

NJIT Research Newsletter

Issue: ORN-2018-26

NJIT Research Newsletter includes recent awards, and announcements of research related seminars, webinars, national and federal research news related to research funding, and **Grant Opportunity Alerts**. The Newsletter is posted on the NJIT Research Website <http://www.njit.edu/research/>.

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Grant Opportunity Alerts

Keywords and Areas Included in the Grant Opportunity Alert Section Below

NSF: Computing and Communication Foundations (CCF): Core Programs; Office of Advanced Cyberinfrastructure (OAC): Research Core Program; Joint DMS/NIGMS Initiative to Support Research at the Interface of the Biological and Mathematical Sciences (DMS/NIGMS); Energy, Power, Control, and Networks (EPCN); Electronics, Photonics and Magnetic Devices (EPMD); Communications, Circuits, and Sensing-Systems (CCSS); Innovation Corps - National Innovation Network Teams Program (I-CorpsTM Teams); Division of Physics: Investigator-Initiated Research Projects (PHY); Operation Engineering; Mind, Machine and Motor Nexus (M3X); Humans, Disasters, and the Built Environment (HDBE); Mechanics of Materials and Structures (MOMS)

NIH: NIDCD Hearing Healthcare for Adults: Improving Access and Affordability (R21/R33 Clinical Trials Optional); Investigator Initiated Research in Computational Genomics and Data Science (R01 R21); High-Priority Behavioral and Social Research Networks (R24 Clinical Trial Not Allowed); Lab to Marketplace: Tools for Brain and Behavioral Research (R43/R44); BRAIN Initiative Advanced Postdoctoral Career Transition Award to Promote Diversity (K99/R00); NIH Director's New Innovator Award Program (DP2); NIH Director's Transformative Research Award (R01)

Department of Defense/US Army/DARPA/ONR: FY2019 Office of Naval Research Young Investigator Program; Critical Technology Studies Program; Peer Reviewed Orthopaedic Research Program Applied Research Award; Research Interests of the Air Force Office of Scientific Research; DoD Orthotics and Prosthetics Outcomes, Clinical Research Award; Spinal Cord Injury Research Program Investigator-Initiated Research Award; DoD Hearing Restoration Focused Applied Research Award; NRL Long Range Broad Agency Announcement (BAA) for Basic and Applied Research

Department of Education: Institute of Education Sciences (IES)

Department of Energy: Integrated University Program (IUP)

NASA: ROSES 2018: DSCOVER Science Team; Space Technology Research Institutes (STRI)Appendix;
ROSES 2018: Heliophysics Space Weather Operations to Research
National Endowment of Humanities: Infrastructure and Capacity Building Challenge Grants
Phrma Foundation: Informatics: Student Award
Samsung: Samsung Global Research Outreach Program (GRO)
Simons Foundation: Simons Investigator program in the Mathematical Modeling of Living Systems (MMLS)

Special Announcement

Call For Proposals

NJIT Faculty Seed Grant Awards – 2018-19

Proposal Submission Deadline to College/School Dean: September 5, 2018

Purpose:

NJIT “2020 Vision” strategic plan targets on substantial increase in academic research and external funding with faculty and student professional development. The purpose of the NJIT Faculty Seed Grant (FSG) initiative is to promote academic research in the core and interdisciplinary areas by providing seed funding to obtain preliminary results or establish hypotheses for developing future grant proposals for submission to external funding agencies. The FSG initiative specifically seeks seed funding proposals from faculty to launch new initiatives in core and interdisciplinary emerging areas aligned with NJIT strategic tactics to develop critical research mass.

Eligibility and Type of Awards:

NJIT full-time faculty with specific research initiative to enhance the critical mass in key and emerging areas may apply to FSG program for internal funding with a budget of \$7500 per project over the FY18 ending June 30, 2018. Multidisciplinary projects with strong recommendation and justification from College/School Dean will be considered at the funding level of \$10,000 subject to availability of funds.

It is expected that about 20 FSG awards will be made this year. Funding is arranged through the Offices of Research and College/School Deans.

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

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

Deadlines:

CFP Announcement: June 1, 2018

FSG Proposal Due in the Office of College/School Dean: September 5, 2018

College/School Dean Recommendations to Office of Research: September 15, 2018

Institutional Review and Announcement of Awards: September 21, 2018

Period of Award: October 1, 2017– June 30, 2018 (no extension will be available)

Review Process and Criterion:

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

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

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

Required FSG Proposal Format:

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

The main proposal should have the following sections:

1. Cover Sheet:

Title of the Project

Principal and Co-Principal Investigators

Department

College

Date Submitted

PI and Co-PI (if multiple investigators) Signatures

2. Abstract (Maximum 250 words; Non-IP for public dissemination):

(Please summarize briefly on):

- a. Project Goal(s)
- b. Significance
- c. Expected Outcomes
- d. Justification of Internal Funding

3. Specific Objectives

4. Methods and Procedures

5. Evaluation and Deliverables

6. Future Plans

(Describe how the project funding with the deliverables will help in future proposal submissions, enhancing the research synergy, and obtaining external funds)

7. Justification of Internal Funding

(Describe what other funds are available and why additional internal funding is needed)

8. Budget and Budget Justification (maximum 1 page)

9. References (maximum 1 page)

10. Appendix (for PI and each Co-PI/Investigator):

- a. PI Biographical Sketch (NSF/NIH or Federal Agency Format; maximum 2 pages per investigator)
- b. Other Grant Support (maximum 1 page per investigator; summarize specific project goal(s) for each grant and any overlap with this proposal)

Recent Research Grant and Contract Awards

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

PI: Reza Curtmola (PI)

Department: Cybersecurity Center

Grant/Contract Project Title: SaTC: TTP: Medium: Collaborative: Securing the Software Supply Chain

Funding Agency: NSF

Duration: 07/01/18-06/30/21

PI: Tara Alvarez (PI)
Department: Biomedical Engineering
Grant/Contract Project Title: Commercialization of Virtual Reality Vision Therapy
Funding Agency: Simbex LLC (Center for the Translation of Rehabilitation Engineering Advances and Technology)
Duration: 07/15/18-07/14/19

PI: Hyomin Kim (PI)
Department: Center for Solar Terrestrial Research
Grant/Contract Project Title: Collaborative Research: GEM - Global Propagation Characteristics of Electromagnetic Ion Cyclotron Waves
Funding Agency: NSF
Duration: 08/01/17-07/31/20

PI: Alexmader Haimovich (PI) and Roberto Rojas-Cessa (co-PI)
Department: Electrical and Computer Engineering
Grant/Contract Project Title: Blind Multi-User Detection of Frequency Hopping Spread Spectrum Signals
Funding Agency: US Army
Duration: 06/15/18-06/14/19

PI: Qing Liu (PI)
Department: Electrical and Computer Engineering
Grant/Contract Project Title: Enabling Intelligent Security Assessment for HPC Systems via Automated Learning and Data Analytics
Funding Agency: US Department of Energy
Duration: 04/01/18-09/30/19

PI: Boris Khusid (PI) and Lou Kondic (Co-PI)
Department: Chemical and Material Engineering; Mathematical Sciences
Grant/Contract Project Title: ISS:GOALI: Nonequilibrium Processing of Particle Suspensions with Thermal and Electrical Field Gradients
Funding Agency: NSF
Duration: 09/01/18-08/31/22

PI: Andrew Gerrard (PI)
Department: Center for Solar Terrestrial Research
Grant/Contract Project Title: At the Cusp of the 21st Century: The Next Generation of Geospace Research Facilities at South Pole and McMurdo Stations
Funding Agency: NSF
Duration: 09/01/17-08/31/22

In the News...

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

Industry creating a 'robot reserve army': [CIO Dive](#) highlights [research](#) suggesting automation and AI will create a "robot reserve army" that would "cause 'stagnant wages and deindustrialization' instead of unemployment for developing countries." The researchers, Lukas Schlogl and Andy Sumner of King's College London, argue that as simple tasks become more automatable, developing countries will see the largest impact as jobs there tend to "offer routine work and require little 'creative work.'" The authors contend that as robots take over jobs in the manufacturing sectors, new jobs in the service sector will emerge, but they see this trend as likely to "reduce wages and hinder the ability of people to break out of poverty."

Impact of Travel Ban on Graduate Students: This week's 5-4 [Supreme Court validation](#) of President Trump's travel ban caps 17 months of restrictive steps by the administration, the [Chronicle of Higher Education recounts](#). These include "extreme vetting" of travelers; scrutiny of visitors' social-media accounts; a crackdown on students who overstay their visas; new restrictions on the ability of recent graduates to remain in the United States; increased oversight of the H1-B program; and "limits on visas for Chinese students and scientists in certain sensitive, high-tech fields."

SENATE Panel OKs Hike in Defense R&D: The Senate Appropriations Committee approved the \$675 billion measure 30-1 on Thursday. "It includes substantial increases for Navy and Air Force University Research Initiatives, the Army's University and Industry Research Centers program, and each service's Defense Research Sciences. The R&D total is more than \$6 billion higher than the current level. It now goes to the Senate floor.

DRONE PROPULSION: The panel calls on the Army "to invest in technologies that vastly improve the mechanical durability of unmanned aerial propulsion systems and utilize multi-fuel capable, hybrid electric propulsion." It urges the Army to consider accelerating expansion of its Open Campus approach to its Materials and Manufacturing Science laboratories in order to benefit strategic materials research. A "research priority" for the Navy should be the "development and qualification of materials technologies, including nonflammable electrolytes, to reduce the risk of thermal runaway and improve safety in lithium-ion batteries." The committee also notes that "all solid-state battery technology could dramatically increase the energy density of current batteries while providing a safer power system by eliminating the need for a flammable electrolyte and reducing the complexity of the battery management system.

\$2 BILLION MORE FOR NIH: In proposing a 5.4 percent increase for the National Institutes of Health, the Senate Appropriations majority crowed: "Since Republicans took back the Senate starting with the FY2016 appropriations cycle, the Committee has increased funding for NIH by \$9 billion or 30 percent." According to [the panel's report](#), the FY 2019 appropriation "is estimated to support over 11,400 new and competing grants." The panel's House counterpart proposed a \$1.25 billion raise.

NSF HIGHLIGHTS MATERIALS FACILITIES: Specifically, they are the National High Magnetic Field Laboratory (NHMFL); the Cornell High Energy Synchrotron Source (CHESS); the Center for High

Energy Neutron Scattering (CHRNS); ChemMatCARS; National Nanotechnology Coordinated Infrastructure (NNCI); Materials Innovation Platforms (MIP); and the Materials Research Facilities Network (MRFN). Read [the Division of Materials Research newsletter](#). Research supported by the Division of Materials Research (DMR) focuses on advancing fundamental understanding of materials, materials discovery, design, synthesis, characterization, properties, and materials-related phenomena. DMR awards enable understanding of the electronic, atomic, and molecular structures, mechanisms, and processes that govern nanoscale to macroscale morphology and properties; manipulation and control of these properties; discovery of emerging phenomena of matter and materials; and creation of novel design, synthesis, and processing strategies that lead to new materials with unique characteristics. These discoveries and advancements transcend traditional scientific and engineering disciplines. The Division supports research and education activities in the United States through funding of individual investigators, teams, centers, facilities, and instrumentation. Projects supported by DMR are essential for the development of future technologies and industries that meet societal needs, as well preparation of the next generation of materials researchers.

America's Biggest Companies Launch Workforce Partnership Initiative (WPI) for STEM

Workforce: Business Roundtable launched "a program called the Workforce Partnership Initiative (WPI) that aims to get America's biggest employers to collaborate, with high schools, colleges, and each other, on closing the workforce skills gap." The initiative will "involve about 35 companies and their CEOs, organized in seven different regional groups; they'll work with local governments and schools to develop and share best practices for building a better worker-training pipeline." It will "focus largely on STEM skills, and particularly on improving opportunities for women and underrepresented minorities within STEM fields." The WPI will involve about 35 companies and their CEOs, organized in seven different regional groups; they'll work with local governments and schools to develop and share best practices for building a better worker-training pipeline. The initiative will focus largely on STEM skills, and particularly on improving opportunities for women and underrepresented minorities within STEM fields; the BRT companies are pledging both to help shape the training curriculum and to create more internships and apprenticeships for students.

The WPI's launch is a culmination of a couple of years of behind-the-scenes work led by Wes Bush, the CEO of defense contractor [Northrop Grumman](#), who chairs the BRT's education and workforce committee. Other CEOs serving as regional group leaders include Greg Case of Aon and Julie Sweet of Accenture (Chicago); Blake D. Moret, of [Rockwell Automation](#) (Milwaukee); Mark Weinberger of Ernst & Young (North Carolina); Ginny Rometty of [IBM](#) (New York/New Jersey/Connecticut); Lisa Davis of Siemens Corp., the U.S. division of the German conglomerate (the Southeast); and Dennis Muilenburg of [Boeing](#) (Utah).

NSF Engineering Drops Deadlines: This "important change," effective August 15, applies to "unsolicited proposals to all core programs in the Divisions of Chemical, Bioengineering, Environmental and Transport Systems (CBET), Civil, Mechanical and Manufacturing Innovation (CMMI), Electrical, Communications and Cyber Systems (ECCS), and Engineering Education and Centers (EEC)," says a [Dear Colleague letter](#) from Dawn Tilbury, assistant director for engineering at the National Science Foundation. "By accepting proposals at any time, ENG is affording the opportunity for PIs to think more creatively, build strong collaborations, converse with Program Directors and carefully prepare proposals with the potential to make significant research contributions to engineering. It is our hope that the elimination of deadlines will reduce the burden on institutions and the community." See responses to [Frequently Asked Questions](#) (

https://www.nsf.gov/pubs/2018/nsf18083/nsf18083.jsp?WT.mc_id=USNSF_25&WT.mc_ev=click#q1). Please see more information in the Special Announcement section above in this Newsletter.

Webinar and Events

Event: Battery Storage Technologies and Potential Applications in Power Systems

Sponsor: IEEE

When: July 12, 2018; 1.00 PM – 2.00 PM

Website: <https://smartgrid.ieee.org/battery-storage-technologies-and-potential-applications-in-power-systems>

Brief Description: Electrical power infrastructures are changing dramatically around the globe due to Smart Grid initiatives, the establishment of renewables and the resulting distributed nature of creating electricity. As a result, the power network faces great challenges in generation, transmission and distribution to meet new and many times unpredictable demands of providing coherent electricity supply. Electrical Energy Storage (EES) has been considered a game-changer with a number of technologies that have great potential in meeting these challenges. However, the wide variety of options and complex performance matrices can make it difficult to appraise a specific EES technology for a particular application. This presentation intends to contribute information that will give a Smart Grid user a clearer picture of the state-of-the-art electrochemical technologies available, and where they would be suited for integration into a power generation and distribution system.

Speaker: Wei-Jen Lee, Professor and Director, University of Texas at Arlington

To join the webinar: Please register at <https://smartgrid.ieee.org/battery-storage-technologies-and-potential-applications-in-power-systems>

Event: Math Frontiers Monthly Webinar Series

Sponsor: National Academies

When: July 10, 2018 from 2.00 PM

Website: http://sites.nationalacademies.org/deps/bmsa/deps_183972

Brief Description: Join the National Academies of Sciences, Engineering, and Medicine for a webinar series on exciting and upcoming mathematics research across an array of topics. Webinars will take place on the **second Tuesday of each month from 2-3 p.m. ET**, with two speakers and live Q&A. See below for the list of dates and themes for each webinar. *When registering, please make sure you select all the webinars you would like to attend.* You will only receive reminder emails and login instructions for webinars you have registered for.

As each webinar approaches, we will post more information about the speakers on the webinar series page at nas.edu/mathfrontiers.

July 10, 2018: Topology

Professors [Jeffrey F. Brock](#) and [John Morgan](#) will discuss applications of topology—the mathematical study of how object properties are impacted by deformations—to fields such as data analytics, tumor identification, and robotics.

August 14, 2018: Algorithms for Threat Detection

Professor [Andrea Bertozzi](#) and others will discuss applications of mathematics to spatiotemporal data analytics as a way to discover and mitigate national security threats.

September 11, 2018: Mathematical Analysis

Professor [Dimitri Shlyakhtenko](#) and others will discuss mathematical analysis—the study of functions and their limits. Application areas include computational fluid dynamics and astronomy.

October 9, 2018: *Combinatorics*

Invited speakers will discuss the mathematical study of discrete structures and their properties focusing on some of the modern techniques in the area including the probabilistic method. Application areas include information theory, statistical physics, molecular biology and computer science.

November 13, 2018: *Why Machine Learning Works*

Invited speakers will discuss the mathematics behind machine learning and how they enable predictive analyses.

December 11, 2018: *Mathematics of Epidemics*

Professors [Calistus Ngonghala](#) and [Folashade B. Augusto](#) will discuss mathematical approaches to studying biology, including ecology and infectious disease.

To join the webinar: Please register at http://sites.nationalacademies.org/deps/bmsa/deps_183972

Grant Opportunities

National Science Foundation

Grant Program: Computing and Communication Foundations (CCF): Core Programs

Agency: National Science Foundation NSF 18-568

RFP Website: <https://www.nsf.gov/pubs/2018/nsf18568/nsf18568.htm>

Brief Description: CISE's Division of Computing and Communication Foundations (CCF) supports research and education projects that develop new knowledge in four core programs:

- The Algorithmic Foundations (AF) program;
- The Communications and Information Foundations (CIF) program;
- The Foundations of Emerging Technologies (FET) program; and
- The Software and Hardware Foundations (SHF) program.

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

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

A more complete description of the two project classes can be found in section *II. Program Description* of this document.

CCF proposals must be in the Small or Medium classes only.

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

Letter of Intent: Not Required

Full Proposal Submission Deadline:

September 24, 2018 - October 02, 2018

MEDIUM projects

November 01, 2018 - November 15, 2018

SMALL projects

Contacts: Anindya Banerjee, Point of Contact, Software and Hardware Foundations (SHF), telephone: (703) 292-8910, email: abanerje@nsf.gov

- Mitra Basu, Point of Contact, Foundations of Emerging Technologies (FET), telephone: (703) 292-8910, email: mbasu@nsf.gov
- Tracy Kimbrel, Point of Contact, Algorithmic Foundations (AF), telephone: (703) 292-8910, email: tkimbrel@nsf.gov

Grant Program: Office of Advanced Cyberinfrastructure (OAC): Research Core Program

Agency: National Science Foundation NSF 18-567

RFP Website: <https://www.nsf.gov/pubs/2018/nsf18567/nsf18567.htm>

Brief Description: The Office of Advanced Cyberinfrastructure (OAC) supports translational research and education activities in all aspects of advanced cyberinfrastructure (CI) that lead to deployable, scalable, and sustainable systems capable of transforming science and engineering research. Advanced CI includes the spectrum of computational, data, software, networking, and security resources, tools, and services, along with the computational and data skills and expertise, that individually and collectively can transform science and engineering. OAC supports advanced CI research to address new CI frontiers for discovery leading to major innovations, and supports the development and deployment processes, as well as expert services, necessary for realizing the research CI that is critical to the advancement of all areas of science and engineering research and education.

OAC research investments are characterized by their translational nature, i.e., building on basic research results and spanning the design to practice stages. They are further characterized by one or more of the following key attributes: multi-disciplinary, extreme-scale, driven by science and engineering research, end-to-end, and deployable as robust research CI. Areas of translational research supported by OAC include systems architecture and middleware for extreme-scale systems, scalable algorithms and applications, and the advanced CI ecosystem. Principal investigators (PIs) are *strongly encouraged* to contact an OAC cognizant program director listed in this solicitation with a 1-page project summary for further guidance. For foundational computer and information science and engineering research, PIs are referred to the core research programs of the Computer and Communication Foundations (CCF), Computer and Network Systems (CNS), and Information and Intelligent Systems (IIS) divisions of CISE. Proposers are invited to submit proposals in one project class, which is defined as follows:

- Small Projects - up to \$500,000 total budget with durations up to three years.

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

Letter of Intent: See the program information

Full Proposal Submission Deadline: Full Proposal Accepted Anytime

Contacts: Sushil K. Prasad, telephone: (703) 292-5059, email: sprasad@nsf.gov

- Vipin Chaudhary, telephone: (703) 292-2254, email: vipchaud@nsf.gov
- Stefan A. Robila, telephone: (703) 292-2303, email: srobila@nsf.gov

Grant Program: Joint DMS/NIGMS Initiative to Support Research at the Interface of the Biological and Mathematical Sciences (DMS/NIGMS)

Agency: National Science Foundation NSF 18-566

RFP Website: <https://www.nsf.gov/pubs/2018/nsf18566/nsf18566.htm>

Brief Description: The Division of Mathematical Sciences (DMS) in the Directorate for Mathematical and Physical Sciences (MPS) at the National Science Foundation (NSF) and the National Institute of General Medical Sciences (NIGMS) at the National Institutes of Health (NIH) plan to support fundamental research in mathematics and statistics necessary to answer questions in the biological and biomedical sciences. Both agencies recognize the need to promote research at the interface between mathematical and life sciences. This program is designed to encourage new collaborations, as well as to support innovative activities by existing teams.

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

Letter of Intent: See the program information

Full Proposal Submission Deadline: Full Proposal Accepted Anytime

Contacts: Junping Wang, Program Director, NSF/DMS, telephone: (703) 292-4488, email: DMS-NIGMS@nsf.gov

- Nandini Kannan, Program Director, NSF/DMS, telephone: (703) 292-8104, email: DMS-NIGMS@nsf.gov

- Pedro F. Embid, Program Director, NSF/DMS, telephone: (703) 292-4859, email: DMS-NIGMS@nsf.gov
-

Grant Program: Energy, Power, Control, and Networks (EPCN)

Agency: National Science Foundation NSF PD 18-7607

RFP Website:

https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505249&org=NSF&sel_org=NSF&from=fund

Brief Description: The Energy, Power, Control, and Networks (EPCN) Program supports innovative research in modeling, optimization, learning, adaptation, and control of networked multi-agent systems, higher-level decision making, and dynamic resource allocation, as well as risk management in the presence of uncertainty, sub-system failures, and stochastic disturbances. EPCN also invests in novel machine learning algorithms and analysis, adaptive dynamic programming, brain-like networked architectures performing real-time learning, and neuromorphic engineering. EPCN's goal is to encourage research on emerging technologies and applications including energy, transportation, robotics, and biomedical devices & systems. EPCN also emphasizes electric power systems, including generation, transmission, storage, and integration of renewable energy sources into the grid; power electronics and drives; battery management systems; hybrid and electric vehicles; and understanding of the interplay of power systems with associated regulatory & economic structures and with consumer behavior.

Areas managed by Program Directors (please contact Program Directors listed in the [EPCN staff directory](#) for areas of interest):

Control Systems

- Distributed Control and Optimization
- Networked Multi-Agent Systems
- Stochastic, Hybrid, Nonlinear Systems
- Dynamic Data-Enabled Learning, Decision and Control
- Cyber-Physical Control Systems
- Applications (Biomedical, Transportation, Robotics)

Energy and Power Systems

- Solar, Wind, and Storage Devices Integration with the Grid
- Monitoring, Protection and Resilient Operation of Grid
- Power Grid Cybersecurity
- Market design, Consumer Behavior, Regulatory Policy
- Microgrids
- Energy Efficient Buildings and Communities

Power Electronics Systems

- Advanced Power Electronics and Electric Machines
- Electric and Hybrid Electric Vehicles
- Energy Harvesting, Storage Devices and Systems
- Innovative Grid-tied Power Electronic Converters

Learning and Adaptive Systems

- Neural Networks
- Neuromorphic Engineering Systems
- Data analytics and Intelligent Systems
- Machine Learning Algorithms, Analysis and Applications

Awards: Proposals submitted to other program announcements and solicitations, including the Faculty Early Career Development Program (CAREER), must meet their respective deadlines; please refer to the deadline dates specified in the appropriate announcement or solicitation. Proposals for EARly-concept Grants for Exploratory Research (EAGER) or Rapid Response Research (RAPID) can be submitted at

any time but Principal Investigators must contact the cognizant program director prior to submission. Proposals for supplements or workshops can be submitted at any time, and PIs are encouraged to contact the cognizant PD prior to submission.

Letter of Intent: See the program information

Full Proposal Submission Deadline: Full Proposal Accepted Anytime

Contacts: Radhakishan Baheti rbaheti@nsf.gov (703) 292-8339

Alireza Khaligh akhaligh@nsf.gov (703) 292-8339

Anthony Kuh akuh@nsf.gov (703) 292-8339

Anil Pahwa apahwa@nsf.gov (703) 292-2285

Grant Program: Electronics, Photonics and Magnetic Devices (EPMD)

Agency: National Science Foundation NSF PD 18-1517

RFP Website:

https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505250&org=NSF&sel_org=NSF&from=fund

Brief Description: The Electronics, Photonics and Magnetic Devices (EPMD) Program supports innovative research on novel devices based on the principles of electronics, optics and photonics, optoelectronics, magnetics, opto- and electromechanics, electromagnetics, and related physical phenomena. EPMD's goal is to advance the frontiers of micro-, nano- and quantum-based devices operating within the electromagnetic spectrum and contributing to a broad range of application domains including information and communications, imaging and sensing, healthcare, Internet of Things, energy, infrastructure, and manufacturing. The program encourages research based on emerging technologies for miniaturization, integration, and energy efficiency as well as novel material-based devices with new functionalities, improved efficiency, flexibility, tunability, wearability, and enhanced reliability.

Awards: Proposals submitted to other program announcements and solicitations, including the Faculty Early Career Development Program (CAREER), must meet their respective deadlines; please refer to the deadline dates specified in the appropriate announcement or solicitation. Proposals for EARly-concept Grants for Exploratory Research (EAGER) or Rapid Response Research (RAPID) can be submitted at any time but Principal Investigators must contact the cognizant program director prior to submission. Proposals for supplements or workshops can be submitted at any time, and PIs are encouraged to contact the cognizant PD prior to submission.

Letter of Intent: See the program information

Full Proposal Submission Deadline: Full Proposal Accepted Anytime

Contacts: Dominique Dagenais ddagenai@nsf.gov (703) 292-8339

Eric G. Johnson egjohnso@nsf.gov (703) 292-7718

Paul Lane plane@nsf.gov (703) 292-8339

Grant Program: Communications, Circuits, and Sensing-Systems (CCSS)

Agency: National Science Foundation NSF PD 18-7564

RFP Website:

https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505248&org=NSF&sel_org=NSF&from=fund

Brief Description: The Communications, Circuits, and Sensing-Systems (CCSS) Program supports innovative research in circuit and system hardware and signal processing techniques. CCSS also supports system and network architectures for communications and sensing to enable the next-generation cyber-physical systems (CPS) that leverage computation, communication, and sensing integrated with physical domains. CCSS invests in micro- and nano-electromechanical systems (MEMS/NEMS), physical, chemical, and biological sensing systems, neurotechnologies, and communication & sensing circuits and systems. The goal is to create new complex and hybrid systems ranging from nano- to macro-scale with

innovative engineering principles and solutions for a variety of applications including but not limited to healthcare, medicine, environmental and biological monitoring, communications, disaster mitigation, homeland security, intelligent transportation, manufacturing, energy, and smart buildings. CCSS encourages research proposals based on emerging technologies and applications for communications and sensing such as high-speed communications of terabits per second and beyond, sensing and imaging covering microwave to terahertz frequencies, personalized health monitoring and assistance, secured wireless connectivity and sensing for the Internet of Things, and dynamic-data-enabled autonomous systems through real-time sensing and learning.

Awards: Proposals submitted to other program announcements and solicitations, including the Faculty Early Career Development Program (CAREER), must meet their respective deadlines; please refer to the deadline dates specified in the appropriate announcement or solicitation. Proposals for EARly-concept Grants for Exploratory Research (EAGER) or Rapid Response Research (RAPID) can be submitted at any time but Principal Investigators must contact the cognizant program director prior to submission. Proposals for supplements or workshops can be submitted at any time, and PIs are encouraged to contact the cognizant PD prior to submission.

Letter of Intent: See the program information

Full Proposal Submission Deadline: Full Proposal Accepted Anytime

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Jenshan Lin jenlin@nsf.gov (703) 292-8339

Akbar Sayeed asayeed@nsf.gov (703) 292-4753

Grant Program: Innovation Corps - National Innovation Network Teams Program (I-Corps™ Teams)

Agency: National Science Foundation NSF 18-515

RFP Website: <https://www.nsf.gov/pubs/2018/nsf18515/nsf18515.htm>

Brief Description: The National Science Foundation (NSF) seeks to develop and nurture a national innovation ecosystem that builds upon fundamental research to guide the output to facilitate the application of scientific discoveries closer to the development of technologies, products and processes that benefit society. In order to maintain, strengthen and grow a national innovation ecosystem, NSF has established the Innovation Corps - National Innovation Network Teams Program (I-Corps Teams). The NSF I-Corps Teams Program purpose is to identify NSF-funded researchers who will receive additional support in the form of entrepreneurial education, mentoring and funding to accelerate innovation that can attract subsequent third-party funding.

The purpose of the I-Corps Teams program is to identify NSF-funded researchers who will receive additional support in the form of entrepreneurial education, mentoring and funding to accelerate the translation of knowledge derived from fundamental research into emerging products and services that can attract subsequent third-party funding. The outcomes of I-Corps Teams projects will be threefold: 1) a clear go/no go decision based on an assessment of the viability of the overall business model, 2) substantial first-hand evidence for or against product-market fit, with a pithy definition of the customer segments and corresponding value propositions, and 3) a narrative of a compelling technology demonstration for potential partners.

Awards: Standard Grant **Anticipated Funding Amount:** \$12,750,000

Letter of Intent: See the program information

Full Proposal Submission Deadline: November 28, 2018

Contacts: Cindy WalkerPeach, telephone: 703 292-8437, email: crwalker@nsf.gov

Grant Program: Division of Physics: Investigator-Initiated Research Projects (PHY)

Agency: National Science Foundation NSF 18-564

RFP Website: <https://www.nsf.gov/pubs/2018/nsf18564/nsf18564.htm>

Brief Description: The Division of Physics (PHY) supports physics research and the preparation of future scientists in the nation's colleges and universities across a broad range of physics disciplines that span scales of space and time from the largest to the smallest and the oldest to the youngest. The Division is comprised of disciplinary programs covering experimental and theoretical research in the following major subfields of physics: Atomic, Molecular and Optical Physics; Computational Physics; Elementary Particle Physics; Gravitational Physics; Integrative Activities in Physics; Nuclear Physics; Particle Astrophysics; Physics of Living Systems; Plasma Physics (supported under a separate solicitation); and Quantum Information Science.

Awards: Standard Grant **Anticipated Funding Amount:** \$90,000,000

Letter of Intent: See the program information

Full Proposal Submission Deadline: November 28, 2018

Contacts: Krastan B. Blagoev, Physics of Living Systems, telephone: (703) 292-4666, email: kblagoev@nsf.gov

- Michael J. Cavagnero, Atomic, Molecular and Optical Physics - Theory, telephone: (703) 292-2163, email: mcavagne@nsf.gov
 - Mark Coles, Projects and Facilities, telephone: (703) 292-4432, email: mcoles@nsf.gov
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Grant Program: Operations Engineering (OE)

Agency: National Science Foundation NSF PD 19-006Y

RFP Website:

https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505202&org=NSF&sel_org=NSF&from=fund

Brief Description: The Operations Engineering (OE) program supports fundamental research on advanced analytical methods for improving operations in complex decision-driven environments. Analytical methods include, but are not limited to, deterministic and stochastic modeling, optimization, decision and risk analysis, data science, and simulation. Methodological research is highly encouraged but must be motivated by problems that have potential for high impact in engineering applications. Application domains of particular interest to the program arise in commercial enterprises (e.g., production/manufacturing systems and distribution of goods, delivery of services), the public sector/government (e.g., public safety and security), and public/private partnerships (e.g., health care, environment and energy). The program also welcomes operations research in new and emerging domains and addressing systemic societal or technological problems. The OE program particularly values cross-disciplinary proposals that leverage application-specific expertise with strong quantitative analysis in a decision-making context. Proposals for methodological research that are not strongly motivated by high-potential engineering applications are not appropriate for this program.

Awards: Various

Letter of Intent: See the program information

Full Proposal Submission Deadline: Anytime

Contacts: Georgia-Ann Klutke gaklutke@nsf.gov (703) 292-2443
Irina Dolinskaya idolinsk@nsf.gov (703) 292-7078

Grant Program: Mind, Machine and Motor Nexus (M3X)

Agency: National Science Foundation NSF PD 19-058Y

RFP Website:

https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505402&org=NSF&sel_org=NSF&from=fund

Brief Description: The Mind, Machine and Motor Nexus (M3X) program supports fundamental research at the intersection of mind, machine and motor. A distinguishing characteristic of the program is an integrated treatment of human intent, perception, and behavior in interaction with embodied and intelligent engineered systems and as mediated by motor manipulation. M3X projects should advance the holistic analysis of cognition and of embodiment as present in both human and machine elements. This work will encompass not only how mind interacts with motor function in the manipulation of machines, but also how, in turn, machine response and function may shape and influence both mind and motor function.

The M3X program seeks to support the development of theories, representations, and working models that draw upon and contribute to fundamental understanding within and across diverse fields, including but not limited to systems science and engineering; mechatronics; cognitive, behavioral and perceptual sciences; and applied computing. Research funded through this program is expected to lead to new computable theories and to the physical manifestation of these theories.

Application areas supported by the M3X program span the full breadth of the Division of Civil, Mechanical and Manufacturing Innovation. Methodological innovation is emphasized, as is a focus on engaging new and emerging thematic areas. The M3X program does not support disaggregated, parallel efforts from individual disciplines or investigators: rather, supported activities must strongly integrate across disciplines to enable discoveries that would not otherwise be possible. Additionally, the M3X program will not consider proposals that do not integrate physical considerations in a fundamental way. Principal investigators proposing pure artificial intelligence or pure machine learning research are referred to funding opportunities in the Directorate for Computer and Information Science and Engineering.

Awards: Various

Letter of Intent: See the program information

Full Proposal Submission Deadline: Anytime

Contacts: Robert Scheidt rscheidt@nsf.gov 703-292-2477

Grant Program: Humans, Disasters, and the Built Environment (HDBE)

Agency: National Science Foundation NSF PD 19-8092

RFP Website:

https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505572&org=NSF&sel_org=NSF&from=fund

Brief Description: The Humans, Disasters and the Built Environment (HDBE) program supports fundamental, multidisciplinary research on the interactions between humans and the built environment within and among communities exposed to natural, technological and other types of hazards and disasters. The program's context is provided by ongoing and emerging changes in three interwoven elements of a community: its population, its built environment (critical infrastructures, physical and virtual spaces, and buildings and related structures) and the hazards and disasters to which it is exposed. The HDBE program seeks research that integrates these elements and that can contribute to theories that hold over a broad range of scales and conditions. Examples include but are not limited to unified frameworks and theoretical models that encompass non-hazard to extreme hazard and disaster conditions, theoretical and empirical studies that consider how interactions between a community's population and its built environment may suppress or amplify hazard exposure or its effects, and studies that seek to inform scholarship through the development of shared data and related resources. In these and other areas funded through the HDBE program, research that challenges conventional wisdom on the interactions among humans, the built environment and hazards and disasters is particularly encouraged. Given the richness of the phenomena under study, the HDBE program seeks research that advances theories, methods and data within and across diverse disciplines, whether in engineering, the social sciences, computing or other relevant fields. Ultimately, research funded through this program is expected to inform how communities can cultivate

and engage a broad range of physical, social and other resources to ensure improved quality of life for their inhabitants.

Awards: Various

Letter of Intent: See the program information

Full Proposal Submission Deadline: Anytime

Contacts: Robin Dillon-Merrill rdillonm@nsf.gov 703-292-4921

Grant Program: Mechanics of Materials and Structures (MOMS)

Agency: National Science Foundation NSF PD 19-1630

RFP Website:

https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13355&org=NSF&sel_org=NSF&from=fund

Brief Description: The Mechanics of Materials and Structures program supports fundamental research in mechanics as related to the behavior of deformable solid materials and structures under internal and external actions. The program supports a diverse spectrum of research with emphasis on transformative advances in experimental, theoretical, and computational methods. Submitted proposals should clearly emphasize the contributions to the field of mechanics.

Proposals related to material response are welcome, including, but not limited to, advances in fundamental understanding of deformation, fracture, and fatigue as well as contact and friction. Proposals that relate to structural response are also welcome, including, but not limited to, advances in the understanding of nonlinear deformation, instability and collapse, and wave propagation. Proposals addressing mechanics at the intersection of materials and structures, such as, but not limited to, meta-materials, hierarchical, micro-architected and low-dimensional materials are also encouraged.

Proposals that explore and build upon advanced computing techniques and tools to enable major advances in mechanics are particularly welcome. For example, proposals incorporating reduced-order modeling, data-driven techniques, and/or stochastic methods with a strong emphasis on validation are encouraged. Also welcome are proposals addressing data analytics for deformation or damage response deduction from large experimental and computational data sets. Similarly, proposals that explore new experimental techniques to capture deformation and failure information for extreme ranges of loading or material behavior are also encouraged. Finally, experimental and computational methods that address information across multiple length and time scales, potentially involving multiphysics considerations are also welcome.

Awards: Various

Letter of Intent: See the program information

Full Proposal Submission Deadline: Anytime

Contacts: Siddiq Qidwai moms@nsf.gov (703) 292-2211

National Institutes of Health

Grant Program: NIDCD Hearing Healthcare for Adults: Improving Access and Affordability (R21/R33 Clinical Trials Optional)

Agency: National Institutes of Health RFA-DC-19-001

RFP Website: <https://grants.nih.gov/grants/guide/rfa-files/RFA-DC-19-001.html>

Brief Description: This FOA requests research to increase accessible and affordable hearing health care (HHC). In this context, HHC refers broadly not only to hearing technology but also to the systematic and comprehensive hearing-related services involved in diagnosis, treatment, auditory rehabilitation, and counseling of individuals with hearing loss, as well as other services that collectively allow the individual

to maximize his or her communication outcomes. The overarching emphasis is on the acquisition of knowledge that can be translated into new or enhanced approaches for HHC. Applications should focus on delivering better healthcare access and outcomes and should seek solutions that are effective, affordable, and deliverable to those in need. Research is needed to develop or test new and innovative adaptations of current approaches and practices. These adaptations should be implementable and sustainable in clinical and community practice settings beyond the research environment and may have the potential to address disparities in health care. Research applications may span HHC in the context of a medical model to a psychosocial model of hearing loss. Outcomes research and health services research related to accessible and affordable HHC are also responsive to this FOA. Because some aspects of this research area are new for the NIDCD scientific community, there will likely be a need to obtain preliminary data or conduct early-stage developmental activities before moving to a full-scale project. The Exploratory/Developmental Phased Innovation (R21/R33) grant mechanism is appropriate for this purpose. It provides opportunity for creating, developing, and strengthening new and necessary collaborations, provides opportunity for acquisition of preliminary data, and allows for milestone-driven research, supporting a phased research project with a stepped approach for implementation. Applications not requiring a phased research approach are encouraged to apply under a different funding mechanism (e.g., investigator initiated R21 or R01).

Awards: Support for the R21 phase cannot exceed two years and direct costs are limited to \$275,000 over the R21 two-year period, with no more than \$150,000 in direct costs in any single year of the R21 phase. The R33 phase may not exceed four years and direct costs are limited to \$1.4 M with no more than \$400,000 in direct costs in any single year of the R33 phase.

The total duration of the award (R21 and R33 phases) may not exceed five years.

Letter of Intent: September 4, 2018

Deadline: October 4, 2018, June 4, 2019, February 4, 2020, October 4, 2020, June 4, 2021, 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: Investigator Initiated Research in Computational Genomics and Data Science (R01 R21 Clinical Trial Not Allowed)

Agency: National Institutes of Health PAR-18-844

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-18-844.html>

Brief Description: Through this FOA, NHGRI seeks to fund innovative research efforts in computational genomics, data science, statistics, and bioinformatics for basic or clinical genomic sciences, and broadly applicable to human health and disease, as well as research leading to improvement of existing software or approaches demonstrated to be in broad use by the genomics community.

Research topics appropriate for this FOA include, but are not limited to, development of novel computational, bioinformatics, statistical, or analytical approaches, tools, or software for:

- Interactive analysis and visualization of large genomic data sets.
- Identification or prioritization of disease-causal genetic variants.
- Causal statistical modeling related to genomic research.
- Analysis of single-cell or sub-cellular genomic data both in situ and in dissociated cells.
- Integrating model organism data and information with human data.
- Integrating and interpreting various genomic data types, including sequence data, functional data, phenotypic data, and clinical data.
- Processing and integrating genome sequence data to enhance representation of population variation.

- Processing sequence data for sequence assembly, variant detection (SNPs and SVs), imputation, and resolution of haplotypes.
- Development of efficient and scalable algorithms for compute-intensive genomic applications.
- Achieving major cost reductions in genomic data processing and analysis.
- Enabling scalable and cost-effective curation of FAIR metadata for genomic and phenotypic data.
- Enhancing secure sharing and use of genomic data in combination with clinical data.
- Processing or analyzing new genomic data types, or major improvement in processing or analyzing existing genomic data types.
- Rigorous benchmarking of tools, methods, or algorithms for genomics.
- Hardening an existing widely-used genomic data processing pipeline to enable its reproducible implementation by the biomedical research community.

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: November 16, 2018; July 16, 2019; November 16, 2019; July 16, 2020; November 16, 2020; July 16, 2021, 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: High-Priority Behavioral and Social Research Networks (R24 Clinical Trial Not Allowed)

Agency: National Institutes of Health RFA-AG-19-015

RFP Website: <https://grants.nih.gov/grants/guide/rfa-files/RFA-AG-19-015.html>

Brief Description: This FOA is designed to address the network development needs of researchers interested in advancing transdisciplinary aging-relevant research agendas in the social and behavioral sciences. The goal is to produce resources that will serve the field at large. Applications must propose efforts to advance one of the above-listed high priority aging-relevant research areas in the behavioral and social sciences. Applications should prepare plans for new high impact activities that are not feasible with existing resources. For the purposes of this FOA, aging-relevant research is that which addresses issues of importance to the well-being and health of either mid-life or older adults and can include data spanning the entire life course. Applicants need not have a prior history of conducting research in aging.

Network support includes all activities designed to bring together leading scientists across disciplines and institutions to develop an emerging priority area. This program is intended to be flexible and support the creation of innovative networks that will propose activities and bring unique resources necessary to advance a set of well-articulated research goals. The application should be designed to have a substantial impact on the progress and quality of behavioral and social research of relevance to aging by virtue of the proposed activities. Networks are intended to serve the broader community of behavioral and social researchers engaged in aging-relevant research in the designated scientific area and are consequently unlikely to be limited to a single institution. Applications should propose activities designed to advance a field to the point of no longer requiring network support to sustain growth. Applicants should articulate criteria for assessing this progress.

Awards: Application budgets may not exceed \$250,000 per year in direct costs and need to reflect actual needs of the proposed project.

Letter of Intent: January 1, 2019

Deadline: February 1, 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 this date.

No late applications will be accepted for this Funding Opportunity Announcement.

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

Grant Program: Lab to Marketplace: Tools for Brain and Behavioral Research (R43/R44 - Clinical Trial Optional)

Agency: National Institutes of Health PAR-18-819

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PA-18-819.html>

Brief Description: This Funding Opportunity Announcement (FOA) encourages the translation of technologies for brain or behavioral research from academic and other non-small business research sectors to the marketplace. Encouraged from Small Business Concerns (SBCs) are Small Business Innovation Research (SBIR) grant applications that propose to further develop, make more robust, and make more user-friendly such technologies in preparation for commercial dissemination. It is expected that this activity will require partnerships and close collaboration between the original developers of these technologies and SBCs, which may be accomplished in any of a number of ways, including the use of multiple program directors/principal investigators.

Awards: Budgets of up to total \$450,000 per year total cost for Phase I awards and \$750,000 per year total cost for Phase II awards.

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

Deadline: [Standard dates](#) apply, by 5:00 PM local time of applicant organization.

*** Note new SBIR/STTR Standard Due 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 Advanced Postdoctoral Career Transition Award to Promote Diversity (K99/R00 Independent Clinical Trial Not Allowed)

Agency: National Institutes of Health PAR-18-814

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-18-814.html>

Brief Description: The objective of the NIH BRAIN Initiative Advanced Postdoctoral Career Transition Award to Promote Diversity (K99/R00) is to help outstanding postdoctoral researchers from diverse backgrounds with the opportunity to complete needed, mentored training and transition in a timely manner to independent, tenure-track or equivalent faculty positions. The BRAIN Initiative Diversity K99/R00 program is intended to foster the development of a creative, independent researcher that will be competitive for subsequent independent funding and that will help advance the mission of the NIH and BRAIN Initiative research areas in particular. Applicants must have no more than 5 years of postdoctoral research experience at the time of the initial or the subsequent resubmission application. The K99/R00 award is intended for individuals who require at least 12 months of mentored research training and career development (K99 phase) before transitioning to the R00 award phase of the program. Consequently, the strongest applicants will require, and will propose, a well-conceived plan for 1–2 years of substantive mentored research training and career development that will help them become competitive candidates for tenure-track faculty positions and prepare them to launch robust, independent research programs. *An individual who cannot provide a compelling rationale for at least one year of additional mentored research training at the time of award is not a strong candidate for this award.*

Awards: Award budgets are composed of salary and other program-related expenses.

Letter of Intent: Not applicable

Deadline: The first due date is August 1, 2018; [Standard dates](#) apply after that, by 5:00 PM local time of applicant organization. All [types of non-AIDS applications](#) allowed for this funding opportunity announcement are due on these dates.

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

Grant Program: NIH Director's New Innovator Award Program (DP2 - Clinical Trial Optional)

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

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

Brief Description: The [NIH Director's New Innovator Award](#) addresses two important goals: stimulating highly innovative research and supporting promising Early Stage Investigators. Early Stage Investigators may have exceptionally innovative research ideas, but not the preliminary data required to fare well in the traditional NIH peer review system. As part of NIH's commitment to increasing opportunities for Early Stage Investigators, it has created the NIH Director's New Innovator Award to support exceptionally creative Early Stage Investigators who propose highly innovative research projects with the potential for unusually high impact. This award complements ongoing efforts by the NIH and its Institutes and Centers to fund Early Stage Investigators through R01 grants and other mechanisms. The definition of Early Stage Investigator is provided [here](#).

The NIH Director's New Innovator Award is different from traditional NIH grants in several ways. It is designed specifically to support unusually creative investigators with highly innovative research ideas at an early stage of their career when they may lack the preliminary data required for an R01 grant application. The emphasis is on innovation and creativity; preliminary data are not required, but may be included. No detailed, annual budget is requested in the application. The review process emphasizes the individual's creativity, the innovativeness of the research approaches, and the potential of the project, if successful, to have a significant impact on an important biomedical or behavioral research problem.

Investigators who were not selected for an award in prior years may submit applications this year as long as they retain their ESI (early stage investigator) eligibility; however, all applications must be submitted as "new" applications regardless of any previous submission to the program. No reference to any prior application may be included. Any reference to prior applications may be grounds for administrative withdrawal.

The NIH Director's New Innovator Award is part of the [High-Risk, High-Reward Research program](#) funded through the [NIH Common Fund](#), which supports cross-cutting programs that are expected to have exceptionally high impact. All Common Fund initiatives invite investigators to develop bold, innovative, and often risky approaches to address problems that may seem intractable or to seize new opportunities that offer the potential for rapid progress.

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

Letter of Intent: Not applicable

Deadline: September 21, 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. 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: NIH Director's Transformative Research Award (R01 - Clinical Trial Optional)

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

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

Brief Description: The [NIH Director's Transformative Research Award](#) supports collaborative investigative teams or individual scientists who propose unusually innovative research projects, which, if successful, would have a major impact in a broad area of biomedical or behavioral research. To be considered transformative, projects must have the potential to create or overturn fundamental scientific paradigms through novel approaches, transform the way research is conducted through the development of novel tools or technologies, or lead to major improvements in health through the development of highly innovative therapies, diagnostic tools, or preventive strategies. Consistent with this focus, Transformative Research Award applications should reflect ideas substantially different from mainstream concepts.

Several key features of this FOA are designed to emphasize to applicants and peer reviewers that Transformative Research applications are very different from conventional, investigator-initiated research applications. The Transformative Research application focuses on the importance of the problem, the novelty of the hypothesis and/or the proposed methodology, and the magnitude of the potential impact rather than on preliminary data or experimental details. Reviewers will be instructed to emphasize the significance and innovation of the application in their evaluations. Applicants and reviewers should keep the goal of the Transformative Research Award in mind throughout the process– to solicit and fund unusually innovative and potentially transformative research.

The [NIH Director's Transformative Research Award](#) is part of the [High-Risk, High-Reward Research program](#) funded through the [NIH Common Fund](#), which supports cross-cutting programs that are expected to have exceptionally high impact. All Common Fund initiatives invite investigators to develop bold, innovative, and often risky approaches to address problems that may seem intractable or to seize new opportunities that offer the potential for rapid progress.

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

Letter of Intent: Not applicable

Deadline: September 21, 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. 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.

Department of Defense/US Army/DARPA/ONR

Grant Program: FY2019 Office of Naval Research Young Investigator Program

Agency: Department of Defense Office of Naval Research N00014-18-S-F009

Website: <https://www.onr.navy.mil/science-technology/directorates/office-research-discovery-invention/sponsored-research/yip.aspx>

Brief Description: The Office of Naval Research (ONR) is interested in receiving proposals for its Young Investigator Program (YIP). ONR's YIP seeks to identify and support academic scientists and engineers who are in their first or second full-time tenure-track or [tenure-track-equivalent academic appointment](#), who have received their doctorate or equivalent degree on or after 01 January 2011, and who show exceptional promise for doing creative research. The objectives of this program are to attract outstanding faculty members of Institutions of Higher Education (hereafter also called "universities") to the Department of the Navy's Science and Technology (S&T) research program, to support their research, and to encourage their teaching and research careers. Individuals who are holding non-profit equivalent positions are encouraged to apply.

Proposals addressing research areas described in the [ONR science and technology \(S&T\) department section](#) of ONR's website, which are of interest to ONR program officers and division directors will be considered. Contact information for each division (a subgroup of an S&T department) is also listed within

that section. Potential applicants may contact the appropriate division director or the program officer who is the point-of-contact for a specific technical area, to discuss their research ideas. Brief informal pre-proposals may be submitted to facilitate these discussions. Such discussions can clarify the content and breadth of the priority research areas and enhance the match between a subsequent proposal and DoN research needs.

An individual wishing to apply for a Young Investigator award must submit a research proposal and at least one letter of support through the appropriate university officials. Applications received without a letter of support will be considered incomplete and will not be considered for award. ONR makes awards to institutions, not individuals. The research proposal should follow the format described in ONR funding opportunity announcement (FOA) N00014-18-S-F009, listed among [ONR's broad agency announcements](#), in Section IV titled, "Application and Submission Information."

Eligibility Requirements: Awards under this announcement will be made only to U.S. institutions of higher education which award degrees in science, engineering or mathematics. U.S. non-profit organizations operating primarily for scientific and educational services may also submit proposals. The principal investigator of a proposal must be a U.S. citizen, national or permanent resident (on the date proposals are due), holding a first or second full-time tenure-track or tenure-track-equivalent faculty position at that university, and has received his/her doctorate or equivalent degree on or after 01 January 2011. The term "national" of the United States includes a native resident of a possession of the United States, such as American Samoa.

Awards: Research proposed under the FY18 PRORP ARA may include small- to largescale projects. These awards are expected to yield potential health products, approaches, or technologies positioned for human testing. Upon successful completion, the proposed research is expected to yield knowledge products, approaches, or technologies that have the potential to advance toward clinical translation. Strong transition plans are expected. Applicants to the FY18 PRORP ARA are asked to consider, where appropriate, the inclusion of large animal studies in their research plan.

Proposal Deadline: Full Proposals: Friday, 31 August 2018 at 11:59 p.m. local Eastern time

Contact Information: Reginald G. Williams, Ph.D.

Point of contact: Paula Barden

Email: paula.barden_ctr@navy.mil

Grant Program: Critical Technology Studies Program

Agency: Department of Defense; Defense Intelligence Agency HHM402-18-FOA-399-A

Website: <https://intelligencecommunitynews.com/dia-to-provide-grants-for-critical-technology-studies-programs/>

Brief Description: The Department of Defense; Virginia Contracting Activity in conjunction with the Intelligence Community Centers for Academic Excellence is RE-SOLICITING VIA GRANTS.GOV proposal responses to HHM402-18-FOA-399-A Funding Opportunity Announcement for grant awards to build partnerships with accredited universities, colleges and institutions for higher education across the nation for Critical Technology Studies Program. Eligible institutions are encouraged to submit proposals that offer innovative ideas to establish/enhance a Center for Academic Excellence program which will create, attract, and sustain a robust and knowledgeable student applicants. Information on CAE program can be found at: <http://www.dia.mil/Training/ICCAE/>

HHM402-18-FOA-399-A solicitation documents are available ONLY at www.GRANTS.GOV; Instructions to access Grants.gov is as follows: www.grants.gov provides the Federal grant community a single internet site for finding and applying for grant funding opportunities. DIA requires applicant institutions to submit their FY 18 FOA proposal electronically through www.grants.gov/web/grants/applicants/apply-for-grants.html. Please carefully review the submission practices in www.grants.gov.

Awards: 3 years award; Award Ceiling: \$2,000,000; Anticipated Total Funding: \$10,000,000

Proposal Deadline: All submissions shall be received on or before 11:59 PM Eastern Standard Time August 3, 2018. The www.grants.gov portal will not accept proposals after the deadline.

Contact Information: Stephen Lee Grants Officer Phone 202-231-2816

Grant Program: Peer Reviewed Orthopaedic Research Program Applied Research Award

Agency: Department of Defense Dept. of the Army – USAMRAA W81XWH-18-PRORP-ARA

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

Brief Description: An estimated 3,700 civilian amputations occur annually as a result of traumatic injury. In the military, extremity battle wounds comprise approximately 50% of injuries in the Joint Theater Trauma Registry. However, orthopaedic injuries and conditions that occur outside of combat (during training, leisure activities, resultant from old injuries, etc.) are the greatest threat to the readiness of our Service members and military. Early stabilization and treatment of orthopaedic injuries in both civilian and military populations have led to better outcomes, particularly in the prevention of secondary complications and in minimizing morbidity. Availability of orthopaedic care and treatment as early as possible, or as close to the point of injury as possible, also minimizes limb loss and loss of troop readiness. However, in potential future conflicts in rural areas, austere combat zones, or in mass casualty events, access to medical care may be delayed for hours, if not days or weeks.

The North Atlantic Treaty Organization (NATO) defines Prolonged Field Care (PFC) as field trauma care extended beyond doctrinal timelines until the patient can be transported from the point of injury to an appropriate level of care. PFC has been identified as the number one capability gap across the Army, and a major priority for other Services. Additional information regarding PFC can be found in the following documents: [http://www.wemjournal.org/article/S1080-6032\(17\)30063-7/pdf](http://www.wemjournal.org/article/S1080-6032(17)30063-7/pdf) and http://mrmc.amedd.army.mil/index.cfm?pageid=media_resources.articles.prolonged_field_care_the_new_normal.

Awards: Research proposed under the FY18 PRORP ARA may include small- to largescale projects. These awards are expected to yield potential health products, approaches, or technologies positioned for human testing. Upon successful completion, the proposed research is expected to yield knowledge products, approaches, or technologies that have the potential to advance toward clinical translation. Strong transition plans are expected. Applicants to the FY18 PRORP ARA are asked to consider, where appropriate, the inclusion of large animal studies in their research plan.

Proposal Deadline: Pre-Application Submission Deadline: 5:00 p.m. Eastern time (ET), July 30, 2018

- Invitation to Submit an Application: September 5, 2018
- Application Submission Deadline: 11:59 p.m. ET, October 24, 2018

Contact Information: CDMRP Help Desk

Phone: 301-682-5507

Email: help@eBRAP.org

Grant Program: Research Interests of the Air Force Office of Scientific Research

Agency: Department of Defense Air Force Office of Scientific Research FA9550-18-S-0003

Website: <http://www.federalgrants.com/Research-Interests-of-the-Air-Force-Office-of-Scientific-Research-71509.html>

Brief Description: The Air Force Office of Scientific Research manages the basic research investment of the U.S. Air force. As a part of the Air Force Research Laboratory (AFRL), our technical experts discover, shape, and champion research within AFRL, universities, and industry laboratories to ensure the transition of research results to support U.S. Air Force needs. Using a carefully balanced research

portfolio, our research managers seek to foster revolutionary scientific breakthroughs enable the Air force and U.S. industry to produce world-class, militarily significant, and commercially valuable products.

Awards: Various; The FY18 appropriation is \$100M.

Proposal Deadline: June 30th, 2019

Contact Information: Melissa A. Campbell Procurement Analyst Phone 703-696-7722

[Business Office Email](#)

Grant Program: DoD Orthotics and Prosthetics Outcomes, Clinical Research Award

Agency: Department of Defense Dept of Army W81XWH-18-OPORP-CRA

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

Brief Description: Applications to the FY18 OPORP Clinical Research Award (CRA) must address at least one of the Focus Areas listed below. Selection of the appropriate primary Focus Area is the responsibility of the applicant. Studies that propose development of a new technology or improvement of an existing technology are not allowed according to Congressional intent of the OPORP. • Orthotic or Prosthetic Device Form: Understand patient outcomes through the analysis and characterization of variables related to the form of currently available clinical options such as device size, shape, material, and/or configurations. • Orthotic or Prosthetic Device Fit: Understand patient outcomes related to human-device interface and component connection through the analysis of variables in currently available clinical options that facilitate fit-related metrics such as comfort and/or usability. • Orthotic or Prosthetic Device Function: Understand patient outcomes through the analysis of variables related to currently available device function such as device control, sensors, and passive or active response with respect to activities of daily living and other real-world activities.

Awards: Various; The FY18 appropriation is \$10M.

Proposal Deadline:

Pre-Application Submission Deadline: 5:00 p.m. Eastern time (ET), August 6, 2018 • Invitation to Submit an Application: September 5, 2018 • Application Submission Deadline: 11:59 p.m. ET, October 25, 2018

Contact Information: Contact Information: Questions related to Program Announcement content or submission requirements as well as questions related to the pre-application or intramural application submission through eBRAP should be directed to the CDMRP Help Desk, which is available Monday through Friday from 8:00 a.m. to 5:00 p.m. ET. Response times may vary depending upon the volume of inquiries. Phone: 301-682-5507 Email: help@eBRAP.org

Grant Program: Spinal Cord Injury Research Program Investigator-Initiated Research Award

Agency: Department of Defense Dept of Army W81XWH-18-SCIRP-IIRA

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

Brief Description: Applications to the Fiscal Year 2018 (FY18) Spinal Cord Injury Research Program (SCIRP) are being solicited for the Defense Health Agency (DHA) J9, Research and Development Directorate, by the U.S. Army Medical Research Acquisition Activity (USAMRAA) using delegated authority provided by United States Code, Title 10, Section 2358 (10 USC 2358). As directed by the Office of the Assistant Secretary of Defense for Health Affairs (OASD[HA]), the DHA manages the Defense Health Program (DHP) Research, Development, Test, and Evaluation (RDT&E) appropriation. The execution management agent for this Program Announcement is the Congressionally Directed Medical Research Programs (CDMRP). The SCIRP was initiated in 2009 to provide support for research of exceptional scientific merit that has the potential to make a significant impact on improving the health and well-being of military Service members, Veterans, and other individuals living with spinal cord injury

(SCI). Appropriations for the SCIRP from FY09 through FY17 totaled \$217.85 million (M). The FY18 appropriation is \$30M.

To meet the intent of the award mechanism, applications must address at least one of the FY18 SCIRP IIRA Focus Areas listed below. Applications may address more than one Focus Area. In particular, applications combining biomarker studies with studies in one or more of the following Focus Areas are encouraged: preserving and protecting tissues after injury; bladder dysfunction, bowel dysfunction, and neuropathic pain; and rehabilitation and regeneration. Applications using clinically relevant combinations of interventions within or across Focus Areas are also encouraged.

- Preserving and protecting tissue early after injury: Applications should demonstrate a clear path from proposed research to improved neurological outcomes. ○ Preclinical and clinical studies are supported in this FY18 SCIRP IIRA Focus Area.

Includes surgical and acute care management of SCI. ○ Early therapeutics (devices and pharmacologic interventions) to stabilize SCI in the prehospital environment and during transport are encouraged. ○ Applications proposing neuroprotective interventions need to demonstrate a clinically feasible window for treatment and more than an incremental improvement over existing therapies.

- Biomarkers: Identifying and validating SCI biomarkers for diagnosis, prognosis, and evaluation of treatment efficacies: ○ Preclinical and clinical studies are supported in this FY18 SCIRP IIRA Focus Area. Correlative studies with existing clinical trials are allowed and encouraged. ○ Biomarkers must focus on diagnosis, prognosis, progression, and/or recovery of SCI. ○ Projects can include imaging and other modalities. ○ Applications should demonstrate a clear path to clinical use. ○ Biomarker studies directed at identifying the best single or combination of treatments for individuals (personalized medicine) are encouraged.

Awards: The anticipated direct costs budgeted for the entire period of performance for an FY18 SCIRP IIRA will not exceed \$500,000. Refer to Section II.D.5, Funding Restrictions, for detailed funding information.

Proposal Deadline:

Pre-Application Submission Deadline: 5:00 p.m. Eastern time (ET), July 9, 2018 • Invitation to Submit an Application: August 2018 • Application Submission Deadline: 11:59 p.m. ET, October 15, 2018

Contact Information: Questions related to Program Announcement content or submission requirements as well as questions related to the pre-application or intramural application submission through eBRAP should be directed to the CDMRP Help Desk, which is available Monday through Friday from 8:00 a.m. to 5:00 p.m. ET. Response times may vary depending upon the volume of inquiries. Phone: 301-682-5507 Email: help@eBRAP.org

Grant Program: DoD Hearing Restoration Focused Applied Research Award

Agency: Department of Defense Dept of Army W81XWH-18-HRRP-FARA

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

Brief Description: The FY18 HRRP FARA mechanism is intended to support applied research that will advance the diagnosis and treatment of auditory dysfunction where hearing sensitivity may be within normal limits but the individual's capacity to listen and understand speech is substantially impaired. Such listening difficulties are often described using terms such as synaptopathy, hidden hearing loss, and central auditory processing disorders. These disorders can be triggered by exposure to loud noises such as those encountered on the battlefield or certain work environments. While these types of auditory dysfunction may severely affect the ability of a person to hear and interpret speech, they are not readily diagnosed by typical hearing tests. If a Service member cannot effectively hear battlefield communication and sounds, s/he may pose a danger to himself/herself, others in the unit, and the mission. There is a great need for validated and reliable techniques and methods to detect and assess these types of auditory dysfunction,

especially techniques and methods that can be applied by a non-specialist (e.g., physician assistants, medics, or corpsmen) in the operational environment (e.g., a Forward Operating Base or a Battalion Aid Station) to quickly screen Service members for combat readiness. Techniques and methods are further needed to identify the component(s) of the auditory system or pathway that is (are) damaged. Interventions are needed to treat different types of damage (e.g., synaptopathy, central auditory processing disorder) or mitigate their adverse effects on hearing. It is expected that the diagnostic tools, tests, and treatments developed under the FARA would also benefit the general public by advancing hearing loss prevention/treatment and improving hearing health care for individuals in rural or remote deployed environments.

Awards: Various; The FY18 appropriation is \$10M.

Proposal Deadline:

Pre-Application Submission Deadline: 5:00 p.m. Eastern time (ET), July 17, 2018 • Invitation to Submit an Application: September 2018 • Application Submission Deadline: 11:59 p.m. ET, November 8, 2018

Contact Information: Questions related to Program Announcement content or submission requirements as well as questions related to the pre-application or intramural application submission through eBRAP should be directed to the CDMRP Help Desk, which is available Monday through Friday from 8:00 a.m. to 5:00 p.m. ET. Response times may vary depending upon the volume of inquiries. Phone: 301-682-5507 Email: help@eBRAP.org

Grant Program: NRL Long Range Broad Agency Announcement (BAA) for Basic and Applied Research

Agency: Department of Defense Naval Research Laboratory N00173-18-S-BA01

Website: <https://www.nrl.navy.mil/doing-business/Current-NRL-BAA>

Brief Description: The Naval Research Laboratory (NRL) The Naval Research Laboratory (NRL) is the Navy's corporate laboratory. NRL conducts basic and applied research for the Navy in a variety of scientific and technical disciplines. The basic research program is driven by perceptions about future requirements of the Navy. NRL conducts most of its research program at its own facilities but also funds some related research such as anticipated by this announcement. More extensive research support opportunities are available from the Naval Research Laboratory (NRL). NRL announcements may be accessed via the Internet at <https://www.nrl.navy.mil/doingbusiness/contracting-division/baa>. NRL is interested in receiving proposals for Long-Range Science and Technology (S&T) Projects which offer potential for advancement and improvement of Navy and Marine Corps operations. Readers should note that this is an announcement to declare NRL's broad role in competitive funding of meritorious research across a spectrum of science and engineering disciplines. A brief description of the NRL Program Codes and the science and technology thrusts that NRL is pursuing is provided below. Additional information can be found at the NRL website at <https://www.nrl.navy.mil/research/directorates-divisions/>. This announcement is an expression of interest only and does not commit the Government to make any award or to pay for any proposal preparation costs. The cost of proposal preparation for response to a BAA is not considered an allowable direct charge to any resultant contract or any other contract; however, it may be an allowable expense to the normal bid and proposal indirect cost specified in FAR 31.205-18.

Awards: Various

Proposal Deadline: May 9, 2019

Contact Information: Mary Johnson Contract Specialist Phone 202-767-2021

Department of Education

Grant Program: Institute of Education Sciences (IES): Education Research CFDA Number 84.305A

Agency: Department of Education ED-GRANTS-052118-001

Website: <https://www.gpo.gov/fdsys/pkg/FR-2018-05-21/pdf/2018-10802.pdf>

Brief Description: Each funding opportunity description is a synopsis of information in the Federal Register application notice. For specific information about eligibility, please see the official application notice. The official version of this document is the document published in the Federal Register. Free Internet access to the official edition of the Federal Register and the Code of Federal Regulations is available on GPO Access at: <http://www.access.gpo.gov/nara/index.html>. Please review the official application notice for pre-application and application requirements, application submission information, performance measures, priorities and program contact information.

For the addresses for obtaining and submitting an application, please refer to our Common Instructions for Applicants to Department of Education Discretionary Grant Programs, published in the Federal Register on February 12, 2018 (83 FR 6003) and available at www.gpo.gov/fdsys/pkg/FR-2018-02-12/pdf/2018-02558.pdf.

The dates when applications are available and the deadlines for transmittal of applications invited under this notice are indicated in the chart at the end of this notice and in the Requests for Applications (RFAs) that are posted at the following websites: <https://ies.ed.gov/funding>, <https://www.ed.gov/programs/edresearch/index.html>, and <https://www.ed.gov/programs/specialedresearch/index.html>.

Purpose of Program: In awarding these grants, the Institute of Education Sciences (Institute) intends to provide national leadership in expanding fundamental knowledge and understanding of (1) developmental and school readiness outcomes for infants and toddlers with or at risk for a disability, (2) education outcomes for all students from early childhood education through postsecondary and adult education, and (3) employment and wage outcomes when relevant (such as for students who engaged in career and technical, postsecondary, or adult education). The Institute's research grant programs are designed to provide interested individuals and the general public with reliable and valid information about education practices that support learning and improve academic achievement and access to education opportunities for all students. These interested individuals include parents, educators, students, researchers, and policymakers. In carrying out its grant programs, the Institute provides support for programs of research in areas of demonstrated national need.

Competitions in This Notice: The Institute will conduct nine research competitions in FY 2019 through two of its centers: The Institute's National Center for Education Research (NCER) will hold a total of five competitions--one competition in each of the following areas: Education research; education research and development centers; statistical and research methodology in education; partnerships and collaborations focused on problems of practice or policy; and low-cost, short-duration evaluation of education interventions.

Catalog of Federal Domestic Assistance (CFDA) numbers 84.305A, 84.305C, 84.305D, 84.305H, 84.305L, 84.324A, 84.324B, 84.324L, and 84.324N.

Awards: Up to \$4,000,000. Estimated total funding: \$115,000,000

Proposal Deadline: Aug 23, 2018 Application Package Available: June 21, 2018. Deadline for Transmittal of Applications: August 23, 2018

Contact Information: Julius Cotton ED Grants.gov FIND Systems Admin. Phone 202-245-6288 EducationGrantInquiries@ed.gov

Program Manager: Molly Faulkner-Bond e-Mail: Molly.Faulkner-Bond@ed.gov .

Department of Energy

Grant Program: Integrated University Program (IUP): Enabling Technologies and Innovation (ETI) & Monitoring, Technology and Verification (MTV)

Agency: Department of Energy DE-FOA-0001875

Website: <https://www.fedconnect.net/FedConnect/default.htm>

Brief Description: The mission of the U.S. Department of Energy (DOE), National Nuclear Security Administration (NNSA), Office of Defense Nuclear Nonproliferation Research and Development (DNN R&D) is to support U.S. national and nuclear security objectives in reducing global nuclear security threats through the innovation of unilateral and multi-lateral technical capabilities to detect, identify, and characterize: 1) foreign nuclear weapons programs, 2) illicit diversion of special nuclear materials, and 3) global nuclear detonations. Section 313 of the Omnibus Appropriations Act of 2009 (H.R. 1105, P.L. 111-8) created the Integrated University Program (IUP). DNN R&D is one of the three participants in this program and is continuing a nuclear science and engineering program, including nuclear security, to support multi-year research projects. The role of Institutions of Higher Education (IHE; as defined in Section III.A. of the FOA) for nuclear security research and development is to innovate and develop some of the most challenging basic aspects of new technology and methods. Once these basic aspects have been proven at the IHE level, the DOE/NNSA National Laboratories and/or National Security Sites/Complexes can fulfill their unique role to perform mission-specific research and development that improves on capabilities until they are either adopted by operational enterprises or transitioned into private industry for commercialization. Transparently and effectively linking these IHE and DOE/NNSA National Laboratory and/or National Security Sites/Complexes roles represents the core of how DNN R&D proposes to meet its objectives. The intent of this FOA is to award TWO separate five-year cooperative agreements to consortia of accredited IHEs to allow them to receive and administer funds for student and faculty research, fellowships, and scholarship funding awarded by DOE/NNSA, DNN R&D. Each cooperative agreement will be awarded to a consortium of IHEs which will include the participation of DOE/NNSA National Laboratories and/or National Security Sites/Complexes as a consortium-member(s). Individual consortium-member IHEs shall make specific contributions and shall receive specified portions of the funding. The consortium may include student and research fellows and must have a long-term objective of building expertise in nuclear nonproliferation detection. Research results should be incorporated readily into IHE curricula. Students, faculty, and researchers must be able to work unencumbered while moving across what are now organizational and bureaucratic boundaries of the academic and governmental facilities engaged in the consortium, while properly protecting critical information and materials. The consortium should establish reciprocal arrangements between the lead IHE and other IHEs as well as relationships with appropriate DOE/NNSA National Laboratories and/or National Security Sites/Complexes.

Awards; Up to \$25,000,000; Available Funding: \$50,000,000

Submission Deadline: Sep 04, 2018 Application deadline is September 4, 2018, 11:59PM Eastern Standard Time.

Contact Information: Grant Specialist Alex Trejo 505-845-5472 alex.trejo@nnsa.doe.gov

NASA

Grant Program: ROSES 2018: DSCOVER Science Team

Agency: NASA NNH18ZDA001N-DSCOVER

Website: <https://nspires.nasaprs.com/external/solicitations/summary.do?solId=%7B9C06DA13-5411-0043-725E-24CAB3A588F6%7D&path=open&method=init>

Brief Description: NASA's Earth Science Research Program supports research activities that address the Earth system and seek to characterize its properties on a broad range of spatial and temporal scales, to understand the naturally occurring and human-induced processes that drive them, and to improve our capability for predicting its future evolution. The focus of the Earth Science Research Program is the use of space-based measurements to provide information not available by other means. NASA's program is an end-to-end one that starts with the development of observational techniques and the instrument technology needed to implement them; tests them in the laboratory and from an appropriate set of in situ, surface-, ship-, balloon-, aircraft-, and/or space-based platforms; uses the results to increase basic process knowledge; incorporates results into complex computational models that can be used to more fully characterize the present state and future evolution of the Earth system; and develops partnerships with other national and international organizations that can use the generated information in environmental forecasting and in policy, business, and management decisions. The scientific documentation underlying the Earth Science Research Program provides a comprehensive background for the science solicited here. The Research Program addresses NASA's Strategic Goal 2.1 to "Advance Earth System Science to meet the challenges of climate and environmental change." (See the most recent NASA Strategic Plan: https://smd-prod.s3.amazonaws.com/science-red/s3fspublic/atoms/files/FY2014_NASA_StrategicPlan_508c.pdf). In particular, it addresses the more specific Science Goals (see the Science Plan for NASA's Science Mission Directorate (hereafter the NASA Science Plan), also available at https://smdprod.s3.amazonaws.com/science-red/s3fspublic/atoms/files/2014_Science_Plan_PDF_Update_508_TAGGED_1.pdf)

Awards: Various

Notice of Intent: July 09, 2018

Proposal Deadline: September 04, 2018

Contact: Richard S. Eckman

Earth Science Division

Science Mission Directorate

NASA Headquarters

Washington, DC 20546-0001

Telephone: 202-358-2567

Email: Richard.S.Eckman@nasa.gov

Grant Program: ROSES 2018: Heliophysics Space Weather Operations to Research

Agency: NASA NNH18ZDA001N-HSWO2R

Website: <https://nspires.nasaprs.com/external/solicitations/summary.do?solId=%7BE17AD920-C9F2-600D-5913-6951AB56F31F%7D&path=open&method=init>

Brief Description: NASA's heliophysics strategic objective is to understand the Sun and its interactions with the Earth and the Solar System, including space weather. In this framework, the Heliophysics Research Program is guided by goals defined in the NASA 2014 Science Plan (available at <https://science.nasa.gov/about-us/science-strategy>) and the 2013 National Research Council Decadal Strategy for Solar and Space Physics report, Solar and Space Physics: A Science for a Technological Society (www.nap.edu/catalog.php?record_id=13060) and its purpose is to enable achieving these goals, which are: 1. Determine the origins of the Sun's activity and predict the variations in the space environment; 2. Determine the dynamics and coupling of Earth's magnetosphere, ionosphere, and atmosphere and their response to solar and terrestrial inputs; 3. Determine the interaction of the Sun with the Solar System and the interstellar medium; 4. Discover and characterize fundamental processes that occur both within the heliosphere and throughout the Universe. The Heliophysics Research Program seeks to understand phenomena, on a broad range of spatial and temporal scales, the fundamental processes that drive them, how these processes combine to create space weather events, and to enable a capability for

predicting future space weather events. In concert with the other NASA science divisions (Planetary Science, Astrophysics, and Earth Science), the program shares responsibility for learning about the Earth, our solar system, the universe, and their interrelationships.

Awards: Standard Grants

Proposal Deadline: August 03, 2018

Contact: Terrance Onsager

Heliophysics Division

Science Mission Directorate

NASA Headquarters

Washington, DC 20546-0001

Telephone: (202) 358-1615

Email: terrance.g.onsager@nasa.gov

National Endowment of Humanities

Grant Program: Infrastructure and Capacity Building Challenge Grants

Agency: National Endowment of Humanities

Website: <https://www.neh.gov/grants/preservation/infrastructure-and-capacity-building-challenge-grants>

Brief Description: The mission of this Challenge Grants program is to strengthen the institutional base of the humanities by enabling infrastructure development and capacity building. Awards aim to help institutions secure long-term support for their core activities and expand efforts to preserve and create access to outstanding humanities materials. Applications are welcome from colleges and universities, museums, public libraries, research institutions, historical societies and historic sites, scholarly associations, state humanities councils, and other public and nonprofit humanities entities. Programs that involve collaboration among multiple institutions are eligible as well, but one institution must serve as the lead agent and formal applicant of record.

Through these awards organizations can increase their humanities capacity with funds invested in a restricted, short-term endowment or other investment fund (or spend-down funds) that generate expendable earnings to support and enhance ongoing program activities. Eligible activities include the documentation of cultural heritage materials that are lost or imperiled; the preservation and conservation of humanities materials; and the sustaining of digital scholarly infrastructure.

Challenge grants may also support the purchase of equipment and software; the design, purchase, construction, restoration, or renovation of facilities needed for humanities activities; and collections sharing. Such expenditures bring long-term benefits to the institution and to the humanities more broadly.

Award: Up to \$750,000

Proposal Deadline: August 09, 2018

Contact: Contact NEH's Division of Preservation and Access at 202-606-8309 or challenge@neh.gov.

Phrma Foundation

Grant Program: Informatics

Agency: Phrma Foundation

Website: <http://www.phrmafoundation.org/2018-awards/pre-doctoral-fellowship-awards/informatics/>

Brief Description: This award supports students in advanced stages of training and thesis research.

The goal of the Informatics awards program is to promote development and use of novel informatics in an integrative approach toward understanding normal processes of human biology and disease processes. Informatics awards support career development of scientists engaged in research that significantly integrates state-of-the-art information technology developed with advanced biological, chemical, and pharmacological sciences in the following areas:

- Genetics Proteomics
- Molecular Systems Biology
- Medical (human) Pathways and Networks
- Pharmaco- Integrative Biology
- Population Modeling and Simulation
- Novel approaches to the analysis of Big Data

Genomics Molecular Epidemiology

- Functional
- Structural
- Toxico-
- Pharmaco-
- Comparative

Eligibility: This program supports full-time, in-residence students who will have completed most of their pre-thesis requirements (at least two years of study) and be engaged in thesis research as PhD candidates by the time the award is activated. Due to the high demand for this fellowship, the PhRMA Foundation will accept only two applications per academic institution. All applicants must be U.S. citizens or permanent residents.

Awards: \$20,000 per year, up to two years.

Proposal Deadline: September 1, 2018 @ 11:59 PM EDT

Contact: Please let Eric Blitz (eric.blitz@njit.edu) and Atam Dhawan (dhawan@njit.edu) know if you are interested in applying.

Samsung

Grant Program: The Global Research Outreach (GRO) Program

Agency: Samsung

Website: <https://www.sra.samsung.com/partnerships/university/>

Brief Description: Theme: EXPLAINABLE DEEP LEARNING MODELS - Sub Theme: Explainable Models in Multi-modal Applications The task of explaining Deep Learning (DL) models has gained a lot of interest from the research community in recent times. In this GRO, we propose studying explainability of DL models, specifically via two problems: (a) Explainable Multi-modal Visual Dialog: There are many scenarios in mobile phone or desktop usage where a user inspects an image (e.g., a picture shared on the phone or an image obtained while browsing the web) and asking questions about it (e.g., where was this picture taken) – this is the problem of Visual Question Answering (VQA). The user may also ask for explanations for the answers generated in VQA (e.g., why you think so) – this is the task of Explainable Question Answering (XQA). However, while using a conversational assistant like Samsung Bixby, the user may be involved in a multi-modal dialog with the assistant, using text input, speech, etc. Those additional user input may contain rich context information for the assistant to understand and digest. As the assistant interacts with the user in a conversation across multiple modalities, the user may ask for explanations at different stages -- we call this the problem of Explainable Multi-modal Visual Dialog. (b) Explainable Recommendations: The Bixby assistant often makes shopping suggestions or other purchase recommendations to the user (e.g., based on an image that is taken from the camera album, based on a spoken purchase request made by the user, etc.). One of the research goals in such a recommendation

system could be explaining the underlying reason of the recommendations made during immersive interactive experiences (e.g., when shopping for items online using Bixby vision, using the point-and-shoot camera).

Theme: Beyond 5G Communication Systems - **Sub Theme:** Components for Terahertz Communication Systems Terahertz (THz) frequency band, 0.1 to 10 THz, offers vast spectrum resources to support >100Gbps for beyond 5G communication systems. FCC is currently considering to open the 95 - 475 GHz range for commercial use. Key component challenges for THz communication are low noise/high gain amplification, high linearity transmit power generation, low noise oscillators, and THz frequency conversion. Short wavelengths (3mm @ 100GHz) THz present challenges in conventional antenna element fabrication, while on-chip antennas traditionally exhibit reduced efficiency. Additional challenges arise from increased path loss and the resulting increase in antennas required for sufficient link margin. The latter offers opportunities in spatial spectrum reuse by taking advantage of the resulting pencil-beam transmissions.

Awards: Financial sponsorship for one year, in amounts up to \$120,000

Contact: Please let Eric Blitz (eric.blitz@njit.edu) and Atam Dhawan (dhawan@njit.edu) know if you are interested in applying.

Simons Foundation

Grant Program: Simons Investigator program in the Mathematical Modeling of Living Systems (MMLS)

Agency: Simons Foundation

Website: <https://www.simonsfoundation.org/mathematics-physical-sciences/simons-investigators/simons-investigator-program-nominations/>

Brief Description: The Simons Foundation invites nominations for Simons Investigators in the Mathematical Modeling of Living Systems (MMLS), a joint program of the Mathematics and Physical Sciences and Life Sciences divisions of the Simons Foundation. Investigators in MMLS are outstanding scientists, often with mathematics or theoretical physics backgrounds, now engaged in research based on mathematical modeling in the life sciences.

New approaches in mathematically based modeling are making increasingly important contributions to the life sciences. The MMLS program aims to support theoretical approaches making important contributions to the life sciences and, thus, to foster a scientific culture of theory-experiment collaborations similar to that prevailing in physics. To encourage researchers to pursue this endeavor, the MMLS program will provide a long-term, stable base of support, enabling a focus on model based approaches to important issues in the life sciences. A broad spectrum of research areas within the life sciences will be considered, ranging from cellular-level issues of organization, regulation, signaling and morphogenic dynamics to the properties of organisms and ecology, as well as neuroscience and evolution; however, preference will be given to areas in which modeling approaches are less established and, for this reason, bioinformatics- and genomics-related proposals fall outside the scope of the program. In all cases, preference will be given to work developing deep theoretical ideas relevant to experiments, suggesting new questions and new classes of experiments, introducing important, new concepts, and explaining data.

Theory must connect with experiment, and candidates should articulate their own views about the nature of this connection, rather than accepting conventional wisdom; theory is more than data analysis. The program explicitly does not support translational or specifically human disease-related research.

Eligibility: To be eligible to be nominated for an Investigator in MMLS award, a scientist must be engaged in research related to the MMLS program and must not previously have been a Simons Investigator. He/she must have a primary appointment as a faculty member (tenured or non-tenured) at an educational institution in the United States, Canada, the United Kingdom or Ireland, on a campus

within these countries, and the primary department affiliation must have a Ph.D. program. At the time of the appointment start date, an Investigator should be in the early stages of an academic career and must be within ten years of the start of his/her first faculty position.

Award: A Simons Investigator in MMLS is appointed for a period of five years for up to \$132,000 per year. Appointments will begin August 1, 2019. An Investigator will receive research support in the amount of \$100,000 per year. An additional \$10,000 per year will be provided to the Investigator's department. The Investigator's institution will receive an additional 20 percent per year in indirect costs.

Proposal Deadline: The deadline to submit nominations is October 31, 2018, at 11:59:59 p.m. EST.

University Nomination Process and Contact: If interested, please send an email to Eric Blitz (eric.blitz@njit.edu) and Atam Dhawan (dhawan@njit.edu) and copy to college dean to discuss the nomination before August 1, 2018.

Streamlyne Question of the Week

Question: How can I add another investigator or my research ambassador to my proposal in order to help on budget preparation and edit proposal details?

Answer: Select the "Permissions" link from the left hand side of the main proposal screen in any proposal development document. From the Permissions screen you will be able to search for the person you wish to add and grant them a specific level of permission (aggregator, budget creator, viewer). After you select the appropriate person, click "Add" and they will be added to your proposal.

More FAQs on Streamlyne: Please visit <http://www.njit.edu/research/streamlyne/>

Streamlyne Information

Streamlyne User Manuals: <http://www.njit.edu/research/streamlyne/>

Streamlyne_NewUserManual_CommonElements.docx : This manual provides a reference to all the common elements of Streamlyne Research. This user manual is a good document to review each module's functionality.

Streamlyne_NewUserManual_PD&PDBudget.docx: This is a user manual on proposal and budget development in Streamlyne. The content herein explain the use and functionality of this module. This is the most useful Streamlyne document for PIs and users new to Streamlyne.

How-to-do-Videos

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](#)

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
Sean Andrews, YWCC Director of Research; (973) 596-5352; sean.t.andrews@njit.edu
Iris Pantoja, NCE, CoAD and MTSM Project Manager; 973-596-4483; irp3@njit.edu

Need Information about Funding?

Finding Research Opportunities and Collaborations (FROC) Walk-In Open-Hour Discussion with SVPR Over Tea

Every Thursday: 3.00 PM-4.00 PM; 340 Fenster Hall

The Office of Research has started a new service to help all faculty and staff explore collaborative research opportunities and currently active RFPs (Request for Proposals) for potential proposal development and submission. Faculty and research staff members are welcome to meet with Senior Vice Provost for Research Atam Dhawan at the open-hour every Thursday from 3.00 PM to 4.00 PM to discuss research opportunities related issues including the following but not limited to:

- Research opportunities and potential collaborations
- Currently active RFPs and developing collaborative teams for proposal submission
- Proposal review criterion for specific RFP/program/agency
- Proposal concept and draft review in the context of review criterion
- Future plans for proposal development and submission
- Invention disclosures, patent applications and processing of intellectual property
- External faculty research awards including fellowships

Though *walk-ins* are welcome during the open-hour, faculty members are encouraged to email SVPR Atam Dhawan (dhawan@njit.edu) about specific questions on research opportunities and needs to be discussed in advance for more detailed discussion.

The open-hour session with individuals or small groups of faculty and research staff members is expected to focus on finding research opportunities, developing collaborative teams, exploring the review criterion

and reviewing program requirements. Specific proposal submission and grant management issues can be discussed with Office of Research staff separately.

Enjoy coffee/tea and cookies with SVPR over the discussion.

For any questions and additional information, please send an email to SVPR at dhawan@njit.edu.
