

NJIT Research Newsletter

Issue: ORN-2017-36

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 3
NSF MRI Internal Competition: Page 4
Recent Awards: Page 7
In the News (Related to research funding): Page 7
Webinars and Events: Page 9
Grant Opportunities: Page 10
Streamlyne Update: Page 29

Special Announcements NJIT Research Events

Event: NJIT Panel Discussion on NSF CAREER Award

When: October 16, 2017 from 2.00 PM to 3.30 PM; Ballroom B, Campus Center

Brief Description: All faculty eligible for NSF CAREER award submission are invited to 2017 NJIT Panel Discussion on NSF CAREER Award event to be held on October 16, 2017 in Ballroom B, Campus Center from 2.00 PM – 3.30 PM. The event will highlight the requirements for NSF CAREER award and discuss the best practices on proposal preparation with NJIT faculty members who have recently received the prestigious NSF CAREER award. Faculty panelists include Eun Jung Lee (Biomedical Engineering), Siva Nadimpalli (Mechanical and Industrial Engineering) and Iulian Neamtiu (Computer Science). In addition, Jacqueline Cusack, Executive Director, Center for Pre-College Programs (CPCP) will provide information about outcome assessment and evaluation tools with participation from pre-college programs.

The agenda for the meeting is as follows:

NJIT Panel Discussion on NSF CAREER Award Event

October 16, 2017

Agenda:

2.00 PM -2.05 PM: Introductions of Panelists: Atam Dhawan

2.05 PM - 2.15 PM; Overview of the NSF CAREER program: Atam Dhawan

2.15 PM - 2.45 PM: Panel Discussion on Proposal Preparation: Siva Nadimpalli, Alice Lee and Iulian Neamtiu (First Round: 5 minutes each to speak about your experience followed by questions on best practices and suggestions on broader impact section of the proposal)

2.45 PM: 3.00 PM: Assessment and CPCP Participation (for broader impact): Jacqueline Cusack

3.00 PM- 3.30 PM: Q&A from Audience and Discussion

Panelists' Biosketches:

Eun Jung Lee, PhD: Dr. Lee received her PhD degree from Columbia University. She has spearheaded in the development of in vitro tissue models and novel bioreactors in the field of cardiovascular tissue engineering in the past several years. She has developed spontaneously beating heart chambers exhibiting key characteristics of native heart for the first time, which is truly novel and powerful for answering questions that cannot easily be approached in vivo. She has also developed a uniaxial and a biaxial stretching device, which can be used to study the impact of mechanical stimulation on engineered cardiac tissues. She is a recipient of NSF CAREER award. More information on <http://biomedical.njit.edu/people/Lee.php>

Siva P.V. Nadimpalli, PhD: Dr. Nadimpalli received his PhD degree from University of Toronto, Canada. He worked for Wind Energy group at GE, Bangalore as a Mechanical Engineer from 2005 to 2006, and carried out projects involving fatigue analysis of wind turbine components and prototype testing of GE wind turbines. He developed experimental techniques to characterize fracture behavior of solder joints and printed circuit boards in commercial microelectronic packages. He also performed thermal and mechanical simulations (using finite element packages) to improve the reliability of the electronic devices by proposing designs for effective cooling and to avoid fracture/delamination. He is a recipient of NSF CAREER award. More information on <http://mie.njit.edu/people/nadimpalli.php>

Iulian Neamtiu, PhD: Dr. Neamtiu received his Ph.D. from the University of Maryland, College Park. Between 2008-2015 he was an Assistant, then Associate Professor at the University of California, Riverside. His research areas span programming languages, security, software engineering, and smartphones, with an overarching goal of making software and smartphones more secure, dependable, and maintainable. He is a recipient of the NSF CAREER award, the UCR Regents' Fellowship award, as well as two Google Research Awards. He is part of the 10-year Cyber-Security Collaborative Research Alliance (CRA, <http://cra.psu.edu/>), a joint effort between the Army Research Laboratory and five universities, whose goal is to advance the theoretical foundations of cyber science in the context of army networks. More information on <http://cs.njit.edu/people/neamtiu>

Jacqueline L. Cusack, Ed.D.: Dr. Cusack received her doctoral degree in Educational Administration is the executive director of the Center for Pre-College Programs at NJIT. She is founder of a foundation called My Sister's Keeper. The foundation provides financial and mentoring support primarily to single, female-headed families in crisis and to female students who pursue post-secondary education. As an educator, She has demonstrated leadership skills in a number of professional and supervisory level positions, as well as overseen the administration of a wide range of educational programs and special initiatives. Dr. Cusack has participated as a panelist, team leader, speaker, and adjunct instructor in a number of State and community-based organizations and institutions of higher education. She has also written materials for publication and been featured in a video produced by the American Student Council Association.

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 Scachter, 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: Major Research Instrumentation Program: (MRI); Collaborative Research in Computational Neuroscience (CRCNS); Condensed Matter and Materials Theory (CMMT); Leading Engineering for America's Prosperity, Health, and Infrastructure (LEAP HI); Spectrum Efficiency, Energy Efficiency, and Security (SpecEES); Enabling Spectrum for AI; Partnerships for Research and Education in Materials (PREM)

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: Generation 3 Concentrating Solar Power Systems; RFI: Solar Energy Technology Analysis & Data Needs
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 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: Dale Gary (PI) and Gregory Fisherman (Co-PI)
Department: Center for Solar Terrestrial Research
Grant/Contract Project Title: EOVS Solar Radio Burst Analysis in Support of RHESSI
Funding Agency: NASA
Duration: 11/01/17-10/31/19

PI: Tao Zhou (PI)
Department: Physics
Grant/Contract Project Title: A Novel Polarization Controlled Beam Steering Device
Funding Agency: US Navy
Duration: 010/10/17-12/31/17

PI: Darius Sollohub (PI)
Department: CoAD
Grant/Contract Project Title: Ironbound Design Research Proposal
Funding Agency: Edison Properties, LLC
Duration: 09/19/17-05/15/18

PI: Tara Alvarez (PI)
Department: Biomedical Engineering
Grant/Contract Project Title: I-Corps: Virtual Reality Vision Therapy
Funding Agency: NSF
Duration: 10/15/17-03/31/18

In the News...

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

Midscale Research Infrastructure: The National Science Foundation wants to learn about "existing and future needs for mid-scale research infrastructure projects from the US-based NSF science and engineering community." This category would fall somewhere between "the maximum award funded by NSF's Major Research Instrumentation Program (MRI; \$4 million) and that of a major multi-user research facility project (\$100 million or more)." See the [Request for Information](#). The American Institute of Physics [reports](#): "NSF says that many scientific discoveries could be enabled by mid-scale RI, but such projects often fall in a gap between the eligibility thresholds of the foundation-wide programs that are dedicated to funding RI." Currently, NSF funds mid-scale projects through the budgets of its six research directorates.

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>

Collaborative Robots Gaining Ground In Manufacturing: The [Chief Executive](#) (10/2, Guillot) reports that collaborative robots "are gaining ground as a valuable tool in the manufacturing industry. But manufacturers that want to make the most of these robots need to guide their system design and deployment with principles that support collaboration between man and machine." A recent study by ABI Research "found that 13% of manufacturing companies surveyed have collaborative robot systems in operation, while another 15% expect to have them operational within the next year." Dan Kara, Research Director of Robotics at ABI Research, "said that while the adoption of industrial robots has been limited by high costs and complex programming requirements, co-bots are easy to program, flexible and can work safely in close proximity of humans."

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

NSF: Important Notice No. 140: Training in Responsible Conduct of Research – A Reminder of the NSF Requirement
Important Notice to Presidents of Universities and Colleges and Heads of Other National Science Foundation Grantee Organizations

The National Science Foundation (NSF) requires that each institution submitting a proposal certify that it has a plan to provide appropriate training and oversight in the ethical conduct of research to all undergraduates, graduate students, and postdoctoral researchers who

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

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

Webinar and Events

Event: NSF Webinar: Knowledge Bases of Science with Representation and Reasoning through Universal Schema

Sponsor: NSF

When: October 25, 2017 from 2:00 PM to 3.00 PM

Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=243415&org=NSF

Brief Description: We want to build a large-scale knowledge base of science containing entities and relations in fields such as biomedicine, material science, computer science, and STEM career paths. Work in knowledge representation and knowledge bases has long struggled to design schemas of entity- and relation-types that capture the desired balance of specificity and generality while also supporting reasoning and information integration from various sources of input evidence. In this talk I will describe our work in "universal schema," a deep learning approach to knowledge representation in which we operate on the union of all input schemas (from structured KBs to natural language textual patterns) while also supporting integration and generalization by learning vector embeddings whose neighborhoods capture semantic implicature. I will also discuss our work in (a) large-scale, non-greedy clustering for entity resolution, (b) question answering with chains of reasoning, using reinforcement learning to guide the efficient search for meaningful chains, and (c) embedded vector representations of common sense, (d) applications to material science (in collaboration with Elsa Olivetti, MIT), and biomedicine. I also hope to describe our ongoing efforts to revolutionize scientific peer review by creating systems supporting a variety of reviewing workflows, including "open peer review" and improved expertise modeling.

Bio: Andrew McCallum is a Professor and Director of the Information Extraction and Synthesis Laboratory, as well as Director of Center for Data Science in the College of Information and Computer Science at University of Massachusetts Amherst. He has published over 250 papers in many areas of AI, including natural language processing, machine learning and reinforcement learning; his work has received over 50,000 citations.

To join the webinar: please register at: <http://www.tvworldwide.com/events/nsf/171025/>

Event: IEEE Webinar: Modeling of Electromechanical Sensors & Systems

When: Available on Demand

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

About the Webinar: If you are interested in modeling electromechanical devices, including piezoelectric materials, then tune into this webinar to learn how PZFlex helps Fortune100 companies optimize device designs. Understanding the complex, highly coupled behavior of electromechanical sensors (e.g. piezoelectric transducer arrays, SAWs, and electrostatic MUTs) and their performance in a system as a whole is critical in the development of innovative technologies (e.g. Ultrasonic Fingerprint Sensors, Medical Imaging, and RF Filters). Due to the anisotropic materials, complex coupling effects, and multi-physics (piezoelectric, electrostatic, structural, thermal, and acoustic) involved in a single device design numerical simulation using finite element analysis (FEA) is often the only way to fully understand device and system behavior and inform the design process. Powerful numerical simulation is an innovation enabler that provides engineers a means of predicting and understanding effects of design changes, environmental influences, and manufacturing tolerances on device and system performance. By facilitating rapid design iteration and assessment, effective simulation tools can explore large design spaces that would be impossible to do via physical prototypes.

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

Presenters:

Dr Gerry Harvey, VP of Engineering, PZFlex

Dr Andrew Tweedie, Director, UK of Operations, PZFlex

Grant Opportunities

National Science Foundation

Grant Program: 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 (please see page 4 for details about the internal submission).

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

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
-

Grant Program: Leading Engineering for America's Prosperity, Health, and Infrastructure (LEAP HI)

Agency: National Science Foundation NSF 17-602

RFP Website: <https://www.nsf.gov/pubs/2017/nsf17602/nsf17602.htm>

Brief Description: The LEAP HI program challenges the engineering research community to take a leadership role in addressing demanding, urgent, and consequential challenges for advancing America's prosperity, health and infrastructure. LEAP HI proposals confront engineering problems that are too complex to yield to the efforts of a single investigator — problems that require sustained and coordinated effort from interdisciplinary research teams, with goals that are not achievable through a series of smaller, short-term projects. LEAP HI projects perform fundamental research that may lead to disruptive technologies and methods, lay the foundation for new and strengthened industries, enable notable improvements in quality of life, or re-imagine and revitalize the built environment.

- LEAP HI supports fundamental research projects involving collaborating investigators, of duration up to five years, with total budget between \$1 million and \$2 million.
- LEAP HI proposals must articulate a fundamental research problem with compelling intellectual challenge and significant societal impact, particularly on economic competitiveness, quality of life, public health, or essential infrastructure. One or more CMMI core topics must lie at the heart of the proposal, and integration of disciplinary expertise not typically engaged in CMMI-funded projects is encouraged.
- LEAP HI proposals must highlight engineering research in a leadership role.
- LEAP HI proposals must demonstrate the need for a sustained research effort by an integrated, interdisciplinary team, and should include a research integration plan and timeline for research activities, with convincing mechanisms for frequent and effective communication.

Awards: Standard Grant; **Anticipated Funding Amount:** \$7,500,000

Letter of Intent: Submission of Letters of Intent is required. Please see the full text of this solicitation for further information. December 15, 2017

Proposal Submission Due Date: February 05, 2018 - February 20, 2018

Contacts: Bruce Kramer, telephone: (703) 292-5348, email: bkramer@nsf.gov

Grant Program: Spectrum Efficiency, Energy Efficiency, and Security (SpecEES): Enabling Spectrum for AI

Agency: National Science Foundation NSF 17-601

RFP Website: <https://www.nsf.gov/pubs/2017/nsf17601/nsf17601.htm>

Brief Description: The National Science Foundation's Directorates for Engineering (ENG) and Computer and Information Science and Engineering (CISE) are coordinating efforts to identify bold

new concepts to significantly improve the efficiency of radio spectrum utilization while addressing new challenges in energy efficiency and security, thus enabling spectrum access for all users and devices, and allowing traditionally underserved Americans to benefit from wireless-enabled goods and services. The SpecEES program solicitation (pronounced "SpecEase") seeks to fund innovative collaborative research that transcends the traditional boundaries of existing programs.

Awards: Standard Grant; **Anticipated Funding Amount:** \$10,000,000

Letter of Intent: Not Required

Proposal Submission Due Date: January 18, 2018

Contacts: Jenshan Lin, ENG/ECCS, telephone: (703) 292-8339, email: jenlin@nsf.gov

- Thyagarajan Nandagopal, CISE/CNS, telephone: (703) 292-8950, email: tnandago@nsf.gov
 - Lawrence S. Goldberg, ENG/ECCS, telephone: (703) 292-8339, email: lgoldber@nsf.gov
-

Grant Program: Partnerships for Research and Education in Materials (PREM)

Agency: National Science Foundation NSF 17-599

RFP Website: <https://www.nsf.gov/pubs/2017/nsf17599/nsf17599.htm>

Brief Description: The DMR Partnerships for Research and Education in Materials Research (PREM) program aims to enable, build, and grow partnerships between minority-serving institutions and DMR-supported centers and/or facilities to increase recruitment, retention and degree attainment (which defines the PREM pathway) by members of those groups most underrepresented in materials research, and at the same time support excellent research and education endeavors that strengthen such partnerships.

Awards: Continuing Grant; **Anticipated Funding Amount:** \$3,000,000

Limit on Number of Proposals per Organization: 1 per lead institution.

Internal Submission and Review: If you plan to submit a proposal, please send an extended summary with Intellectual merit and Broader Impact sections, list of key investigators and budget to the Office of Research at dhawan@njit.edu before November 15, 2017.

Letter of Intent: Not Required

Proposal Submission Due Date: January 29, 2018

Contacts: Eva Campo, 1065N, telephone: (703) 292-7010, email: ecampo@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.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?oppld=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: Generation 3 Concentrating Solar Power Systems

Agency: Department of Energy DE-FOA-0001697

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

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

Submission Deadline:

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

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

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
