NJIT Research Newsletter

Issue: ORN-2020-07

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 https://research.njit.edu/funding-opportunities .

Special Announcements

Distinguished Presentation
NSF Programs and Funding Opportunities in the Division of Civil, Mechanical and Manufacturing Innovation (CMMI)

March 5, 2020, 11.00 AM – 12.00 PM; Room 112, Eberhardt

Speaker: Dr. Robert Stone, Division Director, Civil, Mechanical and Manufacturing Innovation Division, National Science Foundation

Brief Description: Dr. Robert Stone will give a presentation and Q&A about NSF's Division of Civil, Mechanical and Manufacturing Innovation's program goals, funding initiatives, and proposal best practices. There is limited availability to host Dr. Stone for individual laboratory tours. If you would like to schedule a time for Dr. Stone to see your lab, please contact Matthew Adams in Civil Engineering at adams@njit.edu.

Biography: Dr. Stone is currently serving as the Division Director for the Civil, Mechanical and Manufacturing Innovation Division at the National Science Foundation as an IPA from Oregon State University where he is a Professor in the School of Mechanical, Industrial and Manufacturing Engineering (MIME) and a Fellow of the American Society of Mechanical Engineers. Previously, he was the Co-Director of the OSU site of the Center for E-Design (a NSF I/UCRC). Dr. Stone s research interests include design theories and methodologies, specifically ontologies for product architectures, functional representations and automated conceptual design techniques. He leads the Design Engineering Lab (designengineeringlab.org). Stone was the Head of the School of MIME from 2011-2015 where he hired

22 new faculty and managed a student enrollment increase of over 200% in the School's professional school and graduate programs. Previously, he utilized his design background to assist in creating the design-focused Interdisciplinary Engineering degree program at the University of Missouri-Rolla. He has authored chapters on product architecture and reverse engineering techniques in product design texts. At Rolla he served as Director of the interdisciplinary Student Design and Experiential Learning Center from January 2004 through June 2008 where he oversaw the design competition activities of ten teams and guided the Center s new engineering design and experiential learning initiative. Prior to initiating his graduate work, Dr. Stone worked in the Missions Operation Directorate of NASA-Johnson Space Center as a Space Shuttle Flight Controller for the Guidance, Navigation and Control Section. Stone completed his Ph.D. in Mechanical Engineering from The University of Texas at Austin.

NJ ACTS Pilot Grants Program
2020 Request for Applications and Application Instructions

https://njacts.rbhs.rutgers.edu/investigator-resources/funding-opportunities/

The New Jersey Alliance for Clinical and Translational Science (NJ ACTS) is delighted to announce its **Pilot Grants Program**, supported by a grant from the National Institutes of Health/National Center for Advancing Translational Sciences, as well as funds from the New Jersey Health Foundation. For some programs, we are seeking proposals involving faculty from **at least two** NJ ACTS institutions (Rutgers, Princeton and NJIT) that, when completed, will form the basis for applications for funding from federal and other sources. For Valued Partner and Hub Evaluation/Benchmark, other CTSA Hubs or other NJ ACTS partners are required (see RFA for detailed instructions).

We are seeking proposals for 5 categories of pilots (for more details, see attached):

- Translational and Clinical Sciences Award
- Methodological and Infrastructure Awards
- Propel Awards
- Valued Partnership Awards
- Novel Approaches to Evaluation and Benchmarks of CTSA Hubs

Eligibilities:

- Co-Principal Investigators must hold faculty appointments at one of the three NJ ACTS partner institutions: Rutgers, Princeton or NJIT. The Translational and Clinical Science Awards, Methodological and Infrastructure Awards and Propel Awards must have at least 2 Co-PIs, representing different NJ ACTS institutions. Co-PIs for the Valued Partner or Benchmark/Evaluation grants may be at the partner institution (Other CTSA Hub, industry, etc.).
- Please note: Schools within an institution are not considered as separate from the parent institution. For example, a proposal with one Co-PI from New Jersey Medical School and one from the School of Engineering at Rutgers would be considered ineligible as both schools are units of Rutgers.
- Faculty members at all ranks are eligible. Junior faculty members are especially encouraged to apply.
- Co-investigators participating in the proposal need not be faculty.
- Clinical studies beyond Phase IIB are not allowed.
- Applicants may submit applications for different pilot grant categories provided that each project is different. Applicants may not submit identical projects to multiple pilot funding categories.

The **Pilot Grants Program** is supported by a grant from the National Institutes of Health/National Center for Advancing Translational Sciences, as well as funds from the New Jersey Health Foundation. **Application deadline April 3, 2020**. For more information, contact NJACTS@rbhs.rutgers.edu.

NJ ACTS Pilot Program Application 2020 is now available! Please see the NJ ACTS Pilot Programs RFA 2020, Eligibility for Pilot Grants 2020, and 2020 Pilot Program Budget Page for details.

Call for Proposals
2020 Provost Undergraduate Research and Innovation (URI) Summer Fellowships
Stipend: $3,000 each
Online Submission Deadline: March 27, 2020

https://www5.njit.edu/provost/events/undergrad_research.php

SUBMISSION FORMS/APPLICATION LINKS
Students: Application Form
Faculty: Faculty Letter of Submission
Questions: Frequently Asked Questions
Program Information: Undergraduate Research Program Summer Provost Fellowship

For additional information, please visit the URI website http://centers.njit.edu/uri/programs/provost-fellowship.php. Any questions should be directed to Ms. Brenda Herman, Undergraduate Research and Innovation Programs Coordinator at brenda.g.herman@njit.edu.

Call for Proposals
Spring 2020 Undergraduate Research and Innovation (URI) Student Seed Grants

Phase-1 Student Seed Grants: $500 per project
URI Phase-2 Student Seed Grants: $3,000 per project

Track-1 Technology/Product Development and Innovation
Track-2: Application Based Research

Proposal Submission Deadline: March 3, 2020

URI Workshop Proposal Presentations:
March 31, 2020; 2.00 PM – 5.30 PM; Ballroom A, Campus Center

We are pleased to announce the Undergraduate Research and Innovation Student Grant (URISG) program to provide students Phase-1 Student Seed Grants of $500 per project to pursue preliminary research or demonstrate an initial proof-of-concept/prototypes. URI Phase-2 Student Seed Grants provides up to

$3,000 per project to pursue research further or develop a complete prototype. Funds can only be used to order project supplies and prototyping through the Office of Undergraduate Research and Innovation. Phase-2 proposals may be submitted by former Phase-1 Student Seed Grant winners who have completed Phase-1 work, as well as new students who have a research or product idea that has shown the preliminary proof of concept, market assessment or application-based research to establish the need, significance and basic approach. The student may prepare URI Student Phase-1 or Phase-2 Seed Grant proposals following the templates with format and guidelines.

Proposal Submission Deadlines

- Students working with a faculty member may submit **Track-1 Technology/Product Development and Innovation or Track-2: Application Based Research** proposals in the required format by **March 3, 2020**. Proposal Format Guidelines information are **here** and on the **URI website**.
- Complete and submit the **Spring 2020 Student Seed Grant Application** **by March 3, 2020**. You will need to have your research proposal ready to upload when you fill out the online application form.
- Finalists selected for URI workshop presentation will be announced by **March 13, 2020**. Finalists are required to present their project through a PowerPoint presentations to the External Advisory Board following the presentation format posted on the website at the URI Workshop on **March 31, 2020** at the Campus Center Ballroom A from 2.00 PM to 5.30 PM.

Important Information on NSF Proposal Submission Effective June 1, 2020

https://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf20001&org=NSF

A revised version of the *NSF Proposal & Award Policies & Procedures Guide* (PAPPG) (NSF 20-1), is effective for proposals submitted, or due, on or after June 1, 2020. Please be advised that, depending on the specified due date, the guidelines contained in NSF 20-1 may apply to proposals submitted in response to this funding opportunity.

Grant Opportunity Alerts

Keywords and Areas Included in the Grant Opportunity Alert Section Below

NSF: **Program: Signals in the Soil; Human-Environment and Geographical Sciences Program (HEGS);** Small Business Technology Transfer Program Phase II (STTR Phase II); Small Business Innovation Research Program Phase II (SBIR Phase II); Foundational Research in Robotics; Reproducible Cells and Organoids via Directed- Differentiation Encoding (RECODE); NSF-Simons Research Collaborations on the Mathematical and Scientific Foundations of Deep Learning (MoDL); Computer Science for All (CSforAll: Research and RPPs); Spectrum and Wireless Innovation enabled by Future Technologies (SWIFT)

NIH: High-End Instrumentation (HEI) Grant Program (S10); Shared Instrumentation Grant (SIG) Program (S10); Optimizing Natural Systems for Remediation: Utilizing Innovative Materials Science Approaches to Enhance Bioremediation (R01); Collaborative Program Grant for Multidisciplinary Teams (RM1); IDeA Networks of Biomedical Research Excellence (INBRE) (P20); Environmental Health Sciences Core Centers (EHSCC) (P30); Development of Innovative Informatics Methods and Algorithms for Cancer Research and Management (R21); Biomedical Research Facilities

(C06); Silvio O. Conte Centers for Basic Neuroscience or Translational Mental Health Research (P50); NIBIB Trailblazer Award for New and Early Stage Investigators (R21)
Department of Defense/US Army/DARPA/ONR: **FY 2021 Defense University Research Instrumentation Program (DURIP);** Quantum Information Sciences; Synthetic Biology (SynBio) Manufacturing Innovation Institute (MII); Science, Technology, Engineering, and Mathematics (STEM) Educational Outreach Programs; Hydrogen Fuel Cell-Battery Powered Hybrid Emergency Relief Truck: 'H2Rescue'; Fiscal Year (FY) 2021 Funding Opportunity Announcement (FOA) for the Office of Naval Research (ONR) Manufacturing Science Program; NRL Long Range Broad Agency Announcement (BAA) for Basic and Applied Research; C4ISR, Information Operations, Cyberspace Operations and Information Technology System Research, Air Superiority Technology Broad Agency Announcement; DSO Office-wide Broad Agency Announcement
Department of Transportation: FY 2020 National Infrastructure Investments
Department of Agriculture: Scientific and Cooperative Research Program; Biotechnology Risk Assessment Grants Program; Agriculture and Food Research Initiative - Foundational and Applied Science; REAP-Renewable Energy Systems and Energy Efficiency Improvements
Department of Labor: Apprenticeships: Closing the Skills Gap
EPA: Community-Scale Air Toxics Ambient Monitoring; FY2020 National Environmental Information Exchange Network Grant Program; FY 2020 – FY 2021 Pollution Prevention Grant Program
Department of Energy: **Notice of Intent to Issue Funding Opportunity Connected Communities**; Solar Energy Technologies Office Fiscal Year 2020 Funding Program: Workforce Development in Emerging Fields; FY20 Bioenergy Technologies Multi-Topic FOA
NASA: ROSES 2020: Heliophysics Supporting Research; Astrophysics Data Analysis; HELIOPHYSICS - Early Career Investigator Program; Astrophysics Research and Analysis; Early Career Faculty; ROSES 2019: Sustainable Land Imaging-Technology
National Endowment of Humanities: Advanced Topics in the Digital Humanities; Fellowships
Arnold and Mabel Beckman Foundation: Beckman Scholar Program

Recent Research Grant and Contract Awards

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

PI: Xianlian Zhou (PI)
Department: Biomedical Engineering
Grant/Contract Project Title: Dynamic Warfighter Avatars with Complete Articulated Anatomy
Funding Agency: U.S. Army
Duration: 10/15/18-08/15/20

In the News…

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

Solar Projects with Batteries: Multiple deals shook up the renewable energy storage business last year. What had started as an experiment with solar energy and large storage batteries in Hawaii in 2016 appears to have inspired a $2.8 billion global explosion of investments and mergers in 2019 — an increase of 103%. Both the House and Senate are moving ahead with bipartisan legislation calling for more research

on energy storage. The Senate Energy and Commerce Committee cleared the Better Energy Storage Technology (BEST) Act--introduced by Susan Collins (R-Maine) but merged with other measures. In the House, two Illinois Democrats, Bill Foster, a physicist, and engineer Sean Casten have bills pending, as does Rep. Mark Takano (D-Calif.). **See how five bills fared** before the Science Committee February 12. While the Trump White House champions fossil fuels, including coal, the Department of Energy has launched the Energy Storage Grand Challenge, and its goal is to develop "a secure domestic manufacturing supply chain that is independent of foreign sources of critical materials by 2030," A report is posted on the website https://www.eenews.net/stories/1062204723

ETHICS and AI: "The Defense Department will soon adopt a detailed set of rules to govern how it develops and uses artificial intelligence," Defense One reports. It is expected to follow closely **a draft issued last October** by the Defense Innovation Board. Its guiding principles are that AI use must be responsible, equitable, traceable, reliable, and governable. A report on AI Principles: Recommendations on the Ethical Use of Artificial Intelligence by the Department of Defense is posted on the website https://media.defense.gov/2019/Oct/31/2002204458/-1/-1/0/DIB_AI_PRINCIPLES_PRIMARY_DOCUMENT.PDF

Grants for Solar-Fuels R&D: The Department of Energy plans "to provide up to $100 million over five years for research on artificial photosynthesis for the production of fuels from sunlight. The funding will support the establishment of one large or possibly two smaller DOE Energy Innovation Hubs—integrated multidisciplinary, multi-institutional research teams aimed at accelerating the fundamental scientific breakthroughs needed to enable solar fuel production." Applicants "are asked to focus on research priorities identified by the **Roundtable on Liquid Solar Fuels** held in August 2019 by the Office of Basic Energy Sciences within DOE's Office of Science." **See the funding opportunity.**

Latest White House FY21 $4.8T Budget Features Funding to Quantum Science, AI, and Space Exploration: Trump Administration released new budget request cuts the National Institutes of Health (NIH), the National Science Foundation, and basic research at the Department of Defense. Following is the summary of the latest FY21 budget:

ACCELERATING UNITED STATES R&D: In a time of great power competition, President Trump's FY 2021 Budget puts America in position to maintain its global leadership in science and technology for generations to come.

- President Trump's FY 2021 Budget invests $142.2 billion in Federal research and development (R&D), a 6 percent increase over his FY 2020 budget.
- The President's Budget prioritizes the Industries of the Future, and commits to double R&D spending in nondefense artificial intelligence (AI) and quantum information science (QIS) by 2022.
    - President Trump is the first President in American history to include AI and QIS as Administration R&D priorities. Since his inauguration, the Trump Administration has supported historic investments in R&D, bold national strategies, a pro-growth regulatory agenda, and a commitment to the American workforce.
- Beyond R&D, the FY 2021 Budget includes investments in education and job training that will help create a diverse and highly skilled American workforce to support the Industries of the Future.
    - At the National Science Foundation, an additional $50 million will go toward AI and QIS workforce development, with a focus on community colleges, Historically Black Colleges and Universities, and Minority Serving Institutions.

ARTIFICIAL INTELLIGENCE: The President's FY 2021 Budget includes a significant increase in nondefense AI R&D compared to the FY 2020 Budget and is on a path to double nondefense AI R&D by 2022.

- This increase brings spending for AI R&D and interdisciplinary research institutes at the National Science Foundation to more than $830 million, which represents a more than 70 percent increase over the FY 2020 budget.
- The Department of Energy's Office of Science will invest $125 million in AI research, a $54 million increase over FY 2020.
- The U.S. Department of Agriculture will provide $100 million for the Agriculture and Food Research Initiative competitive grants program to enhance application of advanced technology, including AI, in agricultural systems.
- The National Institutes of Health will invest $50 million for new research on chronic diseases using AI and related approaches.
- In regards to Defense AI R&D, DARPA is investing $459 million in AI R&D, an increase of $50 million from FY 2020, and the Department of Defense's Joint AI Center is increasing its budget from $242 million in FY 2020 to $290 million in FY 2021.
- **BACKGROUND**: President Trump launched the American AI Initiative, the United States national strategy for AI leadership, in February 2019.
    - The American AI Initiative directed Federal agencies to prioritize artificial intelligence in their annual budget requests. The FY 2021 budget delivers on this request.
    - The Initiative also called for the development of the first ever agency-by-agency report of nondefense AI R&D spending. This report identified $1 billion in nondefense R&D for FY 2020, establishing a benchmark for measuring nondefense AI R&D budgets in the future.

QUANTUM INFORMATION SCIENCE: President Trump's FY 2021 Budget greatly bolsters Federal QIS R&D funding with aggregate investment across key agencies increasing by more than 50 percent relative to the FY 2020 Budget, putting QIS R&D on the path to double by 2022.

- National Science Foundation investment in QIS research will double to $230 million, an additional $120 million over FY 2020.
- The Department of Energy Office of Science spending on QIS research will increase to $237 million, which will boost QIS efforts at the national laboratories and in academia and industry. This represents a nearly $70 million increase over FY 2020.
- The President's Budget includes $25 million for the Department of Energy Office of Science to support early stage research for a quantum internet.
    - The development of a network of quantum computers and quantum devices holds promise for creating new technologies, improving the security of our communications and allowing dramatic advances in computing.
    - The White House Office of Science and Technology Policy's National Quantum Coordination Office issued a *Strategic Vision for America's Quantum Networks*, which provides the QIS research community with specific recommendations to focus quantum internet R&D activities.
- **BACKGROUND:** In December 2018, President Trump signed into law the bipartisan National Quantum Initiative Act, which greatly accelerated QIS R&D investment and coordination.
    - The FY 2020 Budget jumpstarted the R&D spending called for by the legislation with at least half a billion dollars for QIS R&D across the Federal Government.
    - As directed by the legislation, the White House established the National Quantum Coordination Office to harmonize QIS efforts across the Federal agencies.

CUTS TO BASIC RESEARCH: Basic and applied research funding would drop by $7.9 billion or 9.1 percent. "Total R&D would see a commensurate drop as well. Both defense and civilian programs would be affected," writes Hourihan of AAAS. "The White House is recommending $37 billion less for nondefense spending this year, and $1.6 trillion less over the next decade . . . . Congress has repeatedly rejected such recommendations in the past, and there's little chance the outcome will be any different this time around." Lewis-Burke Associates notes that the request "deviates from the [bipartisan] budget agreement by proposing $590 billion for non-defense programs, a cut of $52 billion or 5 percent compared to FY 2020 instead of growing the budget by about 1 percent to $634.5 billion.
President's Budget: The President's Budget sets trade, defense, energy, deregulation as key goals. It is posted on the Office of Management and Budget website https://www.whitehouse.gov/omb/budget/

Webinar and Events

Event: Deciphering immuno-oncology: Targeting cellular mechanisms of the tumor immune response
Sponsor: SCIENCE; AAAS
When: February 26, 2020; 12:00 PM – 1.00 PM
Website: https://view6.workcast.net/register?cpak=1287109264303468&referrer=Blast3&et_rid=285476668&et_cid=3214835
Brief Description: Tumors are complex hubs of cellular activity that incorporate immune cells, vasculature, and even bacteria. It has become increasingly clear that a better understanding of this tumor microenvironment and the different types of immune cells within it is critical to developing more effective cancer therapies. In particular, immunotherapies that target the signaling mechanisms of T cells have shown great promise for many patients. However, these techniques have proven successful for only a fraction of people and against just a few cancer types. A detailed dissection of the molecular signaling switches that control immune cell activation and tumor checkpoint evasion is required if we hope to broaden the reach of immunotherapy treatments. Our speakers will describe key signaling mechanisms and shed light on how they can be utilized to better activate and control immune cells in the tumor microenvironment.
To Join the Webinar: Visit the above URL.

Event: Public Workshop - Evolving Role of Artificial Intelligence in Radiological Imaging
Sponsor: FDA
When: February 25-26, 2020; 8.00 AM – 5.30 PM
Website: https://www.fda.gov/medical-devices/workshops-conferences-medical-devices/public-workshop-evolving-role-artificial-intelligence-radiological-imaging-02252020-02262020?utm_campaign=2019-12-03%20CDRH%20New&utm_medium=email&utm_source=Eloqua
Brief Description: The Food and Drug Administration (FDA) is announcing the following public workshop entitled "Evolving Role of Artificial Intelligence in Radiological Imaging." The intent of this public workshop is to discuss emerging applications of Artificial Intelligence (AI) in radiological imaging including AI devices intended to automate the diagnostic radiology workflow as well as guided image acquisition. The purpose of the workshop is to work with interested stakeholders to identify the benefits and risks associated with use of AI in radiological imaging. We also plan to discuss best practices for the validation of AI-automated radiological imaging software and image acquisition devices. Validation of device performance with respect to the intended use is critical to assess safety and effectiveness.
To Join the Webinar: Please register at the above URL.

Event: NSF Funding for Startups and Small Businesses
Sponsor: NSF
When: March 2, 2020 2:00 PM – 3.00 PM
Other Dates:
March 2, 2020 2:00 PM – 3.00 PM: Biomedical and Digital Health Technologies
March 5, 2020 2:00 PM – 3.00 PM: Distributed Ledger Technologies
March 9, 2020 2:00 PM – 3.00 PM: Artificial Intelligence
March 12, 2020 2:00 PM – 3.00 PM: Pharmaceutical Technologies
March 16, 2020 2:00 PM – 3.00 PM: Biological Technologies
March 19, 2020 2:00 PM – 3.00 PM: Cybersecurity
Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=300040&org=NSF
Brief Description: Did you know that the National Science Foundation (NSF) offers funding to help turn discoveries into products or services?
Join an upcoming webinar if you are interested in translating your technology, testing if it has market potential or just learning about NSF funding opportunities.
In each webinar, a Small Business Innovation Research (SBIR) program director will discuss one of the many specific scientific topics funded through the NSF Division of Industrial Innovation and Partnerships. Look for future webinars and read more about the full range of technology topics at America's Seed Fund powered by NSF.
To Join the Webinar: Visit the above URL.

Event: I-Corps Hubs Webinars
Sponsor: NSF
When: March 3, 2020 12.00 PM – 1.00 PM
Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=299676&org=NSF
Brief Description: The National Science Foundation (NSF) cordially invites you to join an **I-Corps Hubs Webinar** to learn more about the Innovation Corps (I-Corps™) Hubs program. NSF I-Corps Hubs will form the backbone of the National Innovation Network and will work collaboratively to create and sustain a national innovation ecosystem.
During the webinar, Program Director Ruth Shuman will discuss the program and answer questions. The presentation portion of the webinar will be recorded and posted on the I-Corps website. If you have questions before or during the webinar, please send them to I-Corps@nsf.gov.
To Join the Webinar: Click on the Register link at the above URL webpage

Event: NSF Interactive Discussion: Computer Science Undergraduate Education in 2026 and Beyond
Sponsor: NSF
When: March 11, 2020 8.30 PM – 12.00 PM
Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=299394&org=NSF
Brief Description: If you could redesign STEM higher education in general and undergraduate computing sciences education specifically, what would you do differently? Join your colleagues and NSF for a highly interactive session in which participants are presented with a problematic scenario and collaborate to construct the future of computing sciences education. Participants will identify the structures, knowledge, skills and experiences, networks and relationships that are essential to achieving the well-prepared and innovative science, technology, engineering, and mathematics (STEM) workforce that is crucial to the Nation's prosperity and security. Collectively the group will create a vision of what we hope undergraduate computing education will look like in 2026 or 2050. Ideas gathered in this

workshop will inform a nationwide dialogue that that the National Science Foundation Division of Undergraduate Education is preparing to have the STEM communities and industry partners on this topic. Participants in previous versions of the workshop appreciated the new perspectives gained through their dialogue with colleagues.
This session will be held as a Pre-Symposium event at the SIGCSE Computer Science Education conference in Portland, Oregon

Event: NSF Distinguished Lecture Series in Mathematical and Physical Sciences for 2019-20
Sponsor: NSF
When: Various; Please see below.
Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=299152&org=NSF
Brief Description: These lectures will be held at the National Science Foundation, 2415 Eisenhower Ave., Alexandria, VA 22314. Advance sign-up requests are required for preparation of visitor passes by emailing the contact below. Guidelines for visiting NSF are at https://www.nsf.gov/about/visit/
March 23, 2020 2:00 PM to March 23, 2020 3:00 PM
May 4, 2020 2:00 PM to May 4, 2020 3:00 PM
June 11, 2020 2:00 PM to June 11, 2020 3:00 PM
To Join the Webinar: Please register at the above URL.

Grant Opportunities

National Science Foundation

Grant Program: Signals in the Soil
Agency: National Science Foundation NSF 20-548
RFP Website: https://www.nsf.gov/pubs/2020/nsf20548/nsf20548.htm
Brief Description: The National Science Foundation (NSF) Directorates for Engineering (ENG) and Geosciences (GEO), the Divisions of Integrative Organismal Systems (IOS) and Environmental Biology (DEB), in the Directorate for Biological Sciences (BIO), the Division of Computer and Network Systems in the Directorate Computer and Information Science and Engineering (CISE/CNS), and the Division of Chemistry (CHE) in the Directorate for Mathematical and Physical Sciences, in collaboration with the US Department of Agriculture National Institute of Food and Agriculture (USDA NIFA) encourage convergent research that transforms existing capabilities in understanding dynamic soil processes, including soil formation, through advances in sensor systems and modeling. The Signals in the Soil (SitS) program fosters collaboration among the two partner agencies and the researchers they support by combining resources and funding for the most innovative and high-impact projects that address their respective missions. To make transformative advances in our understanding of soils, multiple disciplines must converge to produce environmentally-benign novel sensing systems with multiple modalities that can adapt to different environments and collect and transmit data for a wide range of biological, chemical, and physical parameters. Effective integration of sensor data will be key for achieving a better understanding of signaling interactions among plants, animals, microbes, the soil matrix, and aqueous and gaseous components. New sensor networks have the potential to inform models in novel ways, to radically change how data is obtained from various natural and managed (both urban and rural) ecosystems, and to better inform the communities that directly rely on soils for sustenance and livelihood.
Each proposal must address **at least one** of the following five priorities. Systems approaches and attention to NSF's cross-cutting themes described below the 5 priorities are particularly encouraged.

1. **Development of novel sensors**
2. **Biological/ chemical/ physical interactions**
3. **Cross-disciplinary modeling**
4. **Data transmission and analysis**
5. **Cyber-infrastructure**

Awards: Standard Grant or Continuing Grant; Anticipated Funding Amount: $8,000,000 to $13,000,000
Letter of Intent: Required
Proposal Submission Deadline: May 20, 2020
Contacts: Brandi Schottel, Division of Chemical, Bioengineering, Environmental, and Transport Systems, telephone: (703) 292-4798, email: SitSquestions@nsf.gov

- Richard J. Fragaszy, Division of Civil, Mechanical, and Manufacturing Innovation, telephone: (703) 292-7011, email: SitSquestions@nsf.gov
- Mohammod Ali, Division of Electrical, Communications, and Cyber Systems, telephone: (703) 292-4632, email: SitSquestions@nsf.gov

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Grant Program: Human-Environment and Geographical Sciences Program (HEGS)
Agency: National Science Foundation NSF 20-547
RFP Website: https://www.nsf.gov/pubs/2020/nsf20547/nsf20547.htm
Brief Description: The objective of the Human-Environment and Geographical Sciences (HEGS) Program is to support basic scientific research about the nature, causes, and/or consequences of the spatial distribution of human activity and/or environmental processes across a range of scales. Projects about a broad range of topics may be appropriate for support if they enhance fundamental geographical knowledge, concepts, theories, methods, and their application to societal problems and concerns. Recognizing the breadth of the field's contributions to science, the HEGS Program welcomes proposals for empirically grounded, theoretically engaged, and methodologically sophisticated geographical research. National Science Foundation's mandate is to support basic scientific research. Support is provided for projects that are most effective in grounding research in relevant theoretical frameworks relevant to HEGS, that focus on questions that emanate from the theoretical discussions, and that use scientific methods to answer those questions. HEGS supported projects are expected to yield results that will enhance, expand, and transform fundamental geographical theory and methods, and that will have positive broader impacts that benefit society.
Awards: Standard Grant or Continuing Grant; Anticipated Funding Amount: $5,000,000 to $6,000,000
Letter of Intent: Not Required
Proposal Submission Deadline:
August 18, 2020
Third Tuesday in August, Annually Thereafter
January 19, 2021
Third Tuesday in January, Annually Thereafter
Contacts: Jacqueline M. Vadjunec, Program Director, telephone: (703) 292-7064,
email: jmvadjun@nsf.gov

- Scott M. Freundschuh, Program Director, telephone: (703) 292-7076, email: sfreunds@nsf.gov

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Grant Program: Small Business Technology Transfer Program Phase II (STTR Phase II)
Small Business Innovation Research Program Phase II (SBIR Phase II)
Agency: National Science Foundation NSF 20-546 NSF 20-545
RFP Website: https://www.nsf.gov/pubs/2020/nsf20546/nsf20546.htm

https://www.nsf.gov/pubs/2020/nsf20545/nsf20545.htm
Brief Description: A small business may apply for a National Science Foundation (NSF) Phase II Small Business Innovation Research (SBIR) or Small Business Technology Transfer (STTR) award only if it has been received a NSF Phase I award, and only for continued research toward commercialization of the technology developed under the Phase I award.
The Phase II funding amount has increased to a maximum of $1,000,000 to better support the nation's startups and small businesses, as part of the recent federal adjustment for inflation. This amount includes up to $50,000 to be used by the Phase II awardee for commercial assistance under the SBIR Technical and Business Assistance (TABA) legislation. See section A.5, line G.6 of this document for details.
Small businesses are eligible to submit a Phase II proposal between six and twenty-four months after the start date of their relevant NSF SBIR/STTR Phase I award. Reference the Phase I award notice for the exact start date of the Phase I award. Proposals submitted outside of their eligible Phase II timeframe may be returned without review. *The proposal submission system (Fastlane) will shut down at 5:00 pm "proposer's time" on the submission window closing date. See section V.A of this document for more details.*
The STTR program solicits proposals from the small business sector consistent with NSF's mission to promote the progress of science; to advance the national health, prosperity, and welfare; and to secure the national defense.
The SBIR program solicits proposals from the small business sector consistent with NSF's mission to promote the progress of science; to advance the national health, prosperity, and welfare; and to secure the national defense.
Awards: Fixed Amount Cooperative Agreement
SBIR Anticipated Funding Amount: $10,000,000 to $15,000,000
Anticipated Funding Amount: $110,000,000
Proposal Submission Window: February 14, 2020 - March 05, 2020; March 06, 2020 - June 04, 2020 June 05, 2020 - September 03, 2020; September 04, 2020 - December 03, 2020
Contacts: Contact Your NSF STTR Phase I Program Officer, telephone: 703-292-8050, email: sbir@nsf.gov
Contact Your NSF SBIR Phase I Program Officer, telephone: 703-292-8050, email: sbir@nsf.gov

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Grant Program: Foundational Research in Robotics
Agency: National Science Foundation NSF PD 20-144Y
RFP Website:
https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505784&org=NSF&sel_org=NSF&from=fund
Brief Description: The Foundational Research in Robotics (Robotics) program supports research on robotic systems that exhibit significant levels of both computational capability and physical complexity. For the purposes of this program, a robot is defined as intelligence embodied in an engineered construct, with the ability to process information, sense, and move within or substantially alter its working environment. Here intelligence includes a broad class of methods that enable a robot to solve problems or make contextually appropriate decisions. Research is welcomed that considers inextricably interwoven questions of intelligence, computation, and embodiment. Projects may also focus on a distinct aspect of intelligence, computation, or embodiment, as long as the proposed research is clearly justified in the context of a class of robots.
The focus of the Robotics program is on foundational advances in robotics. Robotics is a deeply interdisciplinary field, and proposals are encouraged that explore the full range of fundamental engineering and computer science research challenges arising in robotics. However, all proposals must

convincingly explain how a successful outcome will enable transformative new robot functionality or substantially enhance existing robot functionality. The proposal should clearly articulate how the intellectual contribution of the proposed work addresses fundamental gaps in robotics. Meaningful experimental validation on a physical platform is strongly encouraged. Projects that do not represent a direct fundamental contribution to robotics should not be submitted to the Robotics program.
Potential investigators are strongly encouraged to discuss their projects with a Robotics Program Officer before submission. Non-compliant proposals may be returned without review.
Awards: Robotics proposals submitted to other program announcements or solicitations, including the Faculty Early Career Development Program (CAREER), must meet the respective deadlines of those programs; please refer to the deadline dates specified in the appropriate announcement or solicitation. Proposals for EArly-concept Grants for Exploratory Research (EAGER), Rapid Response Research (RAPID) or Research Advanced by Interdisciplinary Science and Engineering (RAISE) can be submitted at any time, but Principal Investigators (PIs) must contact the cognizant Program Officer prior to submission.
Letter of Intent: Required by March 20, 2020
Proposal Submission Deadline: Program Will Accept Proposals Anytime After August 1, 2020
Contacts: Christopher Radhakisan S. Baheti ENG/ECCS Jordan M. Berg ENG/CMMI David Corman CISE/CNS Irina Dolinskaya ENG/CMMI

Grant Program: Reproducible Cells and Organoids via Directed- Differentiation Encoding (RECODE)
Agency: National Science Foundation NSF 20-541
RFP Website: https://www.nsf.gov/pubs/2020/nsf20541/nsf20541.htm
Brief Description: The National Science Foundation (NSF) Division of Chemical, Bioengineering, Environmental and Transport Systems (CBET), seeks proposals that elucidate mechanisms of, and develop strategies to, direct the differentiation of undifferentiated cells into mature, functional cells or organoids. Projects responsive to this solicitation must aim to establish a robust and reproducible set of differentiation design rules, predictive models, real-time sensing, control, and quality assurance methods, and integrate them into a workable differentiation strategy. They must develop a fundamental understanding of how cells develop, including mechanisms, molecular machinery, dynamics, and cell-cell interactions, and use this understanding to manipulate cells purposefully. Investigators can choose any undifferentiated cell type, from any animal species, as a starting point and choose any appropriate functional product (cell, organoid, etc.) with real-world relevance. This solicitation parallels NSF's investment in *Understanding the Rules of Life (URoL): Predicting Phenotype*, NSF's Big Idea focused on predicting the set of observable characteristics (phenotype) of an organism based on its genetic makeup and the nature of its environment and applies it to understanding and accomplishing the intentional and guided differentiation of an undifferentiated cell into cells, organoids or tissues with predetermined activities and functions.

The convergence of many disciplines is necessary to answer the fundamental questions and devise the tools needed to realize truly deterministic cell induction and differentiation strategies. As such, investigators are encouraged to form interdisciplinary teams with expertise in developmental biology, stem cell biology, cell biology, engineering, synthetic and systems biology, computation, sensing, and physics. Proposals will not be responsive to this solicitation if they address only one aspect of the differentiation process or aim to create a functional living product without improving our understanding of the mechanisms that underlie developmental processes. The solicitation will support teams of three or more PI/co-PIs and senior personnel. Proposals with only one PI or one PI with one other senior personnel are not permitted.

Awards: Standard grants. Anticipated Funding Amount: $5,000,000
Letter of Intent: Required by March 02, 2020
Proposal Submission Deadline: April 30, 2020
Contacts: Steven W. Peretti, telephone: (703) 292-7029, email: speretti@nsf.gov

- Aleksandr L. Simonian, telephone: (703) 292-2191, email: asimonia@nsf.gov
- Leon Esterowitz, telephone: (703) 292-7942, email: lesterow@nsf.gov

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Grant Program: NSF-Simons Research Collaborations on the Mathematical and Scientific Foundations of Deep Learning (MoDL)
Agency: National Science Foundation NSF 20-540
RFP Website: https://www.nsf.gov/pubs/2020/nsf20540/nsf20540.htm?org=NSF#budg_cst_shr_txt
Brief Description: The National Science Foundation Directorates for Mathematical and Physical Sciences (MPS), Computer and Information Science and Engineering (CISE), Engineering (ENG), and the Simons Foundation Division of Mathematics and Physical Sciences will jointly sponsor up to two new research collaborations consisting of mathematicians, statisticians, electrical engineers, and theoretical computer scientists. Research activities will be focused on explicit topics involving some of the most challenging questions in the general area of Mathematical and Scientific Foundations of Deep Learning. Each collaboration will conduct training through research involvement of recent doctoral degree recipients, graduate students, and/or undergraduate students from across this multi-disciplinary spectrum. Annual meetings of the Principal Investigators ("PIs") and other principal researchers involved in the collaborations will be held at the Simons Foundation in New York City. This program complements NSF's National Artificial Intelligence Research Institutes program by supporting collaborative research focused on the mathematical and scientific foundations of Deep Learning through a different modality and at a different scale.
Awards: Continuing grants. Anticipated Funding Amount: $20,000,000
NSF estimates that $10,000,000 will be available to support two projects of five years duration each. The Simons Foundation will contribute up to $10,000,000 to support the same two projects over the five-year duration of the awards. NSF and the Simons Foundation expect to co-fund each of the two projects, and that each project will have an annual budget of up to $2,000,000 combined from both sources.
Letter of Intent: Required by March 20, 2020
Proposal Submission Deadline: April 30, 2020
Contacts: Christopher W. Stark, MPS/DMS, telephone: (703) 292-4869, email: cstark@nsf.gov

- Radhakisan S. Baheti, ENG/ECCS, telephone: (703) 292-8339, email: rbaheti@nsf.gov
- Funda Ergun, CISE/CCF, telephone: (703) 292-2216, email: fergun@nsf.gov

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Grant Program: Computer Science for All (CSforAll: Research and RPPs)
Agency: National Science Foundation NSF 20-539
RFP Website: https://www.nsf.gov/pubs/2020/nsf20539/nsf20539.htm
Brief Description: This program aims to provide *all* U.S. students with the opportunity to participate in computer science (CS) and computational thinking (CT) education in their schools at the preK-12 levels. With this solicitation, the National Science Foundation (NSF) focuses on both research and researcher-practitioner partnerships (RPPs) that foster the research and development needed to bring CS and CT to all schools. Specifically, this solicitation aims to provide (1) **high school teachers** with the preparation, professional development (PD) and ongoing support they need to teach rigorous computer science courses; (2) **preK-8 te**achers with the instructional materials and preparation they need to integrate CS

and CT into their teaching; and (3) **schools and districts** with the resources needed to define and evaluate multi-grade pathways in CS and CT.
"Building Computational Literacy" is one of four pathways identified in the 2018-2023 five-year plan for achieving the Federal government's three goals for STEM education, titled *Charting A Course for Success: America's Strategy for STEM Education*. A central purpose of this pathway is to "advance CT as a critical skill for today's world." "Make CT an integral element of all education" is one of three objectives under that pathway—and three key Federal actions are identified in the plan as needed to achieve this objective.

- "Increase the number of Federal funding and partnership opportunities that include CT as a selection criterion."
- "Support research and disseminate best practices on effective methods for teaching CT and computer science to young children as part of the STEM curriculum."
- "Identify and share education practices and curriculum materials that are effective at developing CT."

Awards: Standard grants. Anticipated Funding Amount: $20,000,000
Approximately 8 small RPPs, 7 medium RPPs, 3 large RPPs, and 9 research awards.
Letter of Intent: Not Required
Proposal Submission Deadline: April 13, 2020
Contacts: Jeffrey Forbes, CISE/CNS, telephone: (703) 292-8950, email: jforbes@nsf.gov

- Michael Ford, EHR/DRL, telephone: (703) 292-5153, email: miford@nsf.gov
- Allyson Kennedy, CISE/CNS, telephone: (703) 292-8950, email: aykenned@nsf.gov

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Grant Program: Spectrum and Wireless Innovation enabled by Future Technologies (SWIFT)
Agency: National Science Foundation NSF 20-537
RFP Website: https://www.nsf.gov/pubs/2020/nsf20537/nsf20537.htm
Brief Description: The National Science Foundation's Directorates for Engineering (ENG), Computer and Information Science and Engineering (CISE), Mathematical and Physical Sciences (MPS), and Geosciences (GEO) are coordinating efforts to identify new concepts and ideas on Spectrum and Wireless Innovation enabled by Future Technologies (SWIFT). A key aspect of this new solicitation is its focus on effective spectrum utilization and/or coexistence techniques, especially with passive uses, which have received less attention from researchers. Coexistence is when two or more applications use the same frequency band at the same time and/or at the same location, yet do not adversely affect one another. Coexistence is especially difficult when at least one of the spectrum users is passive, i.e., not transmitting any radio frequency (RF) energy. Examples of coexisting systems may include passive and active systems (e.g., radio astronomy and 5G wireless communication systems) or two active systems (e.g., weather radar and Wi-Fi). Breakthrough innovations are sought on both the wireless communication hardware and the algorithmic/protocol fronts through synergistic teamwork. The goal of these research projects may be the creation of new technology or significant enhancements to existing wireless infrastructure, with an aim to benefit society by improving spectrum utilization, beyond mere spectrum efficiency. The SWIFT program seeks to fund collaborative team research that transcends the traditional boundaries of individual disciplines.
Awards: Standard grants.
Approximately 6 awards of up to $500,000 each for 3 years for SMALL team efforts.
Approximately 6 awards of up to $1,500,000 each for 3 years for LARGE team efforts.
Anticipated Funding Amount: $12,000,000
Letter of Intent: Not Required
Proposal Submission Deadline: April 03, 2020

Contacts: Jenshan Lin, ENG/ECCS, telephone: (703) 292-8339, email: jenlin@nsf.gov
- Monisha Ghosh, CISE/CNS, telephone: (703) 292-8950, email: mghosh@nsf.gov
- Alexander Sprintson, CISE/CNS, telephone: (703) 292-8950, email: asprints@nsf.gov

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National Institutes of Health

Grant Program: High-End Instrumentation (HEI) Grant Program (S10 Clinical Trial Not Allowed)
Agency: National Institutes of Health PAR-20-114
PAR-20-113 Shared instrumentation Grant (SIG) Program (Clinical Trial Not Allowed)
PAR-20-112 Shared Instrumentation for Animal Research (SIFAR) Grant Program (Clinical Trial Not Allowed)
RFP Website: https://grants.nih.gov/grants/guide/rfa-files/RFA-ES-20-004.html
Brief Description: The High-End Instrumentation (HEI) Grant program encourages applications from groups of NIH-supported investigators to purchase or upgrade a single item of high-end, specialized, commercially available instruments or integrated systems. The minimum award is $600,001. There is no maximum price limit for the instrument; however, the maximum award is $2,000,000. Types of instruments supported include, but are not limited to: X-ray diffractometers, mass spectrometers, nuclear magnetic resonance (NMR) spectrometers, DNA and protein sequencers, biosensors, electron and light microscopes, cell sorters, high throughput robotic screening systems, and biomedical imagers.
Awards: Applications will be accepted that request a single, commercially available instrument or integrated system. The minimum award is $600,001. There is no upper limit on the cost of the instrument, but the maximum award is $2,000,000. Since the cost of the various instruments will vary, it is anticipated that the size of the award will also vary. S10 awards do not allow indirect costs.
Letter of Intent: Not Required
Deadline: June 1, 2020
All applications are due by 5:00 PM local time of applicant organization. All types of non-AIDS applications allowed for this funding opportunity announcement are due on the listed date(s).
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: Shared Instrumentation Grant (SIG) Program (S10 Clinical Trial Not Allowed)
Agency: National Institutes of Health PAR-20-113
RFP Website: https://grants.nih.gov/grants/guide/pa-files/PAR-20-113.html
Brief Description: The purpose of this funding opportunity is to continue the Shared Instrumentation Grant (SIG) Program administered by ORIP. The objective of the Program is to make available to institutions high-priced research instruments that can only be justified on a shared-use basis and that are needed for NIH-supported projects in basic, translational or clinical biomedical and bio-behavioral research. The SIG Program provides funds to purchase or upgrade a single item of expensive, state-of-the-art, specialized, commercially available instrument or an integrated instrumentation system. An integrated instrumentation system is one in which the components, when used in conjunction with one another, perform a function that no single component can provide. The components must be dedicated to the system and not used independently.
The Shared Instrument Grant (SIG) Program encourages applications from groups of NIH-supported investigators to purchase or upgrade a single item of high-priced, specialized, commercially available instruments or integrated systems. The minimum award is $50,000. There is no maximum price limit for

the instrument; however, the maximum award is $600,000. Types of instruments supported include, but are not limited to: X-ray diffractometers, mass spectrometers, nuclear magnetic resonance spectrometers, DNA and protein sequencers, biosensors, electron and light microscopes, cell sorters, and biomedical imagers.

The SIG Program will not support requests for:

- An instrument with a base cost of less than $50,000;
- Multiple instruments bundled together;
- Purely instructional equipment;
- Instruments used for clinical (billable) care;
- Institutional administrative management systems, clinical management systems;
- Software, unless it is integrated in the operation of the instrument and/or necessary for generation of high-quality output experimental data from the instrument;
- Stand-alone workstations for data processing, software licenses, and duplicate software items;
- General purpose equipment (such as standard machine shop equipment), instruments to furnish a research facility (such as autoclaves, hoods, equipment to upgrade animal facilities), equipment for routine sustaining infrastructure (such as standard computer networks or data storage systems);
- Disposable devices, office furniture, and supplies;
- Alteration or renovation of space to house the instruments.

Awards: Applications will be accepted that request a single, commercially available instrument or an integrated system. The minimum award is $50,000. There is no upper limit on the cost of the instrument, but the maximum award is $600,000. Since the cost of the various instruments will vary, it is anticipated that the amount of the award will also vary. S10 awards do not allow indirect costs.

Letter of Intent: Not Required

Deadline: June 1, 2020

All applications are due by 5:00 PM local time of applicant organization. All types of non-AIDS applications allowed for this funding opportunity announcement are due on the listed date(s).

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: Optimizing Natural Systems for Remediation: Utilizing Innovative Materials Science Approaches to Enhance Bioremediation (R01 Clinical Trial Not Allowed)

Agency: National Institutes of Health RFA-ES-20-004

RFP Website: https://grants.nih.gov/grants/guide/rfa-files/RFA-ES-20-004.html

Brief Description: The purpose of this FOA is to support innovative approaches to understand mechanisms of bioremediation. Bioremediation, for the purposes of this FOA, encompasses remediation using bacteria, archaea, algae, fungi, and/or plants to degrade, extract, or stabilize contaminants as part of a natural or constructed system. Applicants should assemble teams of researchers with expertise in bioremediation and materials science to propose integrated approaches to reduce the burden of contaminants in the environment. Through a transdisciplinary approach, applicants should elucidate mechanisms of bioremediation and use that knowledge to address challenging scenarios for which bioremediation may be a solution. It is expected the major outcomes of this program will be the elucidation of mechanisms impacting bioremediation success and stimulation of innovative transdisciplinary approaches incorporating materials science to optimize bioremediation. Overall, this program will facilitate cutting-edge transdisciplinary science needed to advance research in bioremediation relevant to the goals of the SRP.

Applicants are encouraged to propose advanced approaches that combine a mechanistic understanding of bioremediation and materials science including, but not limited to:

- Utilization of nanotechnology-enabled frameworks to understand the basic structural properties of microorganisms/plants and to enhance bioremediation of hazardous substances;
- Utilization of machine learning to predict optimal conditions and pathways to apply innovative materials that stimulate bioaugmentation or to customize the design of new materials to enhance mechanistic understanding and effectiveness of bioremediation;
- Integration and analysis of 'omics' data from across several hazardous sites to discover new options for development of innovative materials for bioaugmentation/biostimulation;
- Development of controlled, engineered microenvironments to overcome biogeochemical/ecological limitations of biodegradation, to prevent formation of unintended byproducts, or to accommodate biodegradation of multiple contaminants;
- Employment of nanotech-derived devices and materials to investigate the mechanisms underlying bioremediation so that more effective remediation strategies could be created;
- Integration of novel materials science-enhanced bioamendment delivery with advanced site models to better understand biogeochemical and ecological mechanisms of bioremediation.

Awards: Application budgets should reflect the actual needs of the proposed project and are limited to $200K direct costs per year.
Letter of Intent: March 20, 2020
Deadline: April 20, 2020. No late applications will be accepted for this Funding Opportunity Announcement.
All applications are due by 5:00 PM local time of applicant organization. All types of non-AIDS applications allowed for this funding opportunity announcement are due on the listed date(s).
Applicants are encouraged to apply early to allow adequate time to make any corrections to errors found in the application during the submission process by the due date.

Grant Program: Collaborative Program Grant for Multidisciplinary Teams (RM1 - Clinical Trial Optional)
Agency: National Institutes of Health PAR-20-103
RFP Website: https://grants.nih.gov/grants/guide/pa-files/PAR-20-103.html
Brief Description: This funding opportunity announcement (FOA) encourages Collaborative Program Grant applications from institutions/organizations that propose to conduct research to address complex and challenging biomedical problems, important for the mission of NIGMS, through deeply integrated, multidisciplinary research teams. The Collaborative Program Grant is designed to support research in which funding a team of interdependent investigators offers significant advantages over support of individual research project grants. Applications should address critical issues and be sufficiently challenging, ambitious, and innovative that objectives could not be achieved by individual investigators.

Successful Collaborative Program Grant applications will bring together scientists to apply complementary approaches to work on an important and well-defined problem. Applications may address any area of science within the NIGMS mission, which is to support basic research that increases understanding of biological processes at a range of levels, from molecules and cells, to tissues, whole organisms, and populations. NIGMS also supports research in a limited number of clinical areas that affect multiple organ systems. Truly new interdisciplinary ideas for approaching significant biological problems are encouraged. Applications that bridge the research interests of more than one NIGMS division are also encouraged, but must remain within the scope of the NIGMS mission. Research with the overall goal to gain knowledge about a specific organ or organ system, or the pathophysiology, treatment, or cure of a specific disease or condition will, in most cases, be more appropriate for another Institute or Center. Consultation with NIGMS staff (see below) prior to preparing an application is strongly encouraged.

Applications submitted to this FOA are expected to propose a single, well-integrated research plan of sufficient scope, complexity, and impact to justify the investment of significant resources. Applicants are expected to describe a cohesive program with a single set of specific aims sufficient to accomplish program objectives that can be achieved within a maximum of ten years (one five-year program with one five-year competitive renewal). Program objectives that are unlikely to be achieved within ten years are not appropriate for this FOA.

Applications should be sufficiently challenging, ambitious, and innovative that the proposed research cannot be achieved by a single investigator or small group of investigators. Therefore, a multiple PD/PI application is required and applications must include a minimum of three and a maximum of six PD/PIs who are all necessary to provide sufficient research capacity and the relevant expertise to address the proposed scientific problem. Applications that propose extrapolations of a single line of research or propose parallel but independent advancement of different areas are not appropriate for this FOA.

Award: NIGMS anticipates supporting no more than 4-6 awards, corresponding to a total of $10,000,000 (total costs) for fiscal year 2021.

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

Deadline: May 27, 2020; January 27, 2021; May 27, 2021; January 27, 2022; May 27, 2022; January 27, 2023

All applications are due by 5:00 PM local time of applicant organization. All types of non-AIDS applications allowed for this funding opportunity announcement are due on the listed date(s).

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: IDeA Networks of Biomedical Research Excellence (INBRE) (P20 Clinical Trial Optional)

Agency: National Institutes of Health PAR-20-102

RFP Website: https://grants.nih.gov/grants/guide/pa-files/PAR-20-102.html

Brief Description: The National Institute of General Medical Sciences (NIGMS) of the National Institutes of Health (NIH) invites applications for Institutional Development Award (IDeA) Networks of Biomedical Research Excellence (INBRE) grants within IDeA-eligible states to independent biomedical research institutes and/or research institutions that award doctoral degrees in health-related sciences. INBRE applications represent collaboration between research intensive institutions, primarily undergraduate institutions (PUIs), community colleges, and Tribally Controlled Colleges and Universities (TCCUs).

This Funding Opportunity Announcement (FOA) builds on the successes of the INBRE program to augment and strengthen the state's biomedical research capacity. The primary goals of the INBRE program are to: 1) build on the established multi-disciplinary research network to strengthen the lead and partner institutions' biomedical research expertise and infrastructure; 2) build and increase the research base and capacity by providing support to faculty, postdoctoral fellows, and graduate students at the participating institutions; 3) provide research opportunities for students from PUIs, community colleges, and TCCUs and serve as a "pipeline" for these students to continue in biomedical research careers within IDeA states; and 4) enhance the science and technology knowledge of the state's workforce.

For the purposes of this FOA, “primarily undergraduate institutions” include U.S. two-year, four-year, masters-level, and small doctoral-granting colleges and universities that (1) grant baccalaureate degrees in NIH-supported fields, or provide programs of instruction for students pursuing such degrees with institutional transfers (e.g., two-year schools); (2) have undergraduate enrollment exceeding graduate enrollment; and (3) award an average of no more than 10 Ph.D. or D.Sc. degrees per year in biomedical and behavioral sciences.

The INBRE program seeks to promote the development and expansion of unique, innovative, state-of-the-art biomedical and behavioral research at institutions in IDeA-eligible states, encompassing the full spectrum of basic, clinical, and translational sciences. The NIH recognizes that the contributions from the institutions in IDeA-eligible states are important and essential in fulfilling the promise of the NIH research agenda. The intent of this FOA is to continue assisting these institutions to implement and use the technologies and other resources needed to conduct state-of-the-art biomedical and behavioral research and provide research experiences to students at baccalaureate institutions, community colleges, and TCCUs.
Award: Direct costs are limited to $2.75 million per year, excluding facilities and administrative (F&A) costs on consortium arrangements. In addition, this FOA will provide one-time funds of up to $250,000 in direct costs in the first year of the award for alteration and renovation to improve existing core laboratories, research laboratories and/or animal facilities at the PUIs, community colleges, and TCCUs.
Only one award will be made per IDeA-eligible state.
Letter of Intent: Not Required
Deadline: May 20, 2020; May 20, 2021; May 20, 2022
All applications are due by 5:00 PM local time of applicant organization. All types of non-AIDS applications allowed for this funding opportunity announcement are due on the listed date(s). 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: Environmental Health Sciences Core Centers (EHSCC) (P30 Clinical Trial Optional)
Agency: National Institutes of Health RFA-ES-20-006
RFP Website: https://grants.nih.gov/grants/guide/rfa-files/RFA-ES-20-006.html
Brief Description: The NIEHS Environmental Health Sciences Core Centers (EHS CC) Program is intended to bring together investigators currently funded by NIH or other Federal or non-Federal sources to enhance the effectiveness of existing research and extend the focus of research for the environmental health sciences. An EHS CC should support innovation and be on the cutting edge of science. It is expected that research activities will cross a variety of disciplines to bring multiple perspectives and approaches to bear on significant problems. It is expected that the interdisciplinary nature of an EHS CC will have a synergistic effect that results in greater depth, breadth, quality, innovation and productivity beyond what individual scientists would be likely to attain by working independently and as such lead to translational research opportunities. As intellectual hubs for environmental health research, the membership of EHS CC's is expected to be the thought leaders for the field as well as advance the goals of the NIEHS Strategic Plan (http://www.niehs.nih.gov/about/strategicplan/.)

The overall goals for the EHS CC Program are to enhance the capabilities of existing programs in environmental health sciences, assist with building programmatic and scientific capacity, lead in the development of novel research directions, recruit and groom future leaders in the field, and pioneer efforts in community engagement. The EHS CC grant provides facilities and resources to accelerate research along the spectrum from basic mechanistic and toxicological science to population and public health and dissemination. Moreover, with the release of the translational research (TR) framework for the environmental health sciences (https://www.niehs.nih.gov/translation), it is expected that an EHS CC facilitate translational research that encompasses all aspects of an EHS CC. The TR framework is an innovative tool that incorporates the dynamic nature of environmental health research to inform and facilitate the use of scientific/public health advances across the translational spectrum to accelerate improving the health of individuals and the public.

Award: New or first-time applicants are limited to $850,000 Direct Costs per year. Renewal applications are limited to $1.0M Direct Costs per year. See Eligibility requirements.
Letter of Intent: April 18, 2020, March 16, 2021, March 14, 2022
Deadline: May 18, 2020, April 16, 2021, April 14, 2022.
All applications are due by 5:00 PM local time of applicant organization. All types of non-AIDS applications allowed for this funding opportunity announcement are due on the listed date(s).
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 Innovative Informatics Methods and Algorithms for Cancer Research and Management (R21 Clinical Trial Optional)
Agency: National Institutes of Health RFA-CA-20-007
Companion Funding Opportunity:

- **RFA-CA-20-008, U01 Research Projects - Cooperative Agreements**
- **RFA-CA-20-009, U24 Resource-Related Research Projects - Cooperative Agreements**
- **RFA-CA-20-010, U24 Resource-Related Research Projects - Cooperative Agreements**
- **RFA-CA-20-011, R01 Research Project**
- **RFA-CA-20-012, U01 Research Projects - Cooperative Agreements**
- **RFA-CA-20-013, U24 Resource-Related Research Projects - Cooperative Agreements**

RFP Website: https://grants.nih.gov/grants/guide/rfa-files/RFA-CA-20-007.html
Brief Description: This FOA encourages applications that involve the development of highly innovative methods and algorithms that support a wide range of cancer research, including discovery biology, population studies, as well as clinical and translational research. The emphasis will be on novelty and potential for impact on cancer research.
Some examples of needs that may be appropriate to this FOA include but are not limited to those listed below:

- Data acquisition methods, such as for laboratory equipment, wearable devices, and questionnaires;
- Data mining, data visualization, and data analysis;
- Data processing such as data compression, data provenance, and data wrangling;
- Data annotation;
- Data integration and workflow methods;
- Statistical methods, graph, and network theory approaches, and machine learning methods;
- Natural language processing and text mining;
- Clinical decision support and treatment planning;
- Methods to support next-generation clinical trials and clinical trial matching;
- Behavioral intervention;
- Interactive modeling and simulation.

Applications in support of methods and algorithms that address under-represented areas in the program portfolio are of particular interest. The list of funded projects is available at https://itcr.cancer.gov/about-itcr/funded-projects.
Awards: Direct costs are limited to $275,000 over a two year period.
Letter of Intent: 30 days prior to the application due date
Deadline: June 9, 2020; November 18, 2020
All applications are due by 5:00 PM local time of applicant organization. All types of non-AIDS applications allowed for this funding opportunity announcement are due on the listed date(s).

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: Biomedical Research Facilities (C06 Clinical Trial Not Allowed)
Agency: National Institutes of Health PAR-20-086
RFP Website: https://grants.nih.gov/grants/guide/pa-files/PAR-20-086.html
Brief Description: NIH recognizes that modern physical infrastructure is necessary for the conduct of cutting-edge research. As science progresses and new technologies become available, dedicated space is required to house specialized equipment and to carry out novel experimental protocols. Projects will vary and depend on the present institutional infrastructure and long-term institutional research plans. Focusing on the advancement of science through the modernization of physical space will be a common and integral feature of all proposed projects. When completed, projects will have a significant institution-wide impact, bringing the research capacities and capabilities to a new level. An institution may request funds to modernize a core facility to create an environment required for research-driven specialized technological services. Likewise, funds may be requested to consolidate space for an institution-wide core which would provide streamlined workflows for contemporary multi-disciplinary investigations. Modernizing laboratory space used on a shared basis to meet the growing needs consistent with an institutional strategic vision for biomedical research is another example of a suitable request. A successful project will serve research teams and a broad range of research efforts.

NIH recognizes the importance of all institutions of higher learning in contributing to the nation's research capacity. NIH intends to make available at least 25% of the funds to support projects from Institutions of Emerging Excellence (as defined in 42 USC 283k(c)(2)). These institutions play a special role in advancing biomedical research as they leverage their research abilities to address problems of special relevance or unmet health needs. Often these institutions are in the geographical areas in which deficits in research resources and health-related services/technologies may adversely affect health status of the population. Serving individuals from disadvantaged backgrounds by carrying activities related to training, health services, or biomedical research contributes to protecting health of such populations. Such institutions often serve as centers for dissemination of health information, training development, and advancement of research. At times, low levels of NIH research funding and deficits in physical research infrastructure may curtail the full potential of these efforts.

It is expected that all projects - both from research-intensive institutions and Institutions of Emerging Excellence - will have long-term effect and benefit the broad biomedical research community at the applicant institution by providing a modern research environment, accessible on a shared basis.
Award: Application budgets are not limited, but need to reflect the actual needs of the proposed project. The maximum award budget is $8,000,000. Applications with budget less than $3,000,000 will not be considered. Since the scope of different projects will vary it is anticipated that the size of the awards will vary.
Letter of Intent: February 14, 2020
Deadline: March 17, 2020
All applications are due by 5:00 PM local time of applicant organization.
Applicants are encouraged to apply early to allow adequate time to make any corrections to errors found in the application during the submission process by the due date.

Grant Program: Silvio O. Conte Centers for Basic Neuroscience or Translational Mental Health Research (P50 Clinical Trial Optional)
Agency: National Institutes of Health PAR-20-093

RFP Website: https://grants.nih.gov/grants/guide/pa-files/PAR-20-093.html
Brief Description: The primary purpose of each Conte Center is to support a multidisciplinary team of leading basic neuroscience, translational neuroscience, and/or clinical neuroscience researchers engaged in a highly integrated and focused program directed at a well-defined and unified scientific question (hypothesis) or problem. The institute seeks both basic neuroscience Conte Centers as well as translational Conte Centers. A Conte Center need not include both basic neuroscience and translational research foci. The Conte Centers program continues to seek highly meritorious applications across the full spectrum of basic and translational research supported by the NIMH. Conte Centers should comprise a collaborative, cutting-edge, multidisciplinary research program conducted at multiple levels of analysis that would be difficult to undertake within the confines of a single laboratory or a small-scale collaboration.

The NIMH Strategic Plan was developed to inspire and support research that takes advantage of these recent technological advances and opportunities, and to bring into sharper focus questions and perspectives that will transform the diagnosis, treatment, and prevention of mental disorders. NIMH also encourages projects that address the fundamental mechanisms that cut across current diagnostic categories as outlined in the Research Domain Criteria (RDoC) project.

Potential applicants are also encouraged to consult the report of the National Advisory Mental Health Council (NAMHC) Genomics Workgroup, which makes recommendations for areas of opportunity in genomics research to understand the genetic etiology of mental health disorders. Applicants should also consult NOT-MH-18-058 Notice of Information: NIMH's Interest in Areas of Stress Biology Research which clarifies NIMH's interest in the most rigorous approaches to understanding the impact of stressors on brain and behavior.
Award: Direct costs are limited to $2 million in any one year.
Letter of Intent: 30 days prior to the application due date
Deadline: May 27, 2020, May 26, 2021, May 24, 2022
All applicants are due by 5:00 PM local time of applicant organization. All types of non-AIDS applications allowed for this funding opportunity announcement are due on the listed date(s). Applicants are encouraged to apply corrections to errors found in the application during the submission process by the due date.

Grant Program: NIBIB Trailblazer Award for New and Early Stage Investigators (R21 Clinical Trial Optional)
Agency: National Institutes of Health PAR-20-084
RFP Website: https://grants.nih.gov/grants/guide/pa-files/PAR-20-084.html
Brief Description: A Trailblazer project may be exploratory, developmental, proof of concept or have high risk-high impact goals. Importantly, the proposed research for this FOA may be technology design-directed and may or may not be hypothesis-driven. In the context of this FOA, innovation encompasses approaches to address well-defined, unmet biomedical research needs through the development of new methods, ideas, or technologies; early steps along the path toward delivery of a new capability or method; and the integration of existing components in a previously unproven format. High-impact projects should transform our understanding or practice by applying an innovative approach to an important biomedical challenge. For projects supported by a Trailblazer Award, successful results should provide a solid foundation for further research under other funding mechanisms, such as the R01. Applicants will be considered ineligible for this funding opportunity if they have submitted an R01, R15 or any other R21 application, with NIBIB as the primary IC within the same review cycle. An awardee may not hold concurrent Trailblazer awards. All areas of research germane to the mission of the NIBIB are appropriate for the Trailblazer FOA (https://www.nibib.nih.gov/research-funding).

Trailblazer approaches are expected to differ substantially from current thinking or practice, therefore, extensive preliminary data demonstrating feasibility is an indication that the project is beyond the scope of this FOA. Reviewers' determinations of merit will rely instead on the conceptual framework, the level of innovation, and the potential to significantly advance our knowledge, understanding or practice. Applicants can provide appropriate justification for the proposed work through literature citations, data from other publicly available sources, or analytical and computational models. The proposed research will likely involve considerable risk that the work may not be successful, so applicants should clearly explain the significance of the work to allow the reviewers to determine whether the potential impact justifies these risks.
Award: Application budgets may not exceed $400,000 direct costs over a maximum three-year funding period. No more than $200,000 direct costs may be requested in any single year.
Letter of Intent: Not required
Deadline: Standard dates apply.
All applications are due by 5:00 PM local time of applicant organization. All types of non-AIDS applications allowed for this funding opportunity announcement are due on the listed date(s).
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/AFOSR

Grant Program: FY 2021 Defense University Research Instrumentation Program (DURIP)- AFOSR Submission
FY 2021 Defense University Research Instrumentation Program (DURIP)- ARMY Submission
FY 2021 Defense University Research Instrumentation Program (DURIP)- ONR Submission
Agency: Department of Defense AFOSR: FOA-AFRL-AFOSR-2020-0001
Dept od Army W911NF-20-S-0006
Office of Naval Research FOA-AFRL-AFOSR-2020-0001
Website: https://www.grants.gov/web/grants/search-grants.html
https://www.wpafb.af.mil/Welcome/Fact-Sheets/Display/Article/842111/afosr-funding-opportunities-university-research-initiative-uri/#anchor1
https://www.onr.navy.mil/en/Education-Outreach/Sponsored-Research/University-Research-Initiatives/DURIP
Brief Description: The Department of Defense (DoD) announces the Fiscal Year 2021 Defense University Research Instrumentation Program (DURIP). DURIP is designed to improve the capabilities of accredited United States (U.S.) institutions of higher education to conduct research and to educate scientists and engineers in areas important to national defense, by providing funds for the acquisition of research equipment or instrumentation. For-profit organizations are not eligible for DURIP funding. Proposing institutions should be seeking to purchase instrumentation in support of research areas of interest to the DoD, including areas of research supported by the administering agencies.
Army Research Office at **http://www.aro.army.mil**
Select "Broad Agency Announcements" in the "For the Researcher" section to see the most recent ARL or ARO Core Broad Agency Announcement for Basic and Applied Scientific Research.
Office of Naval Research at http://www.onr.navy.mil/ .
Select "Contracts and Grants" and then "Funding Opportunities" to see the Long Range Broad Agency Announcement for Navy and Marine Corps Science and Technology, BAA N00014-18-S-B001.
Air Force Office of Scientific Research at http://www.wpafb.af.mil/afrl/afosr/

Awards: DURIP funds will be used for the acquisition of major equipment to augment current or develop new research capabilities in support of DoD-relevant research. Proposals may request $50,000 to $1,500,000. Proposals for purely instructional equipment are not eligible. General-purpose computing facilities are not appropriate for DURIP funding, but requests for computers for DoD-relevant research programs are appropriate.
Proposal Deadline: May 15, 2020
Contact Information:
Army Research Office
DR. LARRY RUSSELL, JR.
Phone: (919) 549-4211
E-mail: usarmy.rtp.rdecom-aro.mbx.durip@mail.mil
Office of Naval Research
DR. ELLEN LIVINGSTON
Phone: (703) 696-4668
E-mail: ellen.s.livingston@navy.mil
Air Force Office of Scientific Research
MS. KATIE WISECARVER
Phone: (703) 696-9544
E-mail: durip@us.af.mil

Grant Program: Quantum Information Sciences
Agency: Department of Defense FA8750-20-S-7006
Website:
https://beta.sam.gov/opp/dd6cccb1a9424440b7f0ff1d60ba9b7b/view?keywords=intelligence&sort=-modifiedDate&index=opp&is_active=true&page=1
Brief Description: The Air Force Research Laboratory - Information Directorate (AFRL/RI) is soliciting white papers under this Broad Agency Announcement (BAA) for research, design, development, concept testing, evaluation, experimentation, integration and delivery of Quantum Information Sciences supporting the implementation and use of Command, Control, Communications, Computers & Intelligence (C4I)-related information and communications technologies and techniques. In particular, this effort seeks to advance and assess advanced algorithm designs and technologies harnessing emerging quantum computing techniques to support AFRL/RI's C4I mission.

AFRL/RI has established a Quantum Information and Science branch (RITQ). Research within this branch will include Quantum Algorithms and Computing, Memory-Node-Based Quantum Networking, Quantum Information Processing, Superconducting Hybrid Quantum Platforms, and Quantum Information Sciences. These technologies will have both in-house and contractual based requirements to support the overall mission of the RITQ branch.
Further, AFRL/RI is interested in developing a user community around this emerging technology, to consist of other U.S. Government organizations (federal, state, and local), U.S. Government contractors and commercial industry, and academia (both public and private).
Awards: Various. Total funding for this BAA is approximately $49.9M. Individual awards will not normally exceed 36 months with dollar amounts normally ranging from $0.5M to $2M.
Proposal Deadline: FY21 by 30 Sep 2020; FY22 by 30 Sep 2021
Contact Information: Kristi Mezzano
AFRL/RITQ
Telephone: (315) 330-2448 Email: AFRL.RIT.Quantum@us.af.mil

Grant Program: Synthetic Biology (SynBio) Manufacturing Innovation Institute (MII)
Agency: Department of Defense DEPT OF THE AIR FORCE AFMC FA8650-20-S-5028
Website: https://beta.sam.gov/opp/f87127393cb84157b8da1957ec686d16/view?keywords=FA8650-20-S-5028&sort=-relevance&index=&is_active=true&page=1
Brief Description: The purpose of this Notice of Intent is to announce the U.S. Government's intent to launch a competition for the ninth Manufacturing Innovation Institute (MII) led by the Department of Defense (DoD). The technical focus area for this Institute will be Synthetic Biology. Funding will be commensurate with the other DoD MIIs with similar expectations for cost-share from non-Federal sources of 1:1 or greater. DoD expects to release the formal solicitation in late February 2020. Proposer's Days will follow release of the formal solicitation around mid to late March 2020. The exact date and location will be confirmed in the solicitation release. Synthetic Biology (SynBio) promises to deliver a new class of manufacturing that will provide the United States with domestic capabilities to manufacture critical resources, providing supply chain security. SynBio manufacturing also has the potential to create entirely new classes of products with defense applications, such as chemicals and materials with advanced properties that could be used in austere environments. The combination of defense priorities addressable by SynBio manufacturing and the commercial potential of these innovations in food, agriculture, fuel, pharmaceuticals, and other consumer products, will create new opportunities for U.S. manufacturers.
Awards: TBD
Proposal Deadline: TBD
Contact Information: MARY A. SHARITS, Contracting Officer/Grants & Agreements Officer
AFRL/RXKMC; 2130 8th STREET; WRIGHT PATTERSON AFB, OH 45433-7541
MARY.SHARITS@US.AF.MIL Phone: (937) 713-9898

Grant Program: Department of Defense (DoD) – Science, Technology, Engineering, and Mathematics (STEM) Educational Outreach Programs
Agency: Department of Defense Army Contracting Command - New Jersey W15QKN-20-R-09H5
Website: https://www.grants.gov/web/grants/search-grants.html
Brief Description: The U.S. Army Contracting Command - New Jersey (CCNJ), on behalf of the Army Combat Capabilities Development Command Armaments Center (CCDC AC) seeks to enter into a Grant for a Science, Technology, Engineering and Mathematics (STEM) Outreach Program. This Funding Opportunity Announcement (FOA) is considered a competitive combined synopsis/solicitation, therefore, this announcement constitutes the only synopsis or solicitation that will be released.

The objective of this FOA, which is being issued in accordance with 10 USC §2192, is to seek application packages from Applicants capable of engaging and improving Grades K-12 Plus (to include colleges, universities, and vocational schools) STEM skills through outreach programs and support services on a national level. The requirement for increased STEM professional development is necessary to meet the long term national defense needs of the United States for personnel proficient in such skills.
Awards: Various , Anticipated available funding: $25,000,000
Proposal Deadline: March 10, 2020
Contact Information: Any questions related to this FOA must be directed to the Government point of contact identified below by 4:00pm Eastern time on 28 February 2020:
David Grimes, Grants Specialist, CCNJ-ET, david.m.grimes2.civ@mail.mil
Edward Gorsky, Grants Specialist, CCNJ-ET, Edward.a.gorsky.civ@mail.mil
Morgan Ziatyk, Grants Officer, CCNJ-ET, Morgan.f.ziatyk.civ@mail.mil

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Grant Program: Hydrogen Fuel Cell-Battery Powered Hybrid Emergency Relief Truck: 'H2Rescue'
Agency: Department of Defense Department of Army W81EWF20FOA0001
Website: https://www.grants.gov/web/grants/search-grants.html
Brief Description: This is a joint federal Funding Opportunity Announcement (FOA) for one cooperative agreement award, to be issued by the US Army Corps of Engineers (USACE), Engineer Research and Development Center Construction Engineering Research Laboratory (ERDC-CERL). The effort is supported by the U.S. Department of Energy (DOE) Fuel Cell Technologies Office, the DOE Vehicle Technologies Office, the U.S. Army Futures Command Ground Vehicle Systems Center (GVSC), and the Department of Homeland Security (DHS). Each of these agencies support missions relevant to this announcement, including hydrogen fuel cell-battery powered hybrid vehicle development, emergency response and military operations. The development and deployment of a fuel cell-battery powered hybrid emergency relief truck could ultimately enhance their response capabilities. Expected benefits include clean, quiet operation, load-following microgrid- capable exportable power, water production, and heat. Under this FOA ERDC- CERL is accepting applicants to build, test, and demonstrate a fuel cell-battery powered hybrid emergency relief truck. This FOA is an example of collaboration and coordination among federal agencies, per EPACT 2005, Title VIII on hydrogen.
Awards: Various
Proposal Deadline: March 31, 2020
Contact Information: Rhoda Lewis, Grants Specialist, Contracting Division, Tel: 217-373-4479, Email: Rhoda.A.Lewis@usace.army.mil

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Grant Program: Fiscal Year (FY) 2021 Funding Opportunity Announcement (FOA) for the Office of Naval Research (ONR) Manufacturing Science Program
Agency: Department of Defense Office of Naval Research N00014-20-S-F002
Website: https://www.onr.navy.mil/work-with-us
Brief Description: While the scientific foundations behind most present-day manufacturing technologies have long been established, potential advances in current technologies as well as the development of new manufacturing techniques often require a new scientific knowledge base to provide the foundation for those processes to develop into viable and reliable manufacturing technologies. The Manufacturing Science program addresses the need for fundamental research programs to support these new and novel manufacturing technologies for the Navy. Recent advances in computational modeling capabilities have facilitated the intelligent design of new manufacturing capabilities, the models to predict their performance, and the experimental strategies to best achieve them. These new predictive models can provide powerful benefits for the development of new manufacturing technologies and the capabilities that can be achieved. Program Objectives: The objective of the Manufacturing Science program is to support fundamental scientific research that will help facilitate or enable the advancement/development of manufacturing technologies for Naval components. Research proposals are encouraged to include a modeling component to help direct the research. The focus of the Manufacturing Science program is on Naval manufacturing, preference will be given to Naval-unique or Naval-centric topics.
Awards: Under this Manufacturing Science Program FOA competition, ONR intends to award up to an estimated total value of $650,000.00 subject to the availability of funds. Each individual award will be up to a maximum of $100,000 per year, for a period of one (1), two (2) or three (3) years.
Proposal Deadline: White papers are a MANDATORY component of a two-part submission process.
White Papers Submission: 06 March 2020
Full Proposal: 08 June 2020

Contact Information: Dr. Richard W. Fonda, Manufacturing Science Program Manager, Office of Naval Research, Email: richard.fonda@navy.mil

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Grant Program: NRL Long Range Broad Agency Announcement (BAA) for Basic and Applied Research
Agency: Department of Defense Naval Research Laboratory N00173-19-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/.
Awards: Various
Proposal Deadline: September 05, 2020
Contact Information: Mary A Johnson; Procurement Analyst; Phone 202-767-2021
General Inquiries

Grant Program: Air Superiority Technology Broad Agency Announcement
Agency: Department of Defense FA8651-20-S-0008
Website:
https://www.fbo.gov/index?s=opportunity&mode=form&id=dbdb4a35cb22a4a0d8414b652f0c74bb&tab=core&_cview=0
Brief Description: For purposes of this announcement, research is defined to be scientific study and experimentation directed at increasing knowledge and understanding in relation to long term national security needs. It is an enhancement to related exploratory and advanced development programs. A program should be designed to demonstrate well-defined and substantive research results, should not be overly ambitious or open-ended, and should not be a paper study that inherently requires a substantial testing effort.
RESEARCH AREA 1 – MODELING, SIMULATION, & ANALYSIS (MS&A): The objective of this work is to develop/modify and employ models used to analyze Air Superiority concepts and their related concepts of employment. The objective is to apply, modify and/or combine engineering, engagement (one-on-one), mission (few-on-few), systems-of-systems, campaign (many-on-many, military worth), level modeling techniques, tools, and analysis methods as well as virtual and constructive digital simulation which lend themselves to the quick and effective evaluation of air superiority concepts. Concepts include, but are not limited to, intercommunicative weapons, novel damage mechanisms, lethal and novel destruct mechanisms, multiple targeting, and time critical delivery. Detailed modeling includes, but is not limited to, sensors, aerodynamics, autopilots, navigation and guidance schemes, propulsion,

warheads, fuzes, datalinks, fire control, launcher, suspension, carriage and release, error filters, environment (wind, fog, and dust), lethality, vulnerability, and threats.
RESEARCH AREA 2 – INNOVATIVE AIRCRAFT INTEGRATION TECHNOLOGIES The objective of this work is to design, develop, and demonstrate innovative aircraft integration technologies including but not limited to physical, electrical, and logical interfaces; and other aspects of aircraft integration that may be applicable.
RESEARCH AREA 3 –FIND-FIX-TARGET-TRACK (F2T2) & DATALINK TECHNOLOGIES The objective of this work is to design, develop, and demonstrate innovative Find, Fix, Target, and Track (F2T2) technologies for the detection of threats to aircraft. These F2T2 technologies should provide threat warning, threat characteristics, You Are The One (YATO) or You Are Not The One (YANTO) discrimination, highly accurate threat cueing, range and range rate, and other pertinent information required to analyze and coordinate a response to a threat.
RESEARCH AREA 4 – ENGAGEMENT MANAGEMENT SYSTEM TECHNOLOGIES The objective of this work is to design, develop, and demonstrate an innovative Engagement Management system to maximize aircraft survivability in increasingly contested environments while mining false positives and engagement costs. These technologies should interface with aircraft and other Find-Fix-Target-Track (F2T2) systems, determine the optimum counter measure response(s), respect keep-out or no-fire zones, and make other decisions required for aircraft survivability.
RESEARCH AREA 5 – HIGH VELOCITY FUZING The objective of this work is to design, develop, and demonstrate high velocity fuzing, including both Electronic Safe and Arm (ESAF) technologies that can safely initiate a warhead and Target Detection Devices (TDDs) that can provide miniaturized, fast-responding, highly accurate range and location information for high closure velocity intercepts.
RESEARCH AREA 6 – MISSILE ELECTRONICS The objective of this work is to investigate all aspects of Missile Power & Electronics as it applies to air-toair missiles. The following technologies and research areas are of particular interest: Power Conversion and Distribution, Power Generation and Storage Technologies (Advanced Missile Battery Technology and Ultracapacitors), Guidance Electronics, and Thermal Management.
RESEARCH AREA 7 – MISSILE GUIDANCE AND CONTROL TECHNOLOGIES The objective of this work is to investigate Missile Guidance and Control Technologies to include the following: Robust guidance algorithms against maneuvering targets, real time optimal lofting/energy management techniques, integrated guidance and control, reduced latency between seeker measurements and final control fin commands, highly accurate seeker technologies and algorithms, robust and novel target state estimators, third party queuing, optimal body orientation at endgame encounter, (reinforcement learning-adaptive control) approach, simultaneous learning and control, Hybrid (switched) guidance law selection based on the red-target strategy/maneuver, many-on-many engagement guidance laws, optimal pulse delay and propellant allocation, rapid flexible autopilot design process, robust control in aerodynamic cross coupling environments for various airframe designs from canard to tail control, robust control at high angles of attack, innovative autopilot architectures, efficient verification of safe separation over all flight regimes, Non-linear/adaptive control for agile maneuver, and advanced airframe control techniques.
RESEARCH AREA 8 – ADVANCED WARHEAD TECHNOLOGIES
More areas; Please see the BAA on above website.
Awards: Various
Proposal Deadline: This BAA will remain open through 31 October 2024 or until amended or superseded. It may be reissued and/or amended periodically, as needed.
Contact Information: Technical POC: Mr. David Hartline , AFRL, (850) 882-1324
david.hartline.1@us.af.mil

Grant Program: DSO Office-wide Broad Agency Announcement
Agency: Department of Defense DARPA HR001119S0071
Website: https://www.darpa.mil/work-with-us/opportunities?tFilter=&oFilter=2&sort=date https://www.fbo.gov/index?s=opportunity&mode=form&id=22a346a8b55f0a7040d57a8fbc19e644&tab=core&_cview=1
Brief Description: The mission of the Defense Advanced Research Projects Agency (DARPA) Defense Sciences Office (DSO) is to identify and create the next generation of scientific discovery by pursuing high-risk, high-payoff research initiatives across a broad spectrum of science and engineering disciplines and transforming these initiatives into disruptive technologies for U.S. national security. In support of this mission, the DSO Office-wide BAA invites proposers to submit innovative basic or applied research concepts that address one or more of the following technical domains: (1) Frontiers in Math, Computation and Design, (2) Limits of Sensing and Sensors, (3) Complex Social Systems, and (4) Anticipating Surprise. Each of these domains is described below and includes a list of example research topics that highlight several (but not all) potential areas of interest. Proposals must investigate innovative approaches that enable revolutionary advances. DSO is explicitly not interested in approaches or technologies that primarily result in evolutionary improvements to the existing state of practice.
Awards: The total award value for the combined Phase 1 base and Phase 2 option is limited to $1,000,000. This total award value includes Government funding and performer cost share (if required).
Proposal Deadline: Executive Summary Due Date: June 12, 2020, 4:00 p.m. o Abstract Due Date: June 12, 2020, 4:00 p.m. o Full Proposal Due Date: June 12, 2020, 4:00 p.m.
Contact Information: BAA Email: HR001119S0071@darpa.mil

Department of Transportation

Grant Program: FY 2020 National Infrastructure Investments
Agency: Department of Transportation DTOS59-20-RA-BUILD
Website: https://www.transportation.gov/BUILDgrants/apply
Brief Description: Activities eligible for funding under BUILD Transportation planning grants are related to the planning, preparation, or design—including environmental analysis, feasibility studies, and other pre-construction activities—of eligible surface transportation capital projects described in Section C.3. (a). In addition, eligible activities related to multidisciplinary projects or regional planning may include: (1) Development of master plans, comprehensive plans, or corridor plans; (2) Planning activities related to the development of a multimodal freight corridor, including those that seek to reduce conflicts with residential areas and with passenger and non-motorized traffic; (3) Development of port and regional port planning grants, including State-wide or multi-port planning within a single jurisdiction or region; (4) Risk assessments and planning to identify vulnerabilities and address the transportation system's ability to withstand probable occurrence or recurrence of an emergency or major disaster.
Awards: The FY 2020 Appropriations Act specifies that BUILD Transportation grants may not be less than $5 million and not greater than $25 million, except that for projects located in rural areas (as defined in Section C.4.(a)) the minimum award size is $1 million. There is no minimum award size, regardless of location, for BUILD Transportation planning grants. Applicants are strongly encouraged to submit applications only for eligible award amounts.
Proposal Deadline: May 18, 2020 at 5:00pm Eastern Time.
Contact Information: For further information, please contact the BUILD Transportation grants program staff via e-mail at BUILDgrants@dot.gov, or call Howard Hill at 202-366-0301.

Department of Agriculture:

Grant Program: Scientific and Cooperative Research Program
Agency: Department of Agriculture USDA-FAS-10961-0700-10-20-0001
Website: https://www.grants.gov/web/grants/search-grants.html
Brief Description: The United States Department of Agriculture's (USDA) Foreign Agricultural Service (FAS) announces the availability of funding through cost reimbursable agreements for the Scientific Cooperation Research Program (SCRP) for fiscal year (FY) 2020.
SCRP will support applied research, extension, and education projects — lasting up to two years between U.S. researchers and researchers from selected emerging market economies - that create practical solutions to challenges faced by small farmers and build regional or global trade capacities in FAS countries. In general, applications should support one or more of the following strategies of the Global Food Security Act (Public Law No: 114-195):
1.Accelerate inclusive, agricultural-led economic growth that reduces global poverty, hunger, and malnutrition, particularly among women and children.
2.Increase the productivity, incomes, and livelihoods of small-scale producers, especially women, by working across agricultural value chains, enhancing local capacity to manage agricultural resources effectively, and expanding producer access to local and international markets.
3.Build resilience to food shocks among vulnerable populations and households while reducing reliance upon emergency food assistance.
4.Create an enabling environment for agricultural growth and investment, including through the promotion of secure and transparent property rights.
5.Improve the nutritional status of women and children, with a focus on reducing child stunting, including through the promotion of highly nutritious foods, diet diversification, and nutritional behaviors that improve maternal and child health;
6.Align with and leverage broader United States strategies and investments in trade, economic growth, science and technology, agricultural research and extension, maternal and child health, nutrition, and water, sanitation, and hygiene.
Awards: $500,000 total (up to $50,000 per award)
Proposal Deadline: Application Submission Deadline: March 2, 2020
Contact Information: Sintayehu Assefa Phone: +1-202-720-2200 Email: SINTAYEHU.ASSEFA@USDA.GOV

Grant Program: Biotechnology Risk Assessment Grants Program
Agency: Department of Agriculture USDA-NIFA-BRAP-007072
Website: https://nifa.usda.gov/funding-opportunity/biotechnology-risk-assessment-research-grants-program-brag
Brief Description: The purpose of the BRAG program is to support the generation of new information that will assist Federal regulatory agencies in making science-based decisions about the effects of introducing into the environment genetically engineered organisms (GE), including plants, microorganisms — such as fungi, bacteria, and viruses — arthropods, fish, birds, mammals and other animals excluding humans. Investigations of effects on both managed and natural environments are relevant. The BRAG program accomplishes its purpose by providing federal regulatory agencies with scientific information relevant to regulatory issues. See the Request for Applications (RFA) for details. View the Centers of Excellence (COE) webpage to access a factsheet on the COE designation process, including COE criteria, and a list of programs offering COE opportunities.
Awards: Up to $500,000; Anticipated available funding: $4,500,000

Proposal Deadline: Mar 18, 2020 FY 2020: March 18, 2020 FY 2021: February 24, 2021 Letter of Intent Deadline: February 12, 2020; January 21, 2021 Note: Letter of Intent encouraged but not required
Contact Information: Dr. Lakshmi Matukumalli lakskhmi.matukumalli@usda.gov (816)-926-1189

Grant Program: Agriculture and Food Research Initiative - Foundational and Applied Science
Agency: Department of Agriculture USDA-NIFA-AFRI-007052
Website: https://nifa.usda.gov/funding-opportunity/agriculture-and-food-research-initiative-foundational-applied-science-program
Brief Description: The AFRI Foundational and Applied Science Program supports grants in six AFRI priority areas to advance knowledge in both fundamental and applied sciences important to agriculture. The six priority areas are: Plant Health and Production and Plant Products; Animal Health and Production and Animal Products; Food Safety, Nutrition, and Health; Bioenergy, Natural Resources, and Environment; Agriculture Systems and Technology; and Agriculture Economics and Rural Communities. Research-only, extension-only, and integrated research, education and/or extension projects are solicited in this Request for Applications (RFA). See Foundational and Applied Science RFA for specific details.
Awards: Anticipated Funding: $192,600,000
Submission Deadline: Agricultural Innovation through Gene Editing - Letter of Intent required
Letter of Intent Deadline - February 19, 2020
Agricultural Microbiomes - Letter of Intent required
Letter of Intent Deadline - March 10, 2020
Tactical Sciences for Agricultural Biosecurity - Letter of Intent required
Letter of Intent Deadline - March 10, 2020
All Conference Grants - Letter of Intent required
Letter of Intent Deadline - Minimum of 135 days before the conference begins
Application Deadline Dates: Dates vary by program area priority
Contact: Technical Contact: Dr. Louis Tupas, Deputy Director, Institute of Bioenergy, Climate, and Environment Telephone: (202) 401-5022 Fax: (202) 401-6488 E-mail: AFRI@nifa.usda.gov

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Grant Program: REAP-Renewable Energy Systems and Energy Efficiency Improvements
Agency: Department of Agriculture RDBCP-11-REAP-RES-EEI-2020
Website: https://www.govinfo.gov/content/pkg/FR-2019-08-30/pdf/2019-18825.pdf
Brief Description: Eligible applicants are agricultural producers and rural small businesses. All agricultural producers, including farmers and ranchers, who gain 50% or more of their gross income from the agricultural operations are eligible. Small businesses that are located in a rural area can also apply. Rural electric cooperatives may also be eligible to apply. Additional Information on Eligibility:Citizenship - To be eligible, applicants must be individuals or entities at least 51 percent owned by persons who are either: 1) citizens of the United States (U.S.),the Republic of Palau, the Federated States of Micronesia, the Republic of the Marshall Islands, or American Samoa; or 2) legally admitted permanent residents residing in the U.S.Project - The project must be to conduct a feasibility study for a renewable energy system. Eligible technologies include: projects that produce energy from wind, solar, biomass, geothermal, hydro power and hydrogen-based sources.
Awards: Up to $500,000; Anticipated Funding: $70 million
Submission Deadline: September 30, 2020
Contact: Technical Contact: Maureen Hessel, Energy Specialist, Phone 202-401-0142

Department of Labor

Grant Program: Apprenticeships: Closing the Skills Gap
Agency: Department of Labor FOA-ETA-19-09
Website: https://www.grants.gov/web/grants/search-grants.html
Brief Description: Building on the experience abroad and in the United States, apprenticeships have emerged as a proven skills instruction model to meet industry's demand for a skilled American workforce. As the 21st economy requires greater skills development with an estimated 65 percent jobs of all jobs requiring some post-secondary education by 2020,1 apprenticeship programs can bolster the employability and technical skills of workers while meeting the workforce needs of business and industry.

There are more than 7.1 million job openings right now in the United States,3 many of which require a skilled workforce. These include in-demand cybersecurity professions and emerging occupations involving artificial intelligence (AI) across several industry sectors. Expanding apprenticeships can help individuals gain the skills necessary to fill these vacancies and help employers find skilled workers more readily. The period of performance is 48 months with an anticipated start date of February 1, 2020.

The purpose of this grant program is to promote apprenticeships as a significant workforce solution in filling current job vacancies and closing the skills gap between employer workforce needs and the skills of the current workforce. The overarching goals of this grant program are threefold: (1) to accelerate the expansion of apprenticeships to industry sectors and occupations that have not traditionally deployed apprenticeships for building a skilled workforce, such as cybersecurity, artificial intelligence, and health care; (2) to promote the large-scale expansion of apprenticeships across the nation to a range of employers, including small and medium-sized employers; and (3) to increase apprenticeship opportunities for all Americans. Recognizing that apprenticeship is a training strategy that operates on both the supply side and the demand side of the labor market, this grant program aims to increase both the number of apprenticeship positions and the ability of all Americans to gain access to this proven pathway to family-sustaining careers.
Awards: We will award up to $100 million in H-1B funds initially to fund approximately 16 to 30 apprenticeship grants, with awards ranging from $500,000 to $6 million.
Anticipated Funding: $100,000,000
Proposal Deadline: September 24, 2019 no later than 4:00:00 p.m. Eastern Time. Passed: FYI
Contact Information: Denise Roach Grants Management Specialist roach.denise@dol.gov

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EPA

Grant Program: Community-Scale Air Toxics Ambient Monitoring
Agency: Environmental Protection Agency EPA-OAR-OAQPS-20-05
Website: https://www.epa.gov/grants/community-scale-air-toxics-ambient-monitoring
Brief Description: EPA's Office of Air and Radiation (OAR) is soliciting applications from eligible entities for projects designed to assist state, local, and tribal air agencies in identifying and characterizing air toxics, also known as hazardous air pollutants (HAPs), through work that falls into one of four categories. Those categories are: 1) characterizing the impacts of air toxics in a community (community-scale monitoring); 2) assessing impacts of toxics emissions from specific sources (near-source monitoring); 3) evaluating new and emerging testing methods for air toxics; and, 4) analyzing existing air toxics data and developing or enhancing analytical, modeling, and/or implementation tools. Air toxics of particular interest to EPA in this solicitation include ethylene oxide, chloroprene, benzene, 1,3-butadiene,

and metals such as hexavalent chromium, nickel, and arsenic. The total estimated funding for this competitive opportunity is approximately $5,000,000. EPA anticipates awarding approximately 10 to 20 assistance agreements from this announcement, subject to the availability of funds, the quality of applications received, and other applicable considerations.
EPA will hold two information sessions on the 2020 competition February 19 and 20, 2020. Information about the sessions is available on the Community-Scale Air Toxics Ambient Monitoring website.
Award: Up to $750,000 per award; Anticipated available funding: $5,000,000
Submission Deadline: March 30, 2020
Contact: Nealson Watkins, watkins.nealson@epa.gov

Grant Program: FY2020 National Environmental Information Exchange Network Grant Program
Agency: Environmental Protection Agency EPA-OMS-20-01
Website: https://www.epa.gov/exchangenetwork/fy-2020-exchange-network-grant-solicitation-notice
Brief Description: The EPA Exchange Network Grant Program is soliciting project applications using the Environmental Information Exchange Network (EN) to:

- Facilitate sharing of environmental data, especially through shared and reusable services.
- Streamline data collection and exchanges to improve its timeliness for decision making.
- Increase the quality and access to environmental data through discovery, publishing, outbound and analytical services so it is more useful to environmental managers.
- Develop foundational EN shared services to reduce burden and avoid costs for co-regulators and the regulated community.
- Expand and improve participation in the EN by strengthening the requisite information management and technology capabilities for interested parties to fully participate in the EN.

Award: In FY 2020, EPA expects to award about $8,000,000 for 20-30 assistance agreements of up to $400,000 each.
Submission Deadline: March 25, 2020
Contact: Erika Beasley, Office of Information Management, Phone: (202) 566-2530 beasley.erika@epa.gov

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Grant Program: FY 2020 – FY 2021 Pollution Prevention Grant Program
Agency: Environmental Protection Agency
Website: https://www.epa.gov/sites/production/files/2020-01/documents/bfy_20-21_p2_grant_rfa_final.pdf
Brief Description: EPA is announcing a grant competition to fund two-year Pollution Prevention assistance agreements for projects that provide technical assistance (e.g., information, training, tools) to businesses and their facilities to help them develop and adopt source reduction practices (also known as "pollution prevention" or "P2"). P2 means reducing or eliminating pollutants from entering any waste stream or otherwise being released into the environment prior to recycling, treatment, or disposal. In keeping with the Pollution Prevention Act of 1990, EPA is encouraging P2 because implementing these practices can result in reductions in toxic pollutants, the use of water, energy and other raw materials, while also lowering business costs. States, state entities, federally-recognized tribes and intertribal consortia are eligible to apply.
Award: It is anticipated that EPA may award a total of approximately $9.38 million in federal P2 grant funding over a two-year funding period ($4.69 million in FY 2020 funds and approximately $4.69 million in FY 2021 funds based on anticipated FY 2021 funding which is not guaranteed and may

change). Individual grant awards may potentially be in the range of $40,000- $500,000 for the two-year funding period (between $20,000 - $250,000 incrementally funded per year).
Submission Deadline: March 31, 2020
Contact: Michele Amhaz, 202-564-8857 amhaz.michele@epa.gov

Department of Energy

Grant Program: Notice of Intent to Issue Funding Opportunity Announcement No. DE-FOA-0002206 Connected Communities
Agency: Department of Energy DE-FOA-0002249
Website: https://eere-exchange.energy.gov/#FoaIdc01275fc-af09-43e7-a96b-86ccb83cb88a
Brief Description: The Office of Energy Efficiency and Renewable Energy (EERE) intends to issue, on behalf of the Building Technologies Office (BTO), a Funding Opportunity Announcement (FOA) entitled "Connected Communities." The goal of this planned FOA would be to demonstrate the ability of efficient buildings to interact with the grid to provide demand flexibility. This includes the ability to shift and modulate load in both existing and new communities across diverse climates, geography, building types and grid/regulatory structures, while maintaining (if not enhancing) occupant satisfaction and productivity. This builds on BTO's current Grid-Interactive Efficient Buildings (GEB) work. Improving the energy efficiency and demand flexibility of buildings alleviates pressure on the electric grid and extends our energy resources.
Awards: Various; Estimated Total Program Funding: $42,000,000
Letter of Intent: N/A
Proposal Submission Deadline: N/A
Contact: Erika S. Gupta erika.gupta@ee.doe.gov

Grant Program: Solar Energy Technologies Office Fiscal Year 2020 Funding Program
Agency: Department of Energy DE-FOA-0002243
Website: https://eere-exchange.energy.gov/Default.aspx#FoaIdc8e280d2-b7bf-4138-810b-cad9ba1541ac
Brief Description: This funding opportunity announcement (FOA) is being issued by the U.S. Department of Energy's (DOE) Office of Energy Efficiency and Renewable Energy (EERE) Solar Energy Technologies Office (SETO). SETO supports solar energy research and development (R&D) in three technology areas—photovoltaics (PV), concentrating solar-thermal power (CSP), and systems integration—with the goal of improving the affordability, reliability, and performance of solar technologies on the grid. This section describes the overall goals of the Solar Energy Technologies Office Fiscal Year 2020 (SETO 2020) funding program and the types of projects being solicited for funding support through this FOA. The SETO 2020 funding program seeks to advance R&D of solar technologies that reduce the cost of solar, increase the competitiveness of American manufacturing and businesses, and improve the reliability of the grid. These projects will advance R&D in PV, CSP, and energy management technologies, while also working to improve cybersecurity, expand solar to new applications like agricultural solar, integrate solar and storage, and utilize artificial intelligence to address research challenges.
Informational webinars: February 12, 2020, at 2 PM Eastern Standard Time https://doe.webex.com/doe/onstage/g.php?MTID=e61dc56501622ba9e5a4429e90e70794d
Awards: Various; Estimated Total Program Funding: $125,500,000
Letter of Intent: Required by 3/9/2020 5:00 PM ET

Proposal Submission Deadline:

- Concept Paper Submission Deadline: 3/16/2020 5:00 PM ET
- Full Application Submission Deadline: 5/21/2020 5:00 PM ET

Contact: seto.foa@ee.doe.gov For questions regarding this FOA

Grant Program: FY20 Bioenergy Technologies Multi-Topic FOA
Agency: Department of Energy DE-FOA-0002203
Website: https://eere-exchange.energy.gov/#FoaId23bcb339-aa53-4821-9421-d109747cb168
Brief Description: This FOA will provide funding to address BETO's highest priority R&D areas. It includes Topic Areas from five BETO programs: Feedstock Supply and Logistics; Advanced Algal Systems; Conversion Technologies; Advanced Development and Optimization; and Strategic Analysis and Crosscutting Sustainability. Each Topic Area supports BETO's objectives to reduce the minimum selling price of drop-in biofuels, lower the cost of biopower, and enable high-value products from biomass or waste resources.
Under this funding opportunity, BETO is interested in the following topic areas:
Topic 1: Scale Up of Bench Applications (SCUBA)
Topic 2: Waste to Energy Strategies for the Bioeconomy
Topic 3: Algae Bioproducts and CO_2 Direct-Air-Capture Efficiency (ABCDE)
Topic 4: Bio-Restore: Biomass to Restore Natural Resources
Topic 5: Efficient Wood Heaters
Topice 6: Biopower and Products from Urban and Suburban Wastes: North American Multi-University Partnership for Research and Education
Topic 7: Scalable CO_2 Electrocatalysis
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.
Awards: DOE anticipates that the total value of awards over a five-year project period made under this FOA will be between $100 million and $625 million, subject to the availability of future year appropriations.
Proposal Submission Deadline: Concept Paper Submission Deadline: 3/5/2020 5:00 PM ET

- Full Application Submission Deadline: 4/30/2020 5:00 PM ET

Contact: eXCHANGE helpdesk for assistance (exchangehelp@hq.doe.gov).

NASA

Grant Program: ROSES 2020: Heliophysics Supporting Research
Agency: NASA NNH20ZDA001N-HSR
Website: https://nspires.nasaprs.com/external/solicitations/summary.do?solId=%7BBA3F017B-32B1-74F1-3DC5-0DC78AA76DB9%7D&path=&method=init
Brief Description: Heliophysics Supporting Research (SR) awards are research investigations of significant magnitude that employ a combination of scientific techniques. These must include an element of (a) theory, numerical simulation, or modeling, and an element of (b) data analysis and interpretation of NASA-spacecraft observations. HSR is a component of the Heliophysics Research Program and proposers interested in this program element are encouraged to see B.1, The Heliophysics Research

Program Overview for Heliophysics-specific requirements. Common requirements for all ROSES elements and proposals are found in the ROSES Summary of Solicitation and the Proposer's Guidebook and the order of precedence for proposers.
Awards: Various; Available funding: $6.500.000
Notices of Intent Due: N/A
Proposal Deadline: November 18, 2020
Contact: Patrick Koehn; Email: patrick.koehn@nasa.gov

Grant Program: ROSES 2020: Astrophysics Data Analysis
Agency: NASA NNH20ZDA001N-ADAP
Website: https://nspires.nasaprs.com/external/solicitations/summary.do?solId=%7BEC4AFCE9-78E3-7164-00DC-5D3E325B4EA1%7D&path=&method=init
Brief Description: Over the years, NASA has invested heavily in the development and execution of an extensive array of space astrophysics missions. The magnitude and scope of the archival data from those missions enables science that transcends traditional wavelength regimes and allows researchers to answer questions that would be difficult, if not impossible, to address through an individual observing program. To capitalize on this invaluable asset and enhance the scientific return on NASA mission investments, this Astrophysics Data Analysis Program (ADAP) program in ROSES provides support for investigations whose focus is on the analysis of archival data from NASA space astrophysics missions.
Awards: Various; Available funding: $7,000,000
Notices of Intent Due: N/S
Proposal Deadline: March 19, 2020
Contact: Douglas M. Hudgins; Email: Douglas.M.Hudgins@nasa.gov

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Grant Program: HELIOPHYSICS - Early Career Investigator Program
Agency: NASA NNH20ZDA001N-ECIP
Website: https://nspires.nasaprs.com/external/solicitations/summary.do?solId=%7BBC6756FD-561A-B7A1-F68A-2A18E6851701%7D&path=&method=init
Brief Description: The Early Career Investigator Program (ECIP) in Heliophysics is designed to support outstanding scientific research and career development of scientists at the early stage of their professional careers. The program aims to encourage innovative research initiatives and cultivate diverse scientific leadership in Heliophysics. This program is designed to foster the empowerment, inspiration, and education of the next generation of space researchers, as part of the E of the DRIVE (Diversify, Realize, Integrate, Venture, Educate) initiative put forward as a high priority recommendation of the 2013 Solar and Space Physics Decadal Survey.
Awards: Various, Available funding: $1,500,000
Notices of Intent Due: N/A
Proposal Deadline: August 12, 2020
Contact: Katya Verner, Telephone: 202-358-1213 Email: Ekaterina.M.Verner@nasa.gov

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Grant Program: ROSES 2020: Astrophysics Research and Analysis
Agency: NASA NNH20ZDA001N-APRA
Website: https://nspires.nasaprs.com/external/solicitations/summary.do?solId=%7BD4C56B9D-7FF4-D128-D82D-6BB8F4306D00%7D&path=&method=init

Brief Description: The Astrophysics Research and Analysis Program (APRA) program solicits basic research proposals for investigations that are relevant to NASA's programs in astronomy and astrophysics and includes research over the entire range of photons, gravitational waves, and particle astrophysics. Awards may be for up to four years' duration (up to five years for suborbital investigations), but shorter-term proposals are typical; four-year or five-year proposals must be well justified. Proposals for suborbital investigations are particularly encouraged. APRA investigations may advance technologies anywhere along the full line of readiness levels, from Technology Readiness Level (TRL) 1 through TRL 9. The emphasis of this program element is on technologies and investigations that advance NASA astrophysics missions and goals.
Awards: Various
Notices of Intent Due: N/A
Proposal Deadline: December 17, 2020
Contact: Dominic J. Benford Astrophysics Division, Telephone: (202) 358-1261 Email: Dominic.Benford@nasa.gov

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Grant Program: Early Career Faculty
Agency: NASA 80HQTR20NOA01-20ECF-B1
Website: https://nspires.nasaprs.com/external/solicitations/summary.do?solId=%7BACAD5344-C2D1-8304-D57E-2FE90D346946%7D&path=&method=init
Brief Description: The STRG Program within STMD is fostering the development of innovative, low-TRL technologies for advanced space systems and space technology. The goal of this lowTRL endeavor is to accelerate the development of groundbreaking, high-risk/high-payoff space technologies, not necessarily directed at a specific mission, to support the future space science and exploration needs of NASA, other government agencies, and the commercial space sector. Such efforts complement the other NASA Mission Directorates' focused technology activities which typically begin at TRL 3 or higher. The starting TRL of the efforts to be funded as a result of this Appendix will be TRL 1 or TRL 2; typical end TRLs will be TRL 2 or TRL 3. See Attachment 2 of the NRA for TRL descriptions.

This Appendix seeks proposals to develop unique, disruptive, or transformational space technologies that have the potential to lead to dramatic improvements at the system level — performance, weight, cost, reliability, operational simplicity, or other figures of merit associated with space flight hardware or missions. Although progress under an award may be incremental, the projected impact at the system level must be substantial and clearly defined.
Awards: $200K/per year for maximum 3 years
Notices of Intent Due: February 26, 2020
Proposal Deadline: March 25, 2020
Contact: Claudia Meyer Space Technology Research Grants Program Executive hq-ecf-call@mail.nasa.gov

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Grant Program: ROSES 2019: Sustainable Land Imaging-Technology
Agency: NASA NNH19ZDA001N-SLIT
Website: https://nspires.nasaprs.com/external/solicitations/summary.do?solId=%7B628D67E6-7DF9-6DE8-B052-940659BC37F4%7D&path=&method=init
Brief Description: The aim of the Sustainable Land Imaging-Technology (SLI-T) program is to develop next-generation technology for a long-term programmatically sustainable system that as a minimum continues the historical measurement capability, and potentially improves this capability. Technology

developed under this program will be considered for infusion over the lifetime of the program as a potential contributing element of the long-term sustainable program.
Awards: Various; Available funding: $1,250,000
Proposal Deadline: April 07, 2020; Pre-proposal deadline may be earlier. Please check with program officer.
Contact: Prospective proposers are requested to submit any questions in writing to sachidananda.r.babu@nasa.gov no later than 30 days before the proposal due date.

National Endowment of Humanities

Grant Program: Fellowships
Agency: National Endowment for the Humanities 20200408-FEL
Website: https://www.neh.gov/grants/research/fellowships
Brief Description: NEH Fellowships are competitive awards granted to individual scholars pursuing projects that embody exceptional research, rigorous analysis, and clear writing. Applications must clearly articulate a project's value to humanities scholars, general audiences, or both.
Fellowships provide recipients time to conduct research or to produce books, monographs, peer-reviewed articles, e-books, digital materials, translations with annotations or a critical apparatus, or critical editions resulting from previous research. Projects may be at any stage of development.
NEH invites research applications from scholars in all disciplines, and it encourages submissions from independent scholars and junior scholars.
Awards: Maximum award amount: $60,000
Deadlines: April 8, 2020
Contact: Contact the Division of Research Programs Team 202-606-8200 fellowships@neh.gov

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Arnold and Mabel Beckman Foundation

Grant Program: Beckman Scholar Program
Agency: Arnold and Mabel Beckman Foundation
Website: https://beckman-foundation.smapply.io/prog/beckman_scholars_program/
Brief Description: The purpose of the Beckman Scholars Program is to help stimulate, encourage and support research activities by exceptionally talented, full-time undergraduate students who are pursuing their studies at accredited four-year colleges and universities located in the United States of America. These research activities shall be centered in either chemistry, biochemistry, the biological and medical sciences or some interdisciplinary combination of these subjects. Candidates for the Beckman Scholars Award must be full-time students throughout the duration of the award.
The research activities performed by Beckman Scholars shall be conducted under the guidance of a full-time, approved faculty member at the college or university receiving an award. Research activities must be performed part-time (ten hours per week) during one academic year, and full-time over two summers (ten 40-hour weeks each summer) immediately before and after the academic year research experience.
Awards: Each Institutional Award spans a three-year period, with 1-3 student/mentor teams selected by the institution each year depending on its Carnegie Classification. The amount of funding for the Beckman Scholars Program is $26,000; $21,000 specifically for the Scholar and $5,000 for the Scholar's Mentor.

The Program's financial support, in conjunction with the Annual Beckman Symposium, offers an academically stimulating and unique educational experience.
Deadlines: June 15, 2020
Contact: Please contact Richard Rosenberg at rmr@njit.edu if you are interested in submitting a proposal.

Streamlyne Question of the Week

Question: How can I update my eRA Commons ID for all future NIH proposals?
Answer: Go to Main Menu>Setting>Person Extended Attributes, click "Edit", enter it under "eRA Commons User Name" and submit the change/update.

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

Proposal Submission and Streamlyne Information

Internal Timeline for Successful and Timely Proposal Submission

The NJIT Proposal Submission Guidelines and Policy posted on the website https://research.njit.edu/research-policies provides the institutional timeline in order to help faculty and staff Principal Investigators for successful proposal submission. We are requesting all Principal Investigators, faculty, staff and administration to follow the proposal submission to help everyone to submit a successful proposal on time, preferably before the deadline as requested by federal funding agencies. The following are the NJIT Proposal Submission Guidelines modified for Straemlyne proposal submission system:

- **1 month (or earlier) before the due date**: initiate the proposal submission process in Streamlyne with a notice of intent to apply to college POC and SRA including the request for proposal identification number (NSF, NIH) and/or the RFP document. This is an important step that will help the College POC and SRA to manage your proposals. It will allow:
    - preliminary review of needs and sponsor requirements (meeting recommended)
    - set up the timeline in motion and internal checklist/deadlines
    - collaborator outreach and intake requirements (where applicable)
    - set up the budget and Streamlyne document development process including any cost-sharing for consideration of department, college and office of research administration.
- **1 month - 2 weeks before due date:** the budget should be finalized and the approval process should be initiated**.** This includes the department and college approvals, conflict of interest forms, the detailed budget and justification, proposal title, and preliminary specific aims (NIH), proposal summary (NSF), or contract scope of work (SOW). The following checklist should be followed:
    - Proposal budget
        - Internal budget commitments such as cost-sharing should be fully calculated/loaded at this time. Any college specific internal process for index source and approvals should be followed within this timeline.
    - Complete initial proposal details and internal Streamlyne information
    - Complete Streamlyne questionnaires
        - Proposal specific
        - Sponsor specific (as applicable for grants.gov for S2S submission)

    - Complete special review disclosures (as applicable)
        - IRB/human subjects
        - Biosafety
        - Animals
        - Export Controls
        - Conflict of Interest
- **2 weeks - 1 week before the due date:** submit all required internal attachments including:
    - Project Summary/Statement of Work
    - Final Budget
    - Budget Justification
    - For S2S Proposals – Complete additional input of placeholder attachments.
    - Submit in Streamlyne and monitor routing/review by key personnel and department/college administration.
- **72 hours – 24 hours before the submission deadline:** Prepare the final version for submission. The following actions will be managed during this period.
    - All final technical documents/attachments are completed and validated in internal and/or sponsor system(s).
    - Central Office completes final review and coordination with PI and College POC on final proposal review, validation of system requirements and engages in sponsor actions and submission.
    - Central office completes internal data and archiving procedures and coordinates follow-up
- **At least 24 hours before the submission deadline:** The PI should release the final version of the proposal to the SRA office at least 24 hours prior to the deadline for on-time submission.

For a successful submission, it is expected that faculty/PIs will follow up with the designated point-of-contact (ambassadors) for their college in a timely manner so that appropriate planning steps can be managed with respect to the proposal complexity, scope of support, any special needs such as cost-sharing, and multiple submission volume with the same due date. The following are the respective college point-of-contacts (ambassadors)

NCE: John McCarthy, NCE Director of Research; (973) 596-3247; john.p.mccarthy@njit.edu
NCE: Deidra Slough, Grant Management Specialist, (973)-596-3428; deidra.l.slough@njit.edu
CSLA: Cristo Leon, CSLA Director of Research; (973) 596-6426; cristo.e.yanezleon@njit.edu
CSTR: Felicia Margolies, Project Manager, (973)-596-5377 felicia.h.margolies@njit.edu
YWCC: Sean Andrews, YWCC Director of Research; (973) 596-5352; sean.t.andrews@njit.edu
HCoAD and MTSM: Interim POC: Justin Samolewicz, Director (Pre Award); (973)-596-3145; justin.m.samolewicz@njit.edu**; Iris Pantoja**, Project Manager; 973-596-4483; irp3@njit.edu (on maternity leave)
NJII and T&BD: **Bobby J. Vadasserril**; (973)-596-2941; bobby.j.vadasserril@njit.edu

Faculty and staff having any questions on proposal submission, may contact their college point-of-contacts (ambassadors), and also follow up with **Justin Samolewicz, Director (Pre Award)** 973-596-3145; justin.m.samolewicz@njit.edu; and **Eric Hetherington,** Executive Director, Sponsored Research Programs Administration 973-596-3631; eric.d.hetherington@njit.edu as needed.

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.

Need Information about Funding?

Finding Research Opportunities and Collaborations (FROC)
***Walk-In* Open-Hour Discussion with SVPR Over Tea**
Every Thursday: 2.00 PM-3.00 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.
