-MIT Program activities.

Awards: \$500,000 Lemelson-MIT Prize

Proposal Deadline: November 30, 2017

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

Henry Luce Foundation

Grant Program: HERS-CBL Scholarships

Agency: Henry Luce Foundation

Website: <https://hersnet.org/institutes/cbl-stem-scholarship/>

Brief Description: These grants provide women faculty the opportunity to participate in one of the two HERS Summer Leadership Institutes,

at the University of Denver or at Bryn Mawr College,

The HERS-CBL Scholarship will cover the following expenses:

- Tuition, accommodations and meals for the HERS Institute
- Expenses for travel to and from the selected Institute
- Expenses for 1½ day Orientation with other HERS-CBL participants before the Institute

Fields included are physical and natural sciences, engineering, computing and mathematics; excluded are medical, health and social sciences.

Candidates must be U.S. citizens.

Preference will be given to women who have “significant administrative experience (e.g. served as Department Chair or other senior role),

who are moving towards, or have attained the rank of full professorship; and who have expressed a strong interest in or are committed to pursuit of an academic leadership role.”

Women faculty in the included STEM fields who are tenured and have a strong interest in STEM leadership but have had more limited leadership roles are also encouraged to apply.

Candidates may be individuals or two collaborating inventors, and they must be nominated by one of their peers. Winners will be invited and encouraged to participate in Lemelson-MIT Program activities.

Proposal Deadline: For the 2018 Summer Institutes, HERS-CBL Scholarship applications will be accepted beginning September 1, 2017, with a deadline of November 17, 2017. Participants will be notified of their status by January 15, 2018. (If accepted for the Institute but not selected for this scholarship, candidates may attend with alternate support.)

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
