NJIT Research Newsletter

Issue: ORN-2018-30

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/ .

Grant Opportunity Alerts

Keywords and Areas Included in the Grant Opportunity Alert Section Below

NSF: Enabling Quantum Leap: Convergent Accelerated Discovery Foundries for Quantum Materials Science, Engineering and Information (Q-AMASE-i); Advanced Technologies and Instrumentation (ATI); Graduate Research Fellowship Program (GRFP); Secure and Trustworthy Cyberspace (SaTC); Advanced Technological Education (ATE); Information and Intelligent Systems (IIS): Core Programs; Computer and Network Systems (CNS): Core Programs; 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)
NIH: BRAIN Initiative: Development of Novel Tools to Probe Cell-Specific and Circuit-Specific Processes in Human and Non-Human Primate Brain (UG3/UH3); Regenerative Medicine Innovation Project (RMIP) Investigator-Initiated Studies (U01); Short-term Mentored Career Enhancement Awards in Mobile and Wireless Health Technology and Data Analytics: Cross-Training at the intersection of Behavioral and Social Sciences and STEM Disciplines (K18); NCI Outstanding Investigator Award (R35); Development of Cell and Tissue Platforms to Detect Adverse Biological Consequences of Somatic Cell Genome Editing (U01); Mentored Career Development Award to Promote Faculty Diversity in Biomedical Research (K01); NIDCD Hearing Healthcare for Adults: Improving Access and Affordability (R21/R33)
Department of Defense/US Army/DARPA/ONR: BROAD AGENCY ANNOUNCEMENT (BAA) for Extramural Biomedical Research and Development; DoD Vision, Investigator- Initiated Research Award; Atomic-Photonic Integration; Resilient Anonymous Communication for Everyone (RACE); FY2019 Office of Naval Research Young Investigator Program; Research Interests of the Air Force Office of

Scientific Research; NRL Long Range Broad Agency Announcement (BAA) for Basic and Applied Research
Department of Education: Institute of Education Sciences (IES)
Department of Energy: Support Grants for Participation in ARPA-E Grid Optimization (GO) Competition Challenge ; Machine Learning for Geothermal Energy; Integrated University Program (IUP)
NASA: ROSES 2018: Cassini Data Analysis Program: PDS Cassini Data Release 54**;** ROSES 2018: DSCOVR Science Team
National Endowment of Humanities: Infrastructure and Capacity Building Challenge Grants
CISCO: Research and Open Innovation
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); Simons Foundation Fellowships in Math and Theoretical Physics
Graham Foundation: Architecture and Design Projects
Burroughs Wellcome Fund: Career Awards at the Scientific Interface

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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: Donghee Yvette Wohn (PI)
Department: Informatics
Grant/Contract Project Title: CHS: EAGER: Handling Online Risks and Creating Safe Spaces: Content Moderation in Live Streaming Micro Communities
Funding Agency: NSF
Duration: 08/01/18-07/31/20

PI: Raul Mercado, (PI)
Department: Technology and Business Development
Grant/Contract Project Title: Defense Procurement Technical Assistance Program FY 19
Funding Agency: Defense Logistics Agency
Duration: 08/01/18-07/31/19

PI: Chao Zhu (PI)
Department: Mechanical and Industrial Engineering
Grant/Contract Project Title: The Sound Level Testing for Electronic Devices
Funding Agency: ZT Systems
Duration: 07/23/18-08/31/18

PI: Hyomin Kim (PI)
Department: Center for Solar Terrestrial Research
Grant/Contract Project Title: Collaborative Proposal: A High-Latitude Conjugate Array Experiment to Investigate Solar Wind - Magnetosphere - Ionosphere Coupling
Funding Agency: NSF
Duration: 08/15/18-07/31/22

PI: Anand Oz (PI)
Department: Mathematical Sciences
Grant/Contract Project Title: Wave-Coupled Active Matter
Funding Agency: The Simons Foundation
Duration: 09/01/18-08/31/23

In the News…

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

National Quantum Initiative: Bipartisan bills approved by committees of both chambers would make quantum science research and development a priority for the Department of Energy, National Science Foundation, and the National Institute of Standards and Technology. The measures would establish a 10-year National Quantum Initiative, coordinated by the White House, that supports five DOE-run quantum information science research centers; standards development at NIST, and multidisciplinary research and education centers at NSF. They would also encourage private sector involvement by high-tech firms and startups. The legislation directs DOE to spend, per year, $125 million; NIST to spend $80 million; and NSF to spend $50 million. The agencies, however, would have to take that money away from other programs. The bills state: No additional funds are authorized to be appropriated to carry out this Act and the amendments made by this Act." Read the legislation on https://www.congress.gov/bill/115th-congress/house-bill/6227/text

US Government White House Research Priorities: If confirmed by the Senate, Droegemeier will start his job with the fiscal 2020 budget process already under way. This week, acting OSTP Director, Michael Kratsios and Office of Management and Budget Director Mick Mulvaney spelled out research priorities, including artificial intelligence, autonomous systems, quantum, hypersonics, a modernized nuclear deterrent, and "advanced microelectronics, computing, and cyber capabilities." R&D should also aim to improve resilience and protect the nation and critical infrastructure from natural hazards, physical threats, cyber attacks and threats from drones or biological agents, the memo says. The document calls for strong collaboration among academia, industry, and government, and "Innovative partnership models." The memo includes the following R&D priority areas:

- **Security of the American People** – Based on the National Security Strategy,[2] the President calls for "leadership in research, technology, invention, and innovation" and investment in R&D to maintain military superiority. Specifically, the memo directs prioritized investment in "AI, autonomous systems, hypersonics, a modernized nuclear deterrent, and advanced microelectronics, computing, and cyber capabilities." Agencies are also directed to improve the security and resilience of U.S. critical infrastructure from "natural hazards, physical threats, cyber-attacks, and emerging threats from autonomous systems and biological agents." This includes a range of activities from border security to better weather prediction.

[2] National Security Strategy of the United States of America, December 2017: https://www.whitehouse.gov/wp-content/uploads/2017/12/NSS-Final-12-18-2017-0905.pdf

- **American Leadership in Artificial Intelligence, Quantum Information Sciences, and Strategic Computing** – The memo states that these areas are vital to U.S. national security and economic competitiveness. AI research should include "machine learning, autonomous systems, and applications at the human-technology frontier." Activities in quantum information sciences (QIS) should aim to develop the next generation of QIS theory, devices, and applications. The memo directs agencies to prioritize investment in research and infrastructure to "maintain U.S. leadership in strategic computing, from edge devices to high-performance computing, that accelerates delivery of low power, high performance devices; supports a national high-performance computing ecosystem; and explores novel pathways to advance computing in a post-Moore's Law era."
- American Connectivity and Autonomy – Agencies should support R&D "to manage spectrum, secure networks, and increase access to high-speed internet" to support the development and deployment of advanced communications networks, including 5G wireless networks. Additional prioritization is also given to autonomous driving systems and unmanned aircraft systems (UAS).
- American Manufacturing – The memo highlights the importance of manufacturing technologies for job creation and to strengthen the U.S. manufacturing industrial base, including the need for agencies to work in collaboration with industry where appropriate. Priority areas highlighted in the memo include: "smart and digital manufacturing, and advanced industrial robotics, especially systems enabled by the industrial internet of things (loT), machine learning, and AI." The memo also highlights advanced materials and associated processing technologies; bio-based manufacturing; and semiconductor design and fabrication.
- American Space Exploration & Commercialization – The memo states, "Research investments should be focused on ensuring American leadership in space for long-duration spaceflight, in-space manufacturing, in-situ resource utilization, long-term cryogenic fuel storage and management, and advanced space-related power and propulsion capabilities. Agencies should prioritize demonstrations and flight tests to ensure an industrial base for commercial activity in space and on celestial bodies." Micro-gravity research to advance biopharmaceuticals and materials science is highlighted. Additionally, agencies should support R&D in advanced materials, additive manufacturing, optical communications, and machine learning.
- American Energy Dominance – The memo states, "Fueling America's greatness requires access to domestic sources of clean, affordable, and reliable energy." Agencies are directed to invest in early-stage, innovative technologies, and to rely on the private sector to support later-stage research, development, and commercialization. This is consistent with the Trump Administration's previous attempts to cut funding for applied research programs at the Department of Energy.
- American Medical Innovation – Agencies are directed to focus on basic research and translation. Areas of focus include personalized medicine, disease prevention, addressing the opioid crisis, infectious disease, mental health, and other public health threats. The memo highlights the importance of R&D to support healthcare for veterans, aging adults, and those with disabilities, as well as the need for agencies to work together to manage healthcare data.
- American Agriculture – Agencies are directed to "prioritize R&D that enables advanced and precision agriculture and aquaculture technologies, including the use of embedded sensors, data analytics, and machine learning techniques." Agencies are also directed to "prioritize

investments in pre-competitive research regarding the safety of microorganisms, plants, and animals developed using gene editing, in order to greater leverage biotechnology products for agriculture."

Industry Apprenticeship Funding Opportunity: DOL Scaling Apprenticeships Grants for Institutions of Higher Education Lewis-Burke Associates LLC – July 30, 2018 The Department of Labor (DOL) Employment and Training Administration (ETA) recently released a funding opportunity announcement to support sector-based approaches to developing and expanding apprenticeships on a national scale in key industry sectors. The grant aims to expand apprenticeships to sectors that often utilize H-1B visas, increase apprenticeship activity among small and medium-sized businesses, and promote a sector-based approach to the large-scale expansion of apprenticeships. The notice states, "Grant funds will be awarded to institutions of higher education in partnership with national industry associations, which together seek to develop, implement, and take to a national scale a new apprenticeship model; or expand an existing apprenticeship program to a new industry sector or occupation or a new population, on a national scale." This program aligns with priorities set forth in the Trump Administration's 2017 Executive Order on Expanding Apprenticeship in America. https://www.whitehouse.gov/presidential-actions/3245/

National Defense Authorization Act on Cybersecurity, Artificial Intelligence: Among provisions in the National Defense Authorization Act agreed to by House-Senate negotiators is one that directs the Pentagon "to improve awareness of cybersecurity threats among universities, in addition to small-and medium-sized manufacturers, in the defense industrial supply chain and to establish a broader cybersecurity activity for the defense industrial base as needed." Another section authorizes "a Cyber Institute at any college or university that hosts a Reserve Officers' Training Corps program, with special consideration for the Senior Military Colleges." Conferees also want to hear "how the Department of Defense can partner with and leverage universities and industry in cyber education and training." This would include the "ability to expand and leverage (current) partnerships to improve cyber education and training"; recommendations for changes to make existing curricula relevant to future threats; joint use of instructors and facilities, and "recommendations for legislative or administrative action to improve cyber education and training partnerships." Full report is posted on the website https://docs.house.gov/billsthisweek/20180723/CRPT-115hrpt863.pdf

Energy Department Announces $3.6 Million in Machine Learning for Geothermal Energy: The Energy Department on July 19 announced up to $3.6 million for 4-6 projects that will focus on early-stage R&D applications in machine learning to develop technology improvements in exploration and operational improvements for geothermal resources. The rapidly advancing field of machine learning offers substantial opportunities for technology advancement and cost reduction throughout the geothermal project lifecycle, from resource exploration to power plant operations.

Through this funding opportunity announcement (FOA), DOE's Office of Energy Efficiency and Renewable Energy Geothermal Technologies Office (GTO) will fund projects to support new analytical tools for finding and developing geothermal resources, to establish the practice of machine learning in the geothermal industry, and maximize the value of the rich datasets utilized in the geosciences. GTO will provide funding in two areas:

- Topic 1: Machine Learning for Geothermal Exploration - GTO seeks projects that advance geothermal exploration through the application of machine learning techniques to

geological, geophysical, geochemical, borehole, and other relevant datasets. Of particular interest are projects that will identify drilling targets for future work.

- Topic 2: Advanced Analytics for Efficiency and Automation in Geothermal Operations - GTO seeks projects that apply advanced analytics to power plant and other operator datasets, with the goal of improving operations and resource management.

For consideration of full application, applicants must submit their concept paper by 5 p.m. ET on Aug. 23, 2018 to be eligible to submit a full application. View the FOA and submission instructions.

Webinar and Events

Event: Office of Advanced Cyberinfrastructure (OAC): Research Core Program Webinar
Sponsor: NSF
When: August 7, 2018; 2.00 PM – 3.00 PM
Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=296101&org=NSF
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.
This webinar will cover the OAC core program solicitation, NSF 18-567, submission requirements and program updates.
To participate in the webinar, please register at:
https://nsf2.webex.com/nsf2/onstage/g.php?MTID=e18b1f392f8f79b6d6ef7c4521809180a
by 11:59pm EDT on Tuesday August 6, 2018.

Event: Leveraging AI, Patent and Technical Data to Drive Business Decisions.
Sponsor: IP.Com
When: August 9, 2018; 11.00 AM – 12.00 PM
Website: https://smartgrid.ieee.org/assessment-of-derms-deployment-under-various-operating-conditions
Brief Description: From Big Companies to Small Companies, learn how professionals are leveraging AI, Patent Data and Technical Data to Drive Critical Business Decisions.

Please join Jasminder Brar, Director of Strategic Development and Intellectual Property at Titan Medical and James Durkin, Patent Attorney and Sr. Sales Engineer at IP.com, to discuss how companies of all sizes are leveraging artificial intelligence to make better R&D, Innovation, Strategy and Intellectual Property decisions.
To participate in the webinar, please register at: Register for the Webinar

Event: Export Controls: When are Universities and Research Institutions Subject to the Export Administration Regulations?
Sponsor: US Commercial Service Global Education Team
When: August 28, 2018; 1.00 PM – 2.00 PM; Fee; $25
Website: https://emenuapps.ita.doc.gov/ePublic/event/editWebReg.do?SmartCode=8QFS
Brief Description: When developing international partnerships or exchanges, or recruiting students and researchers, universities and research institutions should be aware of the Export Administration Regulations (EAR).
Although information and software that is published, or that is released by instruction in a catalog course or associated teaching laboratory of an academic institution, is not subject to the EAR, other technology may require a license for release.

- Exactly how might these regulations impact your educational institution's activities?
- How do you create a plan in order to become compliant with these regulations?

A representative from the Bureau of Industry and Security, U.S. Dept. of Commerce will explain concepts such as deemed export licenses and technology licenses, and will identify areas where an export license may not be required. Please share this webinar information with your research divisions.
To participate in the webinar, please register at: https://emenuapps.ita.doc.gov/ePublic/event/editWebReg.do?SmartCode=8QFS

Event: Math Frontiers Monthly Webinar Series
Sponsor: National Academies
When: August 14, 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.***
As each webinar approaches, we will post more information about the speakers on the webinar series page at nas.edu/mathfrontiers.
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. Agusto 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: Enabling Quantum Leap: Convergent Accelerated Discovery Foundries for Quantum Materials Science, Engineering and Information (Q-AMASE-i)
Agency: National Science Foundation NSF 18-578
RFP Website: https://www.nsf.gov/pubs/2018/nsf18578/nsf18578.htm
Brief Description: The Division of Materials Research (DMR), the Division of Mathematical Sciences (DMS), the Division of Electrical, Communications and Cyber Systems (ECCS), and the Office of Advanced Cyberinfrastructure (OAC) seek to rapidly accelerate quantum materials design, synthesis, characterization, and translation of fundamental materials engineering and information research for quantum devices, systems, and networks. The new program of Enabling Quantum Leap: Convergent Accelerated Discovery Foundries for Quantum Materials Science, Engineering, and Information (Q-AMASE-i) aims to support these goals by establishing Foundries with mid-scale infrastructure for rapid prototyping and development of quantum materials and devices. The new materials, devices, tools and methods developed by Q-AMASE-i will be shared with the science and engineering communities through a Foundry-operated network. Technology transfer of Foundry activities will be enabled by close cooperation with industrial partners.
Six-year awards totaling $20,000,000 to $25,000,000 for the award period are anticipated. Q-AMASE-i Foundries will be awarded as cooperative agreements with an initial commitment of six years, with the possibility of one six-year renewal, subsequent to a rigorous and favorable review by NSF. The annual performance review includes NSF's evaluation of the annual report after the first year, an annual site visit after the second and fourth year of Foundry activities, and a reverse or program management site visit after the third and fifth year. Funding after the second year will depend on the quality of progress and performance documented during the site visits.
Awards: Standard Grant **Anticipated Funding Amount:** $25,000,000
Letter of Intent: September 17, 2018
Limit on Number of Proposals per Organization: 1
One (1) per organization as lead institution. Potential PIs are advised to contact their Sponsored Projects Office regarding processes used to select proposals for submission. In case of multiple submissions from the same institution, only the first submission will be considered, and all subsequent submissions will be returned without review.
Internal Competition and Review: Faculty planning to submit a proposal should submit a summary of the proposal with budget and NSF style Biographical sketch to Senior Vice Provost for Research Atam Dhawan at dhawan@njit.edu with cc to respective college dean by September 1, 2018.
Full Proposal Submission Deadline: November 05, 2018
Contacts: Tomasz Durakiewicz, telephone: (703) 292-4892, email: tdurakie@nsf.gov

- Victor Roytburd, telephone: (703) 292-8584, email: vroytbur@nsf.gov
- Dominique Dagenais, telephone: (703) 292-2980, email: ddagenai@nsf.gov
- Amy Walton, telephone: (703) 292-4538, email: awalton@nsf.gov

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Grant Program: Advanced Technologies and Instrumentation (ATI)
Agency: National Science Foundation NSF 18-576
RFP Website: https://www.nsf.gov/pubs/2018/nsf18576/nsf18576.htm
Brief Description: The Advanced Technologies and Instrumentation (ATI) program provides individual investigator and collaborative research grants for development of new technologies and instrumentation

for astronomy and astrophysics. The program supports overarching science objectives of the Division of Astronomical Sciences. Development of innovative, potentially transformative technologies are encouraged, even at high technical risk. Supported categories include but are not limited to: advanced technology development or concept feasibility studies and specialized instrumentation to enable new observations that are difficult or impossible to obtain with existing means. Proposals may include hardware and/or software development and/or analysis to enable new types of astronomical observations. The program encourages making products of research available to the public. It also encourages community coordination of technology and instrumentation development efforts via an annual Principal Investigators meeting.
Awards: Standard Grant **Anticipated Funding Amount:** $8,000,000
Letter of Intent: Not Required
Full Proposal Submission Deadline: October 01, 2018 - November 15, 2018
Contacts: Peter L. Kurczynski, (Lead), telephone: (703) 292-7248, email: pkurczyn@nsf.gov

- James E. Neff, telephone: (703) 292-2475, email: jneff@nsf.gov

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Grant Program: Graduate Research Fellowship Program (GRFP)
Agency: National Science Foundation NSF 18-573
RFP Website: https://www.nsf.gov/pubs/2018/nsf18573/nsf18573.htm
Brief Description: The purpose of the NSF Graduate Research Fellowship Program (GRFP) is to help ensure the vitality and diversity of the scientific and engineering workforce of the United States. The program recognizes and supports outstanding graduate students who are pursuing full-time research-based master's and doctoral degrees in science, technology, engineering, and mathematics (STEM) or in STEM education. The GRFP provides three years of support for the graduate education of individuals who have demonstrated their potential for significant research achievements in STEM or STEM education. NSF especially encourages women, members of underrepresented minority groups, persons with disabilities, veterans, and undergraduate seniors to apply.

Fellowship applications must be submitted by the prospective Fellow. Applicants must register with FastLane ([1]https://www.fastlane.nsf.gov/fastlane.jsp) prior to submitting an application. Confirmation of acceptance in a graduate degree program in science or engineering is required at the time of Fellowship acceptance, no later than May 1 of the year the award is accepted.
Awards: Standard Grant **Anticipated Funding Amount:** $60,000,000
Letter of Intent: Not Required
Full Proposal Submission Deadline:
October 22, 2018
Life Sciences, Geosciences
October 23, 2018
Computer and Information Science and Engineering, Engineering, Materials Research
October 25, 2018
Psychology, Social Sciences, STEM Education and Learning
October 26, 2018
Chemistry, Mathematical Sciences, Physics and Astronomy

The reference letters deadline are due on November 2, 2018 at 5:00 p.m. Eastern Time (ET).

Effective with the 2020 competition (Fall 2019 deadline), individuals pursuing a master's degree simultaneously with the bachelor's degree (joint bachelor's-master's degree) will be limited to one application to GRFP; they will not be eligible to apply as a doctoral degree student. Individuals in this

category applying in the 2019 competition (Fall 2018 deadline) will have one more opportunity to apply as first-year doctoral students in the 2020 competition.
Contacts: Applications contact: GRF Operations Center, telephone: (866) 673-4737, email: info@nsfgrfp.org

- Susan Brennan, telephone: (866) 673-4737, email: info@nsfgrfp.org
- Jong-on Hahm, telephone: (866) 673-4737, email: info@nsfgrfp.org

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Grant Program: Secure and Trustworthy Cyberspace (SaTC)
Agency: National Science Foundation NSF 18-572
RFP Website: https://www.nsf.gov/pubs/2018/nsf18572/nsf18572.htm
Brief Description: In today's increasingly networked, distributed, and asynchronous world, cybersecurity involves hardware, software, networks, data, people, and integration with the physical world. Society's overwhelming reliance on this complex cyberspace, however, has exposed its fragility and vulnerabilities that defy existing cyber-defense measures: corporations, agencies, national infrastructure and individuals continue to suffer cyber-attacks. Achieving a truly secure cyberspace requires addressing both challenging scientific and engineering problems involving many components of a system, and vulnerabilities that stem from human behaviors and choices. Examining the fundamentals of security and privacy as a multidisciplinary subject can lead to fundamentally new ways to design, build and operate cyber systems, protect existing infrastructure, and motivate and educate individuals about cybersecurity.

The goals of the SaTC program are aligned with the Federal Cybersecurity Research and Development Strategic Plan (RDSP) and the National Privacy Research Strategy (NPRS) to protect and preserve the growing social and economic benefits of cyber systems while ensuring security and privacy. The RDSP identified six areas critical to successful cybersecurity research and development: (1) scientific foundations; (2) risk management; (3) human aspects; (4) transitioning successful research into practice; (5) workforce development; and (6) enhancing the research infrastructure. The NPRS, which complements the RDSP, identifies a framework for privacy research, anchored in characterizing privacy expectations, understanding privacy violations, engineering privacy-protecting systems, and recovering from privacy violations. In alignment with the objectives in both strategic plans, the SaTC program takes an interdisciplinary, comprehensive and holistic approach to cybersecurity research, development, and education, and encourages the transition of promising research ideas into practice.
The SaTC program welcomes proposals that address cybersecurity and privacy, and draw on expertise in one or more of these areas: computing, communication and information sciences; engineering; economics; education; mathematics; statistics; and social and behavioral sciences. **Proposals that advance the field of cybersecurity and privacy within a single discipline or interdisciplinary efforts that span multiple disciplines are both encouraged.**
Awards: Standard Grant **Anticipated Funding Amount:** $68,000,000
Letter of Intent: Not Required
Full Proposal Submission Deadline: Proposal accepted anytime
Contacts: Nina Amla, Program Director, CISE/CCF, telephone: (703) 292-7991 email: namla@nsf.gov

- Dan Cosley, Program Director, CISE/IIS, telephone: (703) 292-8491, email: dcosley@nsf.gov
- Sol Greenspan, Program Director, CISE/CCF, telephone: (703) 292-8910, email: sgreensp@nsf.gov

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Grant Program: Advanced Technological Education (ATE)
Agency: National Science Foundation NSF 18-571
RFP Website: https://www.nsf.gov/pubs/2018/nsf18571/nsf18571.htm

Brief Description: With an emphasis on two-year Institutions of Higher Education (IHEs), the Advanced Technological Education (ATE) program focuses on the education of technicians for the high-technology fields that drive our nation's economy. The program involves partnerships between academic institutions (grades 7-12, IHEs) and industry to promote improvement in the education of science and engineering technicians at the undergraduate and secondary institution school levels. The ATE program supports curriculum development; professional development of college faculty and secondary school teachers; career pathways; and other activities. The program invites research proposals that advance the knowledge base related to technician education. It is expected that projects will be faculty driven and that courses and programs credit bearing, although materials developed may also be used for incumbent worker education.

The ATE program encourages partnerships with other entities that may impact technician education. For example, with:

- the National Institute of Standards and Technology (NIST) Manufacturing Extension Partnerships (MEPs) (https://www.nist.gov/mep) as applicable to support technician education programs and the industries they serve;
- Manufacturing USA Institutes (https://manufacturing.gov/) and Investing in Manufacturing Communities of Practice (IMCPs) (https://www.eda.gov/imcp/) addressing workforce development issues (also see DCL NSF 16-007); and
- NSF Industry University Cooperative Research Centers Program (I/UCRC) awardees (https://www.nsf.gov/eng/iip/iucrc/).

The ATE program encourages proposals from Minority Serving Institutions and other institutions that support the recruitment, retention, and completion (certificate, degree, program) of students underrepresented in STEM in technician education programs that award associate degrees. NSF is particularly interested in proposals from all types of Minority Serving Institutions (including Hispanic Serving Institutions, Historically Black Colleges and Universities, Tribal Colleges and Universities, and Alaska Native and Native Hawaiian Serving Institutions) where the proportion of underrepresented students interested in advanced technology careers is growing.

Awards: Standard Grant **Anticipated Funding Amount:** $60,000,000

Letter of Intent: Not Required

Full Proposal Submission Deadline: October 15, 2018

Contacts: V. Celeste Carter, Lead Program Director, DUE, W11126, telephone: (703) 292-4651, email: vccarter@nsf.gov

- Heather Watson, Co-Lead Program Director, W11247, telephone: (703) 292-7091, email: hwatson@nsf.go

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Grant Program: Information and Intelligent Systems (IIS): Core Programs

Agency: National Science Foundation NSF 18-570

RFP Website: https://www.nsf.gov/pubs/2018/nsf18570/nsf18570.htm

Brief Description: CISE's Division of Information and Intelligent Systems (IIS) supports research and education projects that develop new knowledge in three **core programs:**

- The Cyber-Human Systems (CHS) program;
- The Information Integration and Informatics (III) program; and
- The Robust Intelligence (RI) program.

Proposals in the area of computer graphics and visualization may be submitted to any of the three core programs described above.

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

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

- Large Projects - $1,200,001 to $3,000,000 total budget with durations up to five years.

Awards: Standard Grant **Anticipated Funding Amount:** $100,000,000
Letter of Intent: Not Required
Full Proposal Submission Deadline:
September 24, 2018 - October 02, 2018
LARGE Projects
September 24, 2018 - October 02, 2018
MEDIUM Projects
November 01, 2018 - November 15, 2018
SMALL Projects
Contacts: William S. Bainbridge, Point of Contact, Cyber-Human Systems (CHS), telephone: (703) 292-8930, email: wbainbri@nsf.gov

- James Donlon, Point of Contact, Robust Intelligence (RI), telephone: (703) 292-8930, email: jdonlon@nsf.gov
- Ephraim P. Glinert, Point of Contact, Cyber-Human Systems (CHS), telephone: (703) 292-8930, email: eglinert@nsf.go

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Grant Program: Computer and Network Systems (CNS): Core Programs
Agency: National Science Foundation NSF 18-569
RFP Website: https://www.nsf.gov/pubs/2018/nsf18569/nsf18569.htm
Brief Description: CISE's Division of Computer and Network Systems (CNS) supports research and education projects that take a system-oriented approach to the development of novel computing and networking technologies, or to the enhancement of existing systems in any of several dimensions, or that explore new ways to make use of existing technologies.
Proposers are invited to submit proposals in three project classes, which are defined as follows:

- Small Projects - up to $500,000 total budget with durations up to three years;
- Medium Projects - $500,001 to $1,200,000 total budget with durations up to four years; and
- Large Projects - $1,200,001 to $3,000,000 total budget with durations up to five years.

Awards: Standard Grant **Anticipated Funding Amount:** $60,000,000
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: John T. "Jack" Brassil, telephone: (703) 292-8950, email: jbrassil@nsf.gov

- Darleen L. Fisher, telephone: (703) 292-8950, email: dlfisher@nsf.gov
- Monisha Ghosh, telephone: (703) 292-8746, email: mghosh@nsf.gov

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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

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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

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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.go

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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
Contacts: Shubhra Gangopadhyay sgangopa@nsf.gov (703) 292-8339
Jenshan Lin jenlin@nsf.gov (703) 292-8339
Akbar Sayeed asayeed@nsf.gov (703) 292-4753

National Institutes of Health

Grant Program: BRAIN Initiative: Development of Novel Tools to Probe Cell-Specific and Circuit-Specific Processes in Human and Non-Human Primate Brain (UG3/UH3 Clinical Trial Optional)
Agency: National Institutes of Health RFA-MH-19-135
RFP Website: https://grants.nih.gov/grants/guide/rfa-files/RFA-MH-19-135.html
Brief Description: This FOA is designed to support development and validation of novel tools to facilitate the detailed analysis and/or manipulation of cells and circuits and provide insights into the neural circuitry and structure underlying complex behaviors in humans and non-human primates and other mammalian brains (e.g., sheep, pig). The human brain consists of an estimated one hundred billion neurons and similar number of supporting glial cells that are uniquely organized to confer the extraordinary computational activities of the brain. Considerable progress has been made in defining the cytology and signal transduction processes in the CNS, but circuit-level function and the neural mechanisms of cognition and behavior remain poorly understood. Cell-type and circuit-specific manipulation strategies are key technical factors in addressing these important areas and represent attractive strategies to treat brain disorders. This initiative is focused on developing tools (or vastly improving existing tools) that will ultimately enable access to individual cells and defined groups of cells within neuronal circuits of the human brain. In order to achieve these goals, it is acknowledged that the use of large brains such as non-human primates, sheep and pig will be instrumental in this process. Development of tools that are applicable to human or non-human primate brains should focus on overcoming barriers to use of such tools (i.e., opto/chemo and magnetogenetic acutators). The tools sought through this FOA can include novel genetic or non-genetic methods for targeted delivery of genes, proteins, and chemicals to specific cells or tightly defined cell types and circuits.

Development of novel tools that will delineate anatomical connections between cells and expand our knowledge of circuit architecture and function is an area well poised for additional investment. Several efforts are currently underway to study large-scale, long-range connections, such as the NIH Human Connectome Project, as well as large scale rodent connectional studies. Recent development of innovative technologies (e.g., CLARITY, expansion microscopy, MERFISH, and several other imaging breakthroughs) allows an unprecedented three-dimensional view into the post-mortem brain. While still at an early stage, these exciting technologies hold promise for mapping short- and long-range connections throughout the brain. Coupled with improved activity monitoring technologies in awake, behaving animals, these new tools promise an understanding of circuitry in action. Further development of these technologies is crucial to push the envelope beyond our current capabilities. To this end, applicants from the biological sciences are encouraged to establish collaborations with engineers, chemists, material scientists, nanobiologists, and colleagues in other disciplines to develop groundbreaking approaches to study brain activity.
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: October 9, 2018; September 26, 2019 and September 28, 2020 , by 5:00 PM local time of applicant organization. All types of non-AIDS applications allowed for this funding opportunity announcement are due on these dates.
Applicants are encouraged to apply early to allow adequate time to make any corrections to errors found in the application during the submission process by the due date.

Grant Program: Regenerative Medicine Innovation Project (RMIP) Investigator-Initiated Studies (U01 – Clinical Trial Not Allowed)
Agency: National Institutes of Health RFA-HL-18-030
RFP Website: https://grants.nih.gov/grants/guide/rfa-files/RFA-HL-18-030.html

RFA-HL-18-031, UG3/UH3 Exploratory/Developmental Phased Award Cooperative Agreement
RFA-HL-18-033, UT2 Small Business Technology Transfer (STTR) Cooperative Agreement – Fast-Track
RFA-HL-18-035, U44 Small Business Innovation Research (SBIR) Cooperative Agreement - Fast-Track
Brief Description: Applicants are strongly encouraged to submit research applications that demonstrate potential to catalyze sustained and accelerated development of the RM field through contributing to the knowledge critical for clinical testing, stem cell characterization and authentication, cGMP compliant stem cell production, in vivo stem cell tracking and monitoring, data standards development, and data sharing. It is expected that submitted applications will address the following:

- Preclinical studies that contribute to conducting clinical trials that address specific clinical indications;
- Testing human adult stem cells in well-developed animal models;
- Monitoring stem cell function and integration *in vivo*;
- Methods for in-depth stem cell characterization and deep fingerprinting, and utilization of standards;
- Interactions with FDA regarding a future IND or IDE application (such as having had a pre-IND meeting and other communications);
- Further development of standards and cGMP for adult stem cell-based RM products;
- Leveraging extant cell production facilities for product preparation and qualification; and
- Contributing to a better and shared understanding of current technical and operational barriers as well as regulatory science issues and how to overcome them.

Awards: The total budget (Federal award and non-Federal matching contributions) should reflect the actual needs of the proposed project. While annual project budgets should reflect the actual costs anticipated in each year, the Federal share of this award must not exceed $250,000 in direct costs per year. The recipient is required to provide at least a 1:1 match of the Federal funds requested (for Direct and Indirect/F&A costs) in the form of non-Federal contributions.
Letter of Intent: September 19, 2018
Deadline: October 19, 2018, by 5:00 PM local time of applicant organization. All types of non-AIDS applications allowed for this funding opportunity announcement are due on this date.
Applicants are encouraged to apply early to allow adequate time to make any corrections to errors found in the application during the submission process by the due date.

Grant Program: Short-term Mentored Career Enhancement Awards in Mobile and Wireless Health Technology and Data Analytics: Cross-Training at the intersection of Behavioral and Social Sciences and STEM Disciplines (K18 Independent Clinical Trial Not Allowed)
Agency: National Institutes of Health PAR-18-881
RFP Website: https://grants.nih.gov/grants/guide/pa-files/PAR-18-881.html
Brief Description: The objective of the Career Enhancement Award for Experienced Investigators (K18) is to provide support for experienced scientists who either wish to broaden their scientific capabilities or to make changes in their research careers by acquiring new research skills or knowledge. The purpose of this FOA is to provide such investigators with support for an intensive period of mentored research experience to acquire new research capabilities in mobile and wireless health technology and data analytics that align with research areas supported by the sponsoring NIH Institute(s)/Center(s). Such experiences will afford candidate investigators protected time to: 1) enrich and expand their expertise and research programs through retooling in new techniques, emerging technologies, and/or scientific areas; and/or 2) redirect their research programs in new trajectories; and/or 3) catalyze research collaborations in new research directions.

Candidates will not be required to have active research grant support at the time of application. However, they will be expected to identify one or more research mentors with the relevant expertise who are established, well-qualified, and willing to sponsor the short-term research career development experience. It is expected that this initiative will lead to new and augmented research collaborations that will be competitive for future NIH funding.

Research Scope

The goal of the program is to support the development of research capability in mobile and wireless health technology (e.g., wearable devices, mobile applications, electronic health records, data analytics). Special emphasis will be given to independent behavioral and social sciences investigators who seek to train in a STEM discipline (e.g., big data analysis, computational modeling, engineering, computer science, and mathematics) or to STEM scientists who wish to extend their career development in a behavioral and social science discipline.

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

Letter of Intent: Not required

Deadline: July 12, 2019; July 12, 2020;, by 5:00 PM local time of applicant organization. All types of non-AIDS applications allowed for this funding opportunity announcement are due on these dates.

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

Grant Program: NCI Outstanding Investigator Award (R35 Clinical Trial Not Allowed)
Agency: National Institutes of Health PAR-18-880

RFP Website: https://grants.nih.gov/grants/guide/pa-files/PAR-18-880.html

Brief Description: The purpose of the National Cancer Institute (NCI) Outstanding Investigator Award is to provide long-term support and increased flexibility for investigators with outstanding records of research productivity to continue or to embark upon a research program of unusual potential in cancer. Candidates for the OIA must be nominated by their applicant organization. Special features of the OIA include 7-year project periods; the expectation that the OIA PD/PI commit at least 6 person months effort to the OIA; the expectation of clear and substantial Institutional commitment to the PD/PI, for example, providing 20% of salary support; and that PD/PIs will be expected to renegotiate their time and effort on all other grant support, including NIH grants, in order to accommodate the OIA level of effort. It is expected that the OIA will replace current NCI funding on individual research grants. The NCI will only consider funding two additional research project grants to the Outstanding Investigator while the OIA is active. This limit includes single PD/PI, multiple PD/PI and multi-project grants where the OIA Investigator is the PD/PI. The NCI will not approve a change of PD/PI on an existing NCI grant to avoid the OIA requirements.

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

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

Deadline: November 2, 2018, by 5:00 PM local time of applicant organization. All types of non-AIDS applications allowed for this funding opportunity announcement are due on this date.

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

Grant Program: Development of Cell and Tissue Platforms to Detect Adverse Biological Consequences of Somatic Cell Genome Editing (U01 Clinical Trial Not Allowed)
Agency: National Institutes of Health RFA-RM-18-022

RFA-RM-18-023, UG3/UH3 Exploratory/Developmental Phased Award Cooperative Agreement

RFA-RM-18-024, U01 Research Project – Cooperative Agreements
RFA-RM-18-025, UH2/UH3 Phase Innovation Awards Cooperative Agreement
RFP Website: https://grants.nih.gov/grants/guide/rfa-files/RFA-RM-18-022.html
Brief Description: This program will support the development and validation of human cell- and tissue-based platforms for predicting adverse consequences of genome editing. For the purposes of this FOA, genome editing is defined broadly, extending beyond nuclease-dependent activities for manipulating DNA and thus may also include epigenetic modifiers, transcriptional repression and activation approaches, and RNA editors. Successful projects are expected to develop innovative platforms that faithfully replicate critical aspects of normal human physiology and provide measurable outputs to evaluate potential adverse effects of genome editing, including genotoxicity (particularly translocations), immunogenicity (to the editor, edited protein, or delivery vehicle), and deleterious changes to the biological function of the edited cell/tissue. Successful assays and associated protocols will be shared with the broader community via the SCGE Toolkit that will be the primary output of this collaborative Common Fund-sponsored program.

In developing platforms that accurately represent normal human physiology, primary human cells or tissues are optimal, but these may not be feasible in some cases. Therefore, investigators may propose to use differentiated human stem cells or induced pluripotent stem cells (iPSCs) when appropriate.
This FOA will support platforms that include all or a combination of the following features depending on the types of assays and readouts being proposed: 1) multicellular architecture that represent characteristics of the cell type or tissue; 2) functional representation of normal human biology; and 3) reproducible and viable operation under physiologically relevant conditions in vitro. Examples of possible readouts include, but are not limited to: cell growth, cell death, chromosomal rearrangement, epigenetic changes, cytokine production, electrical activity, high content images, and "omics" data that would inform on the biological function of the edited cells.

Platforms being developed under this initiative are expected to be compatible with DNA sequencing, RNA-Seq, or other "omics" based approaches to examine off-target genome editing and conduct pathway analysis. Of special interest are phenotypic assays that would precede immunogenicity and tumorigenicity in vivo, such as changes in gene expression or cellular morphology. Bioinformatics and computational techniques, such as in silico modeling, currently used for predicting the efficiency and physiological consequences of genome editing, should be implemented in combination with the cell/tissue platform studies to evaluate and correlate the precise performance and predictive capacity of these tools in different cell and tissue types. High-throughput approaches to rapidly assess adverse effects of genome editing are also encouraged.
Awards: Application budgets should not exceed $415,000 direct costs per year in FY 2019 and need to reflect the actual needs of the proposed project.
Letter of Intent: September 18, 2018
Deadline: October 18, 2018, by 5:00 PM local time of applicant organization. All types of non-AIDS applications allowed for this funding opportunity announcement are due on this date.
Applicants are encouraged to apply early to allow adequate time to make any corrections to errors found in the application during the submission process by the due date.

Grant Program: Mentored Career Development Award to Promote Faculty Diversity in Biomedical Research (K01 Independent Clinical Trial Not Allowed)
Agency: National Institutes of Health RFA-HL-19-026
RFP Website: https://grants.nih.gov/grants/guide/rfa-files/RFA-HL-19-026.html
Brief Description: The NIH recognizes a unique and compelling need to promote diversity in the biomedical, behavioral, clinical and social sciences workforce. The NIH expects efforts to diversify the workforce to lead to the recruitment of the most talented researchers from all groups; to improve the

quality of the educational and training environment; to balance and broaden the perspective in setting research priorities; to improve the ability to recruit subjects from minority and other health disparity populations into clinical research protocols; and to improve the Nation's capacity to address and eliminate health disparities. For more information, see Notice of NIH's Interest in Diversity, NOT-OD-18-129.
This program provides research development opportunities for non-tenured science faculty from diverse backgrounds, including those from underrepresented underrepresented groups.
Scientists and physicians with some research experience who need guided course work and supervised laboratory experiences, as well as faculty who need an intensive research experience under the guidance of an established scientist, are eligible to apply.
Awards: Award budgets are composed of salary and other program-related expenses, as described below. Application budgets must not exceed $150,000 per year in direct costs. However, applications should refect the actual needs of the proposed project.
Letter of Intent: Not required
Deadline: October 10, 2018, February 11, 2019, October 10, 2019, February 11, 2020, October 9, 2020, February 11, 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

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Grant Program: BRAIN Initiative: Integration and Analysis of BRAIN Initiative Data (R01 Clinical Trial Not Allowed)
Agency: National Institutes of Health RFA-MH-19-147
RFP Website: https://grants.nih.gov/grants/guide/rfa-files/RFA-MH-19-147.html
Brief Description: This FOA supports the development of software to visualize and analyze the data as part of programs of building the informatics infrastructure for the BRAIN Initiative. Other informatics programs include developing data standards that are needed to describe the new experiments that are being created by or used in the BRAIN Initiative (RFA-MH-19-146), and creating the data infrastructures that will house the data from multiple experimental groups (RFA-MH-19-145). Each of the programs is aimed at building an infrastructure that is used by a particular sub-domain of experimentalists rather than building a single all-encompassing informatics infrastructure now. Building the infrastructure one experimental area at a time will ensure that the infrastructure is immediately useful to components of the research community. As our understanding of the brain improves, it may be possible to create linkages between these various sub-domain specific informatics programs. Investigators of the informatics programs should keep that goal in mind and build for the future even though the current efforts are more limited in scope.

The data visualization and analysis tools supported under this FOA will make use of the standards and will be built so that they can be integrated into the data repositories, both of which are created in awards under the other FOAs of the informatics programs. Similarly, the data repositories are expected to use the standards. Awardees under all the FOAs are expected to work together. The awardees should budget for hackathons and other collaborative efforts that will be necessary to integrate the products produced by all awardees. Collaborations with neuro-informatics efforts outside of the BRAIN Initiative are both welcome and are encouraged.
Awards: Application budgets are not limited but need to reflect the actual needs of the proposed project.
Letter of Intent: August 27, 2018
Deadline: September 27, 2018; March 7, 2019; September 6, 2019; March 6, 2020; September 9, 2020; March 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: 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 comprehnsive hearing-related services involved in diagnosis, treatment, auditory rehabilitation, and counseling of individulas 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.
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.

Department of Defense/US Army/DARPA/ONR

Grant Program: BROAD AGENCY ANNOUNCEMENT (BAA) for Extramural Biomedical Research and Development
Agency: Department of Defense Dept. of the Army – USAMRAA W81XWH-18-S-SOC1
Website: http://cdmrp.army.mil/; http://www.dcbids.net/bid-opportunities/2018/07/28/8804867-DoD-Vision-Investigator-Initiated-Research-Award.html

Brief Description: This BAA is intended to solicit extramural research and development ideas using the authority provided by United States Code, Title 10, Section 2358. This BAA is issued under the provisions of the Competition in Contracting Act of 1984 (Public Law 98-369), as implemented in Federal Acquisition Regulation 6.102(d) (2) and 35.016 and in DoD Grant and Agreement Regulations (DoDGARs) 22.315. In accordance with FAR 6.102, projects funded under this BAA must be for basic and applied research to support scientific study and experimentation directed toward advancing the state-of-the-art or increasing knowledge or understanding rather than focusing on development of a specific system or hardware solution. Research and development funding through this BAA are intended and expected to benefit and inform both military and civilian medical practice and knowledge. This BAA provides a general description of USSOCOM's research and development programs, including research areas of interest, evaluation and selection criteria, pre-proposal/preapplication and full proposal/application preparation instructions, and general administrative information. Submission of a pre-proposal/pre-application is required. After review, if the USSOCOM is interested in receiving a full proposal/application, the Applicant or Offeror will be invited to submit a full proposal or full application. Specific submission information and additional administrative requirements can be found in the document titled "General Submission Instructions" available in Grants.gov along with this BAA.
Pre-proposal: Required. All pre-applications for both extramural and intramural organizations must be submitted through eBRAP (https://eBRAP.org/).
Awards: Total Funding Available: $4,500,000
Proposal Deadline: 31 July, 2023, 11:59 p.m. Eastern Time
Contact Information: Questions related to BAA content or submission requirements as well as questions related to the submission of the pre-proposal/pre-application through eBRAP should be directed to the EBRAP Help Desk, which is available Monday through Friday from 8:00 a.m. to 5:00 p.m. Eastern Time. Response times may vary depending upon the volume of inquiries. Phone: 301-682-5507 Email: help@eBRAP.org

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Grant Program: DoD Vision, Investigator- Initiated Research Award
Agency: Department of Defense CDMRP W81XWH-18-VRP-IIRA
Website: http://cdmrp.army.mil/; http://www.dcbids.net/bid-opportunities/2018/07/28/8804867-DoD-Vision-Investigator-Initiated-Research-Award.html
Brief Description: The FY18 VRP IIRA is intended to support studies that will yield highly impactful discoveries or major advancements in the research and/or patient care of eye injury and/or visual dysfunction as related to military-relevant trauma. Research projects may focus on any phase of research (e.g., basic, translational, applied, clinical, observational), excluding clinical trials. The research idea or solution should be innovative, novel, or a significant advancement over existing ideas or solutions, as applicable.

The application should clearly state the type of trauma that is being addressed and describe how the project's potential immediate and long-range outcome(s)/product(s) will advance the understanding, prevention, diagnosis, mitigation, and/or treatment of eye injury or visual dysfunction associated with the trauma.
Awards: Total Funding Available: $4,500,000
Proposal Deadline:
Pre-Application Submission Deadline: 5:00 p.m. Eastern time (ET), September 4, 2018 • Invitation to Submit an Application: October 2018 • Application Submission Deadline: 11:59 p.m. ET, December 4, 2018)
Contact Information: CDPRP Help Desk; 301-682-5507 Email: help@eBRAP.org

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Grant Program: Atomic-Photonic Integration
Agency: Department of Defense DARPA HR001118S0053
Website:
https://www.fbo.gov/index?s=opportunity&mode=form&id=7b63fd3fcd430c9213df7b4e37636445&tab=core&_cview=1
Brief Description: Position, Navigation, and Timing (PNT) is a critical resource for all Department of Defense (DoD) missions, affecting areas such as communications, navigation, reconnaissance, and electronic warfare (EW). Typically, PNT needs are met using the Global Positioning System (GPS). However, GPS signals are vulnerable to a variety of disruption methodologies, and a backup to GPS is essential. Although in the absence of GPS, tactical-grade clocks and tactical-/navigation-grade Inertial Measurement Units (IMUs) can currently provide GPS-like accuracy for the short term, longer-term, GPS-independent strategies are required.

The DARPA Microsystems Technology Office is soliciting research proposals for the development of a new class of atom-based systems utilizing integrated photonics and trapped atoms to enable high-performance, robust, portable clocks and gyroscopes.
Awards: Multiple awards are anticipated. The amount of resources made available under this BAA will depend on the quality of the proposals received and the availability of funds.
Proposal Deadline:
Proposers Day: August 1, 2018 o Abstract Due Date: August 16, 2018 o FAQ Submission Deadline: September 20, 2018 o Proposal Due Date: September 27, 2018
Contact Information: Dr. John Burke, Program Manager BAA Coordinator:
HR001118S0053@darpa.mil

Grant Program: Resilient Anonymous Communication for Everyone (RACE)
Agency: Department of Defense DARPA HR001118S0052
Website:
https://www.fbo.gov/index?s=opportunity&mode=form&id=1c268989fc5d242c2d94c4d45abd505d&tab=core&_cview=1
Brief Description: DARPA is soliciting innovative research proposals in the area of cryptographic and communication obfuscation techniques in order to build an anonymous, attack-resilient mobile communication system that can reside completely within a network environment.

The Resilient Anonymous Communication for Everyone (RACE) program will research technologies for a distributed messaging system that a) can exist completely within a given network, b) provides confidentiality, integrity, and availability of messaging, and c) preserves privacy to any participant in the system. Compromised system data and associated networked communications should not be helpful for compromising any additional parts of the system. RACE advances will be based on rigorous security arguments, such as those found in the academic cryptography community or statistical arguments based on realistic simulations. RACE will create advances in communication protocol encapsulation methods as well as efficient, oblivious, distributed system tasking, possibly via secure multiparty computation, to build a system that cannot be compromised even with limited participant compromises and largescale, real-time deep packet inspection. Approaches to preserving privacy are of interest, such as ubiquitous encryption, even during computation, and obfuscating communication protocols.
Awards: Total Funding Available: $44,000,000
Proposal Deadline:
Proposers Day: July 24, 2018
o Abstract Due Date: August 14, 2018, 12:00 noon (ET)
o Proposal Due Date: September 18, 2018, 12:00 noon (ET)

o BAA Closing Date: September 18, 2018, 12:00 noon (ET)
Contact Information: BAA Coordinator RACE@darpa.mil

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.
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: 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 atwww.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: Support Grants for Participation in ARPA-E Grid Optimization (GO) Competition Challenge 1

Agency: Department of Energy DE-FOA-0001952

Website: https://arpa-e-foa.energy.gov/

Brief Description: The purpose of this FOA is to fund research and development of solution techniques that will be used by awardees to compete in Challenge 1 of the Grid Optimization (GO) Competition. The GO Competition is a series of prize challenges to accelerate the development and comprehensive evaluation of grid software solutions.[1] The first GO Competition, Challenge 1, is an algorithm competition focused on the security-constrained optimal power flow (SCOPF) problem for the electric power sector. Awardees under this FOA will be required to participate in Challenge 1. As described in detail in Appendix A1 to this FOA and on the GO Competition website (https://gocompetition.energy.gov/), Challenge 1 is anticipated to launch in the Fall of 2018. Participation in the GO Competition Challenge 1 will be open to anyone that satisfies the applicable requirements in Rules Document specified on the GO Competition website (https://gocompetition.energy.gov/competition-rules), not just those awarded under ARPA-E DE-FOA-0001952.

The purpose of this FOA is to provide grants: (i) to further incentivize and identify innovative research for solution methods applicable to Challenge 1, and (ii) to enable broader diversity in team domain expertise, i.e., to encourage teams to participate that do not traditionally focus on the particular problems that are targeted but otherwise have innovative approaches for this class of mathematical

programs. While Challenge 1 focuses on a power systems problem, the Challenge and this FOA target a much broader audience (e.g., those specialized in operations research, applied mathematics, optimization methods and algorithms, controls etc.).
Awards; Up to $250,000; Available Funding: $5,000,000
Submission Deadline: Full Application Submission Deadline: 9/7/2018 9:30 AM ET
Contact Information: ARPA-E CO arpa-e-co@hq.doe.gov

Grant Program: Machine Learning for Geothermal Energy
Agency: Department of Energy DE-FOA-0001956
Website: https://eere-exchange.energy.gov/
Brief Description: The U.S. Department of Energy's Geothermal Technology Office (GTO) Machine Learning for Geothermal Energy funding opportunity announcement (FOA) supports projects that will develop new analytical tools for finding and developing geothermal resources and establish the practice of machine learning in geothermal operations. The rapidly advancing field of Machine Learning (ML) offers substantial opportunities for technology advancement and cost reduction throughout the geothermal project lifecycle, from resource exploration to power plant operations. Under this funding opportunity, GTO is interested in two topic areas:
Topic 1: Machine Learning for Geothermal Exploration - GTO seeks projects that advance geothermal exploration through the application of machine learning techniques to geological, geophysical, geochemical, borehole, and other relevant datasets. Of particular interest to GTO are projects that will identify data acquisition targets and build community datasets for future work.
Topic 2: Advanced Analytics for Efficiency and Automation in Geothermal Operations - GTO seeks projects that apply advanced analytics to power plant and other operator datasets, with the goal of improving operations and resource management.
For questions and answers pertaining to this FOA, please reference the DE-FOA-0001956 Machine Learning FAQ Log in FOA Documents.

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

Applicants that experience issues with submissions PRIOR to the FOA Deadline: In the event that an Applicant experiences technical difficulties with a submission, the Applicant should contact the eXCHANGE helpdesk for assistance (exchangehelp@hq.doe.gov). The eXCHANGE helpdesk and/or the EERE eXCHANGE System Administrators (eXCHANGE@ee.doe.gov) will assist the Applicant in resolving all issues.
Awards; Up to $700,000; Available Funding: $3,600,000
Submission Deadline: Concept Paper Submission Deadline: 8/23/2018 5:00 PM ET
- Full Application Submission Deadline: 11/1/2018 5:00 PM ET

Contact Information: EERE-ExchangeSupport@hq.doe.gov
For Exchange related support and issues.
- machinelearninggeo@ee.doe.gov

For questions regarding the FOA

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

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NASA

Grant Program: ROSES 2018: Cassini Data Analysis Program: PDS Cassini Data Release 54
Agency: NASA NNH18ZDA001N-CDAPR54
Website: https://nspires.nasaprs.com/external/solicitations/summary.do?solId=%7BE10A322F-0907-1754-8893-15F97479CD52%7D&path=open&method=init
Brief Description: This National Aeronautics and Space Administration (NASA) Research Announcement (NRA), Research Opportunities in Space and Earth Sciences (ROSES) – 2018, solicits basic and applied research in support of NASA's Science Mission Directorate (SMD). ROSES is an omnibus NRA, with many individual program elements, each with its own due dates and topics. All together these cover the wide range of basic and applied supporting research and technology in space and Earth sciences supported by SMD. Awards will be made as grants, cooperative agreements, contracts, and

inter- or intraagency transfers, depending on the nature of the work proposed, the proposing organization, and/or program requirements. The typical period of performance for an award is three years, but some programs may allow up to five years and others specify shorter periods. Organizations of every type, domestic and foreign, Government and private, for profit and not-for-profit, may submit proposals without restriction on teaming arrangements. Note that it is NASA policy that all research involving non-U.S. organizations will be conducted on the basis of no exchange of funds.
Awards: Various
Proposal Deadline: September 18, 2018
Contact: Max Bernstein Planetary Science Division Science Mission Directorate NASA Headquarters Washington, DC 20546-0001 Email: max.bernstein@nasa.gov

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Grant Program: ROSES 2018: DSCOVR Science Team
Agency: NASA NNH18ZDA001N-DSCOVR
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
NASA Headquarters; Telephone: 202-358-2567 ; Email: Richard.S.Eckman@nasa.gov

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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.

CISCO

Grant Program: Research and Open Innovation
Agency: Cisco Research Center (CRC)
Website: https://research.cisco.com/research
Brief Description: Cisco Research Center (CRC) connects researchers and developers from Cisco, academia, governments, customers, and industry partners with the goal of facilitating collaboration and exploration of new and promising technologies. First and foremost, we are interested in exploring issues, topics, and problems that are relevant to our core business of improving the Internet. We're also deeply interested in adjacent technologies that leverage the power of the network to change the world around us. Interests include:

- Machine Learning and Artificial Intelligence (ML/AI) for Networking
- Secure and Private Internet of Things
- 5G Vision: Enhanced Wireless with Combined Access plus Access Agnostic Core
- RFP-16-01 Software Defined Networks / P4
- Social Science: Career/Life Paths of Women in Engineering, Computer Science, and Data Science/Applied Mathematics
- RFP-16-99 Security Assurance for Agile, Continuous Deployment and DevOps
- Robust and Transparent Cryptography
- Semiconductor Reliability
- Integrated Circuit / Hardware Integrity; Design & Fabrication
- Threat Mitigation
- Distributed Storage Systems: Coding, Caching, Data Management, and Hyperscale Data Centers
- Threat Defense and Distributed Computation and Trusted Computing RFP-15-76 Component, Board and System Test and DFT
- Memristor Apply
- Photonics on Silicon, optical on Silicon Apply

· Adaptive Streaming: Coding, Packaging, Transport, Consumption and Instrumentation
· Fog Computing, Ecosystem, Architecture and Applications
· Named-Data Caching, Routing and Security
· 3D IC Integration and Enabling Technologies
· Optical Networking
· Wireless and Mobile
· Video

Award: 1) *Production/Presentation Grants*: Grants of up to $20,000 will be awarded to assist individuals with production-related expenses that are necessary to take a project from conceptualization to realization and public presentation. Projects may include but are not limited to publications, exhibitions, installations, films, and new media projects.
2) *Research/Development Grants*: Grants of up to $10,000 will be awarded to assist individuals with seed money for research-related expenses such as travel, documentation, materials, supplies, and other development costs.
Proposal Deadline: September 15, 2018
University Nomination Process and Contact: If interested, please send an email to Eric Blitz (eric.blitz@njit.edu) and Atam Dhawan (dhawan@njit.edu).

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)
Simons Foundation Fellowships in Math and Theoretical Physics
Agency: Simons Foundation

Website: https://www.simonsfoundation.org/mathematics-physical-sciences/simons-investigators/simons-investigator-program-nominations/
https://www.simonsfoundation.org/grant/simons-fellows-in-theoretical-physics/?tab=rfa -- Simons Fellows in Theoretical Physics.
https://www.simonsfoundation.org/grant/simons-fellows-in-mathematics/?tab=rfa --- Simons Fellows in Mathematics
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.

Grant Program: Simons Foundation Fellowships in Math and Theoretical Physics
Agency: Simons Foundation
Website:
https://www.simonsfoundation.org/grant/simons-fellows-in-theoretical-physics/?tab=rfa -- Simons Fellows in Theoretical Physics.

https://www.simonsfoundation.org/grant/simons-fellows-in-mathematics/?tab=rfa --- Simons Fellows in Mathematics

Brief Description: The Simons Foundation's Mathematics and Physical Sciences (MPS) division invites applications for the Simons Fellows in Theoretical Physics program, which is intended to make sabbatical leaves more productive by extending them to a full academic year. The MPS division's scientific advisory board will advise the foundation on the selection of awardees. Awards will be based on the applicant's scientific accomplishments in the five-year period preceding the application and on the potential scientific impact of the work to be done during the leave period.

Eligibility Requirements: A Simons Fellow in Theoretical Physics must have a teaching or administrative tenured position at the same U.S. or Canadian college or university within the physics or related department at the time of application, throughout the course of the sabbatical and in the term following the leave. This must be the applicant's primary position. In addition, a Fellow must have an active current research program. Fellows cannot simultaneously hold a Simons Investigator award.

Award: A Simons Fellowship in Theoretical Physics/Mathematics provides salary replacement for up to 50 percent (up to a maximum of $100,000) of the Fellow's current academic-year salary, whether normally paid over 9 or 12 months, and up to $25,000 for expenses related to the leave. The Fellow's home institution will receive *an additional* 20 percent overhead on allowable expenses. Please note that the foundation's indirect cost policy allows up to 20 percent of direct cost expenditures. Any unspent funds at the end of the award must be returned to the Simons Foundation.

Proposal Deadline: September 27, 2018

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.

Graham Foundation

Grant Program: Architecture and Design Projects
Agency: Graham Foundation
Website: http://www.grahamfoundation.org/grant_programs?mode=individual

Brief Description: For individuals, our priorities are to:

- Provide opportunities to create, develop, and communicate a project about architecture and the designed environment that will contribute to their creative, intellectual, and professional growth at crucial or potentially transformative stages in their careers.
- Support their efforts to take positions, develop new forms of expression, and engage debate.
- Help them communicate their work in the public realm and reach new and wider audiences.
- Support new voices by giving priority to first-time applicants.

Overall we are most interested in opportunities which enable us to provide critical support at key points in the development of a project or career.

Award: 1) *Production/Presentation Grants*: Grants of up to $20,000 will be awarded to assist individuals with production-related expenses that are necessary to take a project from conceptualization to realization and public presentation. Projects may include but are not limited to publications, exhibitions, installations, films, and new media projects.

2) *Research/Development Grants*: Grants of up to $10,000 will be awarded to assist individuals with seed money for research-related expenses.

Proposal Deadline: September 15, 2018

University Nomination Process and Contact: If interested, please send an email to Eric Blitz (eric.blitz@njit.edu) and Atam Dhawan (dhawan@njit.edu).

Burroughs Wellcome Fund

Grant Program: Career Awards at the Scientific Interface
Agency: Burroughs Wellcome Fund
Website: https://www.bwfund.org/grant-programs/interfaces-science/career-awards-scientific-interface
Brief Description: These grants are intended to foster the early career development of researchers who have transitioned or are transitioning from undergraduate and/or graduate work in the physical/mathematical/computational sciences or engineering into postdoctoral work in the biological sciences, and who are dedicated to pursuing a career in academic research.
Scientific advances such as genomics, quantitative structural biology, imaging techniques, and modeling of complex systems have created opportunities for exciting research careers at the interface between the physical/computational sciences and the biological sciences. Tackling key problems in biology will require scientists trained in areas such as chemistry, physics, applied mathematics, computer science, and engineering.
Award: Burroughs Wellcome Foundation Career Awards at the Scientific Interface (CASI) provide $500,000 over five years to bridge advanced postdoctoral training and the first three years of faculty service. These awards are open to U.S. and Canadian citizens, permanent residents, and temporary residents. These grants are intended to foster the early career development of researchers who have transitioned or are transitioning from undergraduate and/or graduate work in the physical/mathematical/computational sciences or engineering into postdoctoral work in the biological sciences, and who are dedicated to pursuing a career in academic research.
Proposal Deadline: September 5, 2018
University Nomination Process and Contact: If interested, please send an email to Eric Blitz (eric.blitz@njit.edu) and Atam Dhawan (dhawan@njit.edu).

Streamlyne Question of the Week

Question: Can I generate budgets for multiple years from the Year-1 budget in Streamlyne?
Answer: Yes! You only need to input the Year-1 budget and then click on the "generate all periods" button. Stremalyne will create budget sheets for the remaining periods. You can then go to "summary" under the budget tab to review budget sheets for all periods. You can also change specific budget items that you allocated in Year-1 but you do not want to continue them in the following periods.

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

Streamlyne Information

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

Steamlyne_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.
Steamlyne_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/. The 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

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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.
