

NJIT Research Newsletter

Issue: ORN-2021-30

NJIT Research Newsletter includes recent awards, and announcements of research related seminars, webinars, national and federal research news related to research funding, and **Grant Opportunity Alerts** (with links to sections). The Newsletter is posted on the NJIT Research Website <https://research.njit.edu/funding-opportunities> .

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Special Announcements

Congratulations to Dr. James F. Innovation Awards Winners! 2021 NJIT URI Undergraduate Summer Research and Innovation Symposium

The 2021 NJIT Undergraduate Summer Research and Innovation Symposium integrated with the Innovation Day was held on July 29-30, 2021. The symposium featured the distinguished keynote talk from Daniel Henderson followed by URI External Advisory Board (EAB) panel to pay a tribute to Dr. James F. Stevenson, recognizing his great contributions and support to the IDS, TechQuest Innovation, and URI programs. One hundred and thirty-four (134) undergraduate students presented 108 projects with their summer research work before the in-person and virtual audience including URI External Advisory Board, faculty and students. About 200 faculty, students and staff members attended the symposium in-person over two days in Ballroom and Atrium at the Campus Center.

The symposium also featured the inauguration of the National Academy of Inventors (NAI) Chapter at NJIT on July 30 from 11.00 AM - 12.30 PM with live streaming on the YouTube. Thirty-two (32) faculty members were inducted as the inventor member to the NAI. In addition, 9 administrators and technology innovation supporters will be inducted as honorary members. The inaugural ceremony featured the keynote talk by Ms. Elizabeth Dougherty, Eastern Regional Outreach Director, U.S. Patent and Trademark Office (USPTO), and a member of the NAI Board of Directors. The video recording of the NAI Chapter at NJIT Inauguration and Induction Ceremony is available on the YouTube website at <https://youtu.be/kpndnId3Tu8>.

The URI External Advisory Board judged all 108 excellent presentations and selected three top project presentations for Dr. James F. Stevenson Innovation Awards Prizes and 5 Honorable Mentions, one from each of the five research cluster areas: Bioscience and Bioengineering, Data Science and Management, Environment and Sustainability, Material Science and Engineering, and Robotics and Machine Intelligence and Architecture and Design. The following awards with trophies were presented to the winners by Mrs. Steffi Stevenson at the Award Ceremony on July 30, 2021.

2021 Dr. James F. Stevenson Innovation Award Winners

Dr. James F. Stevenson Innovation Award: First Prize (\$1,000)

Name: Simone Bishara

Department: Biochemistry

Project Title: Observing Compressive Strength of Fibrin Hydrogels of Varying Concentrations

Faculty Advisor: Jonathan Grasman

URI Program: McNair Scholar Program

Dr. James F. Stevenson Innovation Award: Second Prize (\$750)

Name: Sreya Sanyal

Department: Biology & History

Project Title: Opsonization of SARS-CoV-2 to develop a COVID-19 antiviral

Faculty Advisor: Vivek Kumar

URI Program: URI Provost Summer Research Fellowship Program

Dr. James F. Stevenson Innovation Award: Third Prize (\$500)

Name: Joseph Schaedler

Department: Computer Science

Project Title: Blockchain- enabled Standardized Testing Design

Faculty Advisor: Jasmine Chang

URI Program: URI Provost Summer Research Fellowship Program

Dr. James F. Stevenson Innovation Award: Honorable Mention - Bioscience and Bioengineering

Name: Nishita Vootukuru

Department: Biochemistry

Project Title: Effects of Osteopontin on Cardiomyocytes as Related to Myocardial Infarction

Faculty Advisor: Alice Lee
URI Program: Honors College Summer Research Program

Dr. James F. Stevenson Innovation Award: Honorable Mention - Data Science and Management (\$100)

Name: Wara Laura
Department: Computer science
Project Title: Social Media Misinformation in COVID-19
Faculty Advisor: Cody Buntain
URI Program: NSF Research Experience of Undergraduate (REU) Program for Computational Data Analytics

Dr. James F. Stevenson Innovation Award: Honorable Mention - Environment and Sustainability (\$100)

Name: Jeffrey Luk
Department: Biology
Project Title: Inactivation of MS2 Bacteriophage for Water Disinfection via Microwave Irradiation in the presence of Microwave-Adsorbing Catalysts
Faculty Advisor: Wen Zhang
URI Program: URI Provost Summer Research Fellowship Program

Dr. James F. Stevenson Innovation Award: Honorable Mention - Material Science and Engineering (\$100)

Name: Christopher Leong
Department: Physics
Project Title: Uncooled Mid-wavelength Infrared Photoconductive Photodetectors Based on Silver Selenide Colloidal Quantum Dot
Faculty Advisor: Dong Ko
URI Program: NSF Research Experience of Undergraduate (REU) Program for Optics and Photonics

Dr. James F. Stevenson Innovation Award: Honorable Mention - Architecture and Design, and Robotics and Machine Intelligence (\$100)

Name: Elizabeth Kowalchuk
Department: Architecture
Project Title: Bauhaus Medievalism: Gropius' Medieval Ideals and their Manifestation in Bauhaus Pedagogy
Faculty Advisor: Louis Hamilton
URI Program: URI Provost Summer Research Fellowship Program

Congratulations to all student winners and their faculty advisors!

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[Grant Opportunity Alerts](#)

Keywords and Areas Included in the Grant Opportunity Alert Section Below

NSF: Graduate Research Fellowship Program (GRFP); Division of Materials Research: Topical Materials Research Programs (DMR:TMRP); Advancing Informal STEM Learning (AISL); Advanced Technological Education (ATE); Secure and Trustworthy Cyberspace Frontiers (SaTC Frontiers)

NIH: Clinical and Translational Science Award (UM1); Investigator Initiated Research in Computational Genomics and Data Science (R01); NINDS Research Education Opportunities (R25); BRAIN Initiative Cell Atlas Network (BICAN): Coordinating Unit for Biostatistics, Informatics, and Engagement (CUBIE) (U24); NIAID Research Education Program Advancing the Careers of a Diverse Research Workforce (R25); Research Education Course in Product Development and Entrepreneurship for Life Science Researchers (UE5); Transformative Artificial Intelligence and Machine Learning Based Strategies to Identify Determinants of Exceptional Health and Life Span (R21/R33)

Department of Defense/US Army/DARPA/ONR: National Defense Education Program (NDEP) Science, Technology, Engineering, and Mathematics (STEM) Consortia Request for Information (RFI); Environmental Microbes as a BioEngineering Resource (EMBER); Morphogenic Interfaces (MINT); Chronic Pain Management, Investigator-Initiated Research Award; Defense Sciences Office Office-wide; Research Interests of the Air Force Office of Scientific Research

Department of Transportation: DDETFP Transportation Fellowship Program; High Priority Program – Innovative Technology Deployment (HP-ITD)

Department of Agriculture: Agriculture and Food Research Initiative - Foundational and Applied Science

Department of Labor: State Apprenticeship Expansion, Equity and Innovation (SAEEI) Grant Program

Department of Commerce/EDA: American Rescue Plan Act (ARPA) Statewide Planning, Research, and Networks; Climate Program Office FY2022; Manufacturing USA Technology Roadmap (MfgTech) Grant Program; Oceanic and Atmospheric Research (OAR); FY2021 to FY2023 NOAA Broad Agency Announcement (BAA)

EPA: FY22 Brownfields Job Training Grants; Water Innovation, Science, Engagement to Advance Water Reuse

Department of Energy: Advanced Manufacturing Office Multi-Topic FOA; Request for Information on Establishing a New Manufacturing Institute; Notice of Intent to Issue Funding Opportunity Announcement No. DE-FOA-0002543 Advanced Building Construction (ABC) - 2021; Assisting Federal Facilities with Energy Conservation Technologies (AFFECT)

NASA: ROSES 2021: Advanced Information Systems Technology; ROSES 2021: Living With a Star Strategic Capability; Technology Advancement Utilizing Suborbital Flight Opportunities "Tech Flights"; ROSES 2021: Living With a Star Science

National Endowment of Humanities: Humanities Connections; Fellowship Programs at Independent Research Institutions

Private Foundations: Special Funding Program: Israel-US Fund for Clean-Energy Joint Research

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[Recent Research Grant and Contract Awards](#)

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

PI: James B. Holbrook (PI) and Atam P. Dhawan (Co-PI)

Department: Humanities and Social Sciences, Research

Grant/Contract Project Title: Collaborative Research: Project Incubation - New Jersey Institute of Technology Campus Alignment Review of Ethics

Funding Agency: NSF

Duration: 11/01/21-10/31/22

PI: Zuofeng Shang (PI)

Department: Mathematical Sciences

Grant/Contract Project Title: CDS&E: Collaborative Research: Scalable Nonparametric Learning for Massive Data with Statistical Guarantees

Funding Agency: NSF

Duration: 11/13/19-07/31/22

PI: Kamallesh K. Sirkar (PI) and Boris Khusid (Co-PI)

Department: Chemical and Material Engineering

Grant/Contract Project Title: Phase II IUCRC at New Jersey Institute of Technology: Center for Membrane Science, Engineering and Technology (MAST)

Funding Agency: NSF

Duration: 07/01/18-06/30/23

PI: Wen Zhang (PI)

Department: Civil and Environmental Engineering

Grant/Contract Project Title: Interfacially Engineered Membranes for Simultaneous Microwave Catalysis and Liquid Filtration

Funding Agency: NSF

Duration: 09/01/20-08/31/23

PI: Wenda Cao (PI)

Department: Center for Solar Terrestrial Research

Grant/Contract Project Title: Collaborative Research in Solar Physics between KASI, SNU, and BBSO

Funding Agency: KASI

Duration: 06/01/14-05/31/24

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[In the News...](#)

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

House Passes Spending Bills With Big Boosts for Agencies: The House this week approved Democrats' spending bills for fiscal 2022, advancing measures that would significantly boost funding for federal

agencies but have little chance of becoming law in their current form. On Wednesday, the chamber passed appropriations bills to fund the State Department, the U.S. Agency for International Development and related agencies, as well as the legislative branch, without any Republican backing. A package of measures to fund the departments of Labor, Health and Human Services, Education, Agriculture, Energy, Treasury, Interior, Transportation, Housing and Urban Development, and Veterans Affairs, among other agencies, passed on Thursday. The spending bills largely mirror requests made by the White House to provide an overall 16% funding increase to non-defense agencies.

The Senate Appropriations Committee has yet to release or move any of the 12 annual spending bills. An aide to Sen. Patrick Leahy, D-Vt., the panel's chairman, said the committee plans to mark up its first three bills—Agriculture, Energy and Water, and Military Construction and Veterans Affairs—next week. With current spending set to expire Sept. 30 and the Senate set to recess in August, advancing bipartisan bills to President Biden's desk prior to the deadline appears impossible. Some members of Senate leadership have already indicated a stopgap continuing resolution will be necessary to avoid a government shutdown on Oct. 1.

The House has now passed nine of the 12 annual spending bills, with only the measures for the departments of Defense, Homeland Security, and Commerce and Justice outstanding.

Commerce Secretary Highlights Cybersecurity Workforce Needs With \$3B Initiative: A new economic development initiative at the Commerce Department's Economic Development Administration will address challenges companies face filling cybersecurity vacancies and other positions requiring digital skills, according to Commerce Secretary Gina Raimondo. "What I hear all the time from companies [is], 'we are ready to hire, but people need to have the skills, they need digital skills, cybersecurity skills, data skills, cloud computing skills,'" Raimondo said. "And so that's what we have to get at the business of."

Raimondo announced [the initiative](#) during a White House press briefing Thursday where she also emphasized the importance equity will play in deciding who wins access to \$3 billion in funding being made available through the American Rescue Plan Act. "There's a skills gap, and that's why we put so much money of this \$3 billion—you know, half a billion of the \$3 billion—is just for skills development, apprenticeships, high-quality job training," she said. "And by the way, we need to make sure that women and people of color and people in rural areas have those digital skills so they can get those good jobs, so that's what this is about and that's what I hear most often from companies." Private companies themselves will not be eligible to receive any of the funding. The money will go to state and local governments, colleges and universities, non-profits, tribes and unions whose applications lay out the best plans for achieving equity. More information is posted on the [NextGov website](#).

NASA Turns to Edge Computing to Protect ISS Astronauts from Contamination: Edge computing refers to an information technology architecture that enables data to be processed as close to its originating source as possible—even those beyond planet Earth.

Using containerized, analytic code where data for a complex DNA sequencing project is produced on the International Space Station, NASA intends to eliminate the need to transport massive amounts of information from space and cut the time it takes to process it from weeks to hours.

"This is a huge paradigm shift that's absolutely critical for us to be able to expand our exploration" to the moon and Mars, Johnson Space Center Microbiologist Sarah Wallace said during Think Gov 2021.

At the Houston-based center, Wallace works to help protect astronauts from any microbial contamination or dangers from microorganisms in space. Since the inception of the ISS, scientists have analyzed and sequences the DNA of microbes in air, water and surface samples astronauts collect. This helps ensure they were safe from space-based fungi or bacteria. Wallace confirmed that in the beginning,

it would take a while to receive the petri dish cultures back on Earth. More information is posted on the [NextGov website](#).

Fiscal Year 2022 House Health and Human Services, Education, and Related Agencies Appropriations Bill:

U.S. Department of Health and Human Services (HHS)

- Topline: \$119.8 billion, an increase of \$22.9 billion above the FY21 enacted level and \$129 million below the President's budget.
- National Institutes of Health (NIH): \$49.4 billion, an increase of \$6.5 billion above the FY21 enacted level, and \$2.3 billion less than the President's budget.
 - Advanced Research Projects Agency for Health (ARPA-H): \$3 billion, \$3.5 billion less than the President's budget, establish ARPA-H to accelerate the pace of scientific breakthroughs for diseases such as ALS, Alzheimer's disease, diabetes, and cancer.
 - Existing NIH Institutes and Centers: \$3.5 billion, which supports an increase of no less than 5% for each Institute and Center to support a wide range of biomedical and behavioral research, as well as targeted investments in several high-priority areas
- Agency for Healthcare Research and Quality (AHRQ): \$380 million, an increase of \$42 million above the FY21 enacted level.

U.S. Department of Labor (DOL)

- Topline: \$14.7 billion in discretionary funding, an increase of \$2.2 billion above the FY21 enacted level and \$400 million above the President's budget.
- Employment and Training Administration: \$11.6 billion, an increase of \$1.6 billion above the FY21 enacted level and \$371.2 million above the President's budget.
- Apprenticeship Grants: \$285 million, \$100 million above the FY21 level and the same at the President's budget.

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Webinar and Events

Event: Summer 2021: IRES Virtual Office Hours

Sponsor: NSF

When: August 2, 2021 11:30 AM to 12:30 PM; August 9, 2021 11:30 AM to 12:30 PM; August 16, 2021 11:30 AM to 12:30 PM; August 23, 2021 11:30 AM to 12:30 PM; August 30, 2021 11:30 AM to 12:30 PM; September 6, 2021 11:30 AM to 12:30 PM; September 13, 2021 11:30 AM to 12:30 PM

Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=303056&org=NSF

Brief Description: The IRES Program Team is hosting a series of Virtual Office Hours aimed at giving potential PIs an opportunity to ask questions. We will be holding one session per week for 9 weeks, starting July 19 and ending on September 13, during which any questions about the program can be asked and discussed. Session dates and times are outlined below. Please feel free to attend the session which best fits your schedule.

To Join the Webinar: Session zoom link is the same for all session: <https://nsf.zoomgov.com/j/1609964836?pwd=VXpGRTBpZXIxY0hYNGdFWVlyUWp1Zz09>

Event: Germination Program Webinar

Sponsor: NSF

When: August 2, 2021 1:00 PM to 2:00 PM

Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=303070&org=NSF

Brief Description: NSF is providing information on GERMINATION: Germination of Research Questions for Addressing Critical Societal Challenges (solicitation NSF 21-594) in a webinar on Monday, August 2, 2021, starting at 1:00 PM Eastern time.

The GERMINATION program supports the design of pedagogical frameworks, platforms, and/or environments that increase the ability of academic researchers in STEM fields to conceive research ideas and questions with potentially transformative outcomes.

The webinar will include a briefing on the GERMINATION program and key solicitation requirements followed by a question and answer session.

The [GERMINATION program summary and solicitation](#) are available for review.

To Join the Webinar: Advance registration is required for this Zoom webinar. Register at https://nsf.zoomgov.com/webinar/register/WN_7-SIyqBARluh94Vz8hPtWQ

Event: NSF Research Traineeship Program Webinar

Sponsor: NSF

When: August 9, 2021; 2.00 PM – 3.00 PM

Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=303138&org=NSF

Brief Description: The [NSF Research Traineeship Program](#) seeks proposals that explore ways for graduate students in research-based master's and doctoral degree programs to develop the skills, knowledge and competencies needed to pursue a range of STEM careers. The program is dedicated to the effective training of STEM graduate students in high priority interdisciplinary or convergent research areas, through a comprehensive traineeship model that is innovative, evidence-based and aligned with changing workforce and research needs.

Researchers, administrative staff and others in the social, behavioral and economic sciences community are encouraged to attend.

Featured speakers include Social, Behavioral and Economic Sciences Deputy Assistant Director Kellina Craig-Henderson, and NSF program directors Wenda Bauchspies, Daniel Denecke, and Vinod Lohani.

To Join the Webinar: Attendees will have an opportunity to ask questions during a live Q&A session.

- Registration is required. See [webinar registration page](#).
- Real-time captions will be available during the meeting. See [webinar captions page](#).
- A video, presentation slides, and published Q&A will be available after the event for those unable to attend the live presentations.

Event: DMS Virtual Office Hours

Sponsor: NSF

When: August 19, 2021 3:30 PM to 3.30 PM

Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=303161&org=NSF

Brief Description: The Division of Mathematical Sciences (DMS) is hosting virtual office hours to share information about NSF's current operations and provide guidance to the mathematical sciences community. This will also allow the community to ask questions, share concerns, or offer suggestions on how DMS can do more to address the impact of COVID-19 on the research community. All members of the mathematics research community interested in the work of DMS are welcome to attend.

To Join the Webinar: Participants should register (and may do so in advance) at the web page https://nsf.zoomgov.com/webinar/register/WN_SGWXyK14SJyoAV2lcVNxWg

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Grant Opportunities

National Science Foundation

Grant Program: Competition for the Management of Operations and Maintenance of the National Ecological Observatory Network (NEON)

Agency: National Science Foundation NSF 21-603

RFP Website: <https://www.nsf.gov/pubs/2021/nsf21603/nsf21603.htm>

Brief Description: NSF solicits proposals to manage the operations and maintenance of the National Ecological Observatory Network (NEON), an NSF-funded major facility project. NEON comprises terrestrial, aquatic, atmospheric, and remote sensing measurement infrastructure and cyberinfrastructure that deliver standardized, calibrated data to the scientific community through an openly accessible data portal. NEON infrastructure is geographically distributed across the United States, including Alaska, Hawaii and Puerto Rico, and will generate data for ecological research over a 30-year period. NEON is designed to enable the research community to ask and address their own questions on a regional to continental scale around the environmental challenges identified as relevant to understanding the drivers and impacts of climate change, land-use change and invasive species patterns on the biosphere. The NSF NEON program, which is part of the Centers, Facilities and Additional Research Infrastructure (CFARI) Cluster in the Division of Biological Infrastructure, manages the NEON award in collaboration with the NSF Large Facilities Office and the NSF Division of Acquisition and Cooperative Support.

Awards: Cooperative Agreement; Anticipated Funding Amount: \$69,000,000

Limit on Number of Proposals per Organization: 1

Letters of Intent: Required by October 01, 2021

Full Proposal Submission Deadline: January 31, 2022

Contacts: Roland P. Roberts, Cognizant Program Officer, telephone: (703) 292-7884, email: neon-bot@nsf.gov

- Montona Futrell-Griggs, Staff Associate, telephone: (703) 292-7162, email: neon-bot@nsf.gov
- Charlotte Roehm, Program Officer, telephone: (703) 292-8470, email: neon-bot@nsf.gov

Grant Program: Graduate Research Fellowship Program (GRFP)

Agency: National Science Foundation NSF 21-602

RFP Website: <https://www.nsf.gov/pubs/2021/nsf21602/nsf21602.htm>

Brief Description: The purpose of the NSF Graduate Research Fellowship Program (GRFP) is to help ensure the quality, vitality, and diversity of the scientific and engineering workforce of the United States. The program recognizes and supports outstanding graduate students who are pursuing full-time research-based master's and doctoral degrees in science, technology, engineering, and mathematics (STEM) or in STEM education. The GRFP provides three years of support over a five-year fellowship period for the graduate education of individuals who have demonstrated their potential for significant research achievements in STEM or STEM education. NSF actively encourages women, persons who are members of groups historically underrepresented in STEM, persons with disabilities, veterans, and undergraduate seniors to apply.

Awards: Fellowship; Anticipated Funding Amount: \$138,000

Letters of Intent: Not Required

Full Proposal Submission Deadline:

October 18, 2021: Life Sciences

October 19, 2021: Computer and Information Science and Engineering, Materials Research, Psychology, Social Sciences, STEM Education and Learning

October 21, 2021: Engineering

October 22, 2021: Chemistry, Geosciences, Mathematical Sciences, Physics and Astronomy

Contacts: GRF Operations Center, telephone: (866) 673-4737, email: info@nsfgrfp.org

Grant Program: Division of Materials Research: Topical Materials Research Programs (DMR:TMRP)

Agency: National Science Foundation NSF 21-600

RFP Website: <https://www.nsf.gov/pubs/2021/nsf21600/nsf21600.htm>

Brief Description: Materials Research is the field of science where physics, chemistry, materials science, and engineering naturally converge in the pursuit of the fundamental understanding of the properties of materials and the phenomena they host. Materials are abundant and pervasive, serving as critical building blocks in technology and innovation. Materials Research impacts life and society, as it shapes our understanding of the material world and enables significant advances spanning the range from nanoelectronics to health-related fields. The development and deployment of advanced materials are major drivers of U.S. economic growth.

Research supported by the Division of Materials Research (DMR) focuses on advancing the fundamental understanding of materials, materials discovery, design, synthesis, characterization, properties, and materials-related phenomena. DMR awards enable understanding of the electronic, atomic, and molecular structures, mechanisms, and processes that govern nanoscale to macroscale morphology and properties; manipulation and control of these properties; discovery of emerging phenomena of matter and materials; and creation of novel design, synthesis, and processing strategies that lead to new materials with unique characteristics. These discoveries and advancements transcend traditional scientific and engineering disciplines. DMR supports research and education activities in the United States through funding of individual investigators, teams, centers, facilities, and instrumentation. Projects supported by DMR are not only essential for the development of future technologies and industries that address societal needs, but also for the preparation of the next generation of materials researchers.

Awards: Standard or Continuing Grants; Anticipated Funding Amount: \$66,000,000

Letters of Intent: Not Required

Full Proposal Submission Deadline: Proposals Accepted Anytime; After October 15th, 2021

Contacts: Steve Smith, Program Director, DMR/BMAT, telephone: (703) 292-8158, email: sjsmith@nsf.gov

- Lynnette D. Madsen, Program Director DMR/CER, telephone: (703) 292-4936, email: lmadsen@nsf.gov
 - Tomasz Durakiewicz, Program Director, DMR/CMP, telephone: (703) 292-4892, email: tdurakie@nsf.gov
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Grant Program: Advancing Informal STEM Learning (AISL)

Agency: National Science Foundation NSF 21-599

RFP Website: <https://www.nsf.gov/pubs/2021/nsf21599/nsf21599.htm>

Brief Description: The **Advancing Informal STEM Learning (AISL)** program seeks to advance new approaches to and evidence-based understanding of the design and development of STEM learning opportunities for the public in informal environments; provide multiple pathways for broadening access to and engagement in STEM learning experiences; advance innovative research on and assessment

of STEM learning in informal environments; and engage the public of all ages in learning STEM in informal environments.

The AISL program supports six types of projects: (1) Pilots and Feasibility Studies, (2) Research in Service to Practice, (3) Innovations in Development, (4) Broad Implementation, (5) Literature Reviews, Syntheses, or Meta-Analyses, and (6) Conferences.

Awards: Standard Grant or Continuing Grant; Anticipated Funding Amount: \$32,000,000 to \$44,000,000

Letters of Intent: Not Required

Full Proposal Submission Deadline: January 18, 2022

Contacts: Address Questions to the Program, telephone: (703)292-8616, email: DRLAISL@nsf.gov

Grant Program: Advanced Technological Education (ATE)

Agency: National Science Foundation NSF 21-598

RFP Website: <https://www.nsf.gov/pubs/2021/nsf21598/nsf21598.htm>

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

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

- the National Institute of Standards and Technology (NIST) Manufacturing Extension Partnerships (MEPs) (<http://www.nist.gov/mep/index.cfm>) as applicable to support technician education programs and the industries they serve;
- Manufacturing USA Institutes (<https://manufacturing.gov/>) addressing workforce development issues (also see DCL [NSF 16-007](#)); and
- NSF Industry University Cooperative Research Centers Program (I/UCRC) awardees (<https://www.nsf.gov/eng/iip/iucrc/>) (also see DCL [NSF 21-076](#)).

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

Awards Standard Grant or Continuing Grant; Anticipated Funding Amount: \$75,000,000

Letters of Intent: Not Required

Full Proposal Submission Deadline: October 14, 2021; October 06, 2022; October 05, 2023

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

- Pushpa Ramakrishna, telephone: (703) 292-2943, email: pusramak@nsf.gov
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Grant Program: Secure and Trustworthy Cyberspace Frontiers (SaTC Frontiers)**Agency: National Science Foundation NSF 21-597****RFP Website:** <https://www.nsf.gov/pubs/2021/nsf21597/nsf21597.htm>

Brief Description: The Secure and Trustworthy Cyberspace (SaTC) program welcomes proposals that address cybersecurity and privacy, and draw on expertise in one or more of these areas: computing, communication and information sciences; engineering; economics; education; mathematics; statistics; and social and behavioral sciences. Proposals that advance the field of cybersecurity and privacy within a single discipline or interdisciplinary efforts that span multiple disciplines are both encouraged. Please see the SaTC program solicitation ([NSF 21-500](#)) for more details.

Through this solicitation—under the SaTC umbrella—NSF specifically seeks ambitious and potentially transformative center-scale projects in the area of cybersecurity and privacy that (1) catalyze far-reaching research explorations motivated by deep scientific questions or hard problems and/or by compelling applications and novel technologies that promise significant scientific and/or societal benefits, and (2) stimulate significant research and education outcomes that, through effective knowledge transfer mechanisms, promise scientific, economic and/or other societal benefits. The goal of the SaTC Frontiers program is to advance the frontiers of cybersecurity and privacy, and the areas listed in the SaTC program solicitation ([NSF 21-500](#)) are meant to be illustrative but not exhaustive.

Awards: Continuing Grants; Anticipated Funding Amount: \$15,000,000

The SaTC Frontiers program will support proposals from \$5,000,000 to \$10,000,000 in total budget, with durations of up to five years.

Letters of Intent: Required by September 07, 2021**Full Proposal Submission Deadline:** November 17, 2021**Contacts:** Jeremy Epstein, Program Director, CISE/CNS, telephone: (703) 292-8950, email: jepstein@nsf.gov

- Nina Amla, Program Director, CISE/CCF, telephone: (703) 292-7991, email: namla@nsf.gov
- Robert Beverly, Program Director, CISE/OAC, telephone: (703) 292-7068, email: rbeverly@nsf.gov

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[National Institutes of Health](#)**Grant Program: Clinical and Translational Science Award (UM1 Clinical Trial Optional)****Agency: National Institutes of Health PAR-21-293****Website:** <https://grants.nih.gov/grants/guide/pa-files/PAR-21-293.html>

Brief Description: ‘Translation’ is defined by NCATS as the process of turning observations in the laboratory, clinic and community into interventions that improve the health of individuals and communities – from diagnostics, preventions, and treatments to medical procedures and behavioral changes. ‘Translational research’ (TR) is defined by NCATS as the endeavor to traverse a particular step of the translational process for a particular target or disease. ‘Translational science’ (TS) is the field of investigation focused on understanding the scientific and operational principles underlying each step of the translational process. Whereas translational research focuses on the specific case of a target or disease, translational science is focused on the general case that applies to any target or disease; advances in translational science are the focus of this FOA. A key tenet of translational science is to understand common causes of inefficiency and failure in translational research projects (e.g., incorrect predictions of the toxicity or efficacy of new drugs, lack of data interoperability, ineffective clinical trial recruitment). Many of these causes are the same across targets, diseases, and therapeutic areas; therefore, advances in

translational science will increase the efficiency and effectiveness of translational research to enhance health, lengthen life, and reduce the burdens of illness and disability. Like any other science, translational science seeks to elucidate general operative principles to transform translation from an empirical, phenomenological process into a predictive science. The application of scientific and operational innovation and strategies to improve the efficiency and effectiveness of all research is at the heart of developing, demonstrating, and disseminating the science of translation.

NCATS amended the CTSA Program goals in response to the recent feedback and the maturation of the existing CTSA Program and will use a variety of mechanisms to achieve these goals, including this UMI FOA and other training and research opportunities.

1. Advance CTS: develop, demonstrate, and disseminate scientific and operational innovations that improve the efficiency and effectiveness of clinical translation from identification to first-in-human studies to medical practice implementation to community health dissemination
2. Promote partnerships and collaborations to facilitate and accelerate translational research projects locally, regionally, and nationally
3. Create, provide, and disseminate innovative research programs and partnerships across institutions and communities to address health disparities and deliver the benefits of translational science to all
4. Create and implement scientific and operational innovations that increase the quality, safety, efficiency, effectiveness, and informativeness of clinical research
5. Provide a national resource for the rapid response to urgent public health needs
6. Create, provide, and disseminate CTS training programs for clinical research professionals of all disciplines on the research team
7. Create, provide, and disseminate CTS training and career support programs for translational scientists
8. Foster the development of the emerging field of translational science

Award: The amount of funding that applicants can request depends on the amount of NIH funding they receive.

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

Proposal Deadline: January 26, 2022, May 13, 2022, September 16, 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. No late applications will be accepted for this Funding Opportunity Announcement.

Contact: Erica Rosemond, Ph.D., National Center for Advancing Translational Sciences (NCATS), Telephone: 301-594-8927, Email: CTSAFOAQuestions@mail.nih.gov

Grant Program: Investigator Initiated Research in Computational Genomics and Data Science (R01 Clinical Trial Not Allowed)

Agency: National Institutes of Health PAR-21-254

Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-21-254.html>

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

The following are examples of the types of research studies that may be appropriate for this FOA; applicants are encouraged to propose creative and innovative research topics that go beyond the examples listed here. Research topics appropriate for this FOA may include development of novel computational, bioinformatics, statistical, or analytical approaches, tools, or software, for:

- Processing or analyzing new genomic data types
- Improving efficiency and scalability of compute-intensive genomic applications
- Interactively analyzing or visualizing large genomic data sets
- Causal statistical modeling related to genomic research
- Machine learning and AI methods for genomics, including creating interpretable models
- Supporting ‘plain language’ genomics queries of literature, data, and knowledge resources
- Integrating in vitro cellular data and model organism data with human genomic data
- Integrating and interpreting multiple genomic data types including sequence, functional, phenotypic, clinical, and single-cell or sub-cellular data
- Processing and integrating genome sequence data to enhance representation of population variation
- Identifying or prioritizing genetic variants that may be relevant to human disease
- Enhancing secure sharing and use of genomic data in combination with clinical data
- Integrating genomic based workflows and frameworks into Electronic Health Records to improve clinical decision support in health IT systems
- Genomic based computational models and workflows mitigating inherent and pervasive biases that interfere with the meaningful and beneficial use of genomics in clinical care
- Interfacing between Electronic Health Records, genomic data, and laboratory information systems

NHGRI also invites applications that improve, validate, make robust, or scale existing genomic software and tools (refinement and hardening) to enable reproducible use by the biomedical research community, including:

- Processing sequence data for sequence assembly, variant detection (SNPs and SVs), imputation, and resolution of haplotypes for both variant interpretation and clinical recommendations
- Enabling scalable and cost-effective curation of FAIR metadata for genomic and phenotypic data,
- Significantly improving visualization capabilities of existing software and tools
- Rigorous benchmarking of tools, methods, or algorithms for genomics

Award: Application budgets are limited to \$500,000 in direct costs and need to reflect the actual needs of the proposed project.

Letter of Intent: Not Applicable

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

Contact: Daniel Gilchrist, Ph.D., National Human Genome Research Institute (NHGRI), Email: Daniel.Gilchrist@nih.gov

Grant Program: NINDS Research Education Opportunities (R25 Clinical Trial Not Allowed)

Agency: National Institutes of Health PAR-21-256

Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-21-256.html>

Brief Description: NINDS considers a limited number of targeted, outstanding research education programs to be invaluable to the furtherance of its mission. Educational programs in all areas of research (basic, clinical and translational) are eligible. Programs must provide a critical educational experience not already available at a local or national level. Moreover, programs should provide research education that could not be provided at a local level. These research education programs would be expected to bring together national and international leaders in a field, or multiple fields, to provide intellectual, technical, theoretical and practical knowledge to participants and thus promote the conduct of cutting-edge scientific inquiry. In general, programs should focus on advanced education in a field, which will allow participants to excel in their research endeavors. These research education programs might be narrowly focused on a specific research area, to provide a broad and deep understanding of, and practical experience required for, that specific research area. Alternatively, these programs may be applicable to many research areas, but focus on developing expertise in classes of new technologies, experimental and/or analytical approaches.

Regardless of focus, to be competitive, programs submitted to this FOA must comply with the following:

- Programs must center on immersive, practical, hands-on activities, integrated with activities to provide an understanding of theoretical aspects of the subject. Thus, the core of the course must involve “doing,” not simply listening. Lectures and/or discussion should be used to provide context, education and theoretical framework that guides the hands-on activities.
- Programs must include well-designed components that will instill in the participants a keen understanding of the principles of rigorous study design, data analysis and transparent reporting (see the NIH guidance on rigor and reproducibility in grant applications: <https://grants.nih.gov/reproducibility/index.htm> and related materials: <https://www.ninds.nih.gov/Current-Research/Trans-Agency-Activities/RigorAndReproducibility>), as well as directly address scientific practices that help to avoid unconscious bias in experimentation, analysis and interpretation of data.
- Programs must include discussions on how to identify and navigate ethical issues and questions associated with the program’s neuroscience research and/or research education goals.
- Programs must be designed for, and available to, a national audience. Programs intended for a local or regional audience are not appropriate for this FOA.

Award: Application budgets are limited to a maximum of \$250,000 direct cost per year and need to reflect the actual needs of the proposed project.

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

Proposal Deadline: August 30, 2021, July 14, 2022, July 13, 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. No late applications will be accepted for this Funding Opportunity Announcement.

Contact: Stephen Korn, Ph.D., National Institutes of Neurological Disorders and Stroke (NINDS), Telephone: 301-496-4188, Email: korns@ninds.nih.gov

Grant Program: BRAIN Initiative Cell Atlas Network (BICAN): Coordinating Unit for Biostatistics, Informatics, and Engagement (CUBIE) (U24 Clinical Trial Not Allowed)

Agency: National Institutes of Health RFA-MH-21-237

Website: <https://grants.nih.gov/grants/guide/rfa-files/RFA-MH-21-237.html>

Brief Description: The [BRAIN 2025](#) Report envisioned a systematic census of neuronal and glial cell types in multiple mammalian species. The NIH BRAIN Initiative has implemented this vision by successfully completing a 3-year pilot phase (2014-2017), followed by launching a 5-year phase 2 (2017-2022) BRAIN Initiative Cell Census Network (BICCN) with an emphasis on the mouse brain. The BICCN has applied a set of advanced single-cell approaches to characterizing molecular signatures, anatomical phenotypes, and functional properties of brain cell types, and rapidly disseminated the cell census data to the public. The BICCN is on track to complete a comprehensive cell census spanning the entire adult mouse brain, as well as to set the stage for large-scale cell atlas research in human and non-human primate (NHP) brains. Advances in single-cell transcriptomic and epigenomic profiling, anatomical mapping at cellular resolution, and other approaches have proven to be powerful and scalable. At this time, the BRAIN Initiative Cell Census Program is looking to establish the BICAN to broaden and deepen the systematic cell census and atlas efforts with a new emphasis on human brain. This FOA and the companion announcements intend to establish a network of projects that will work cooperatively to:

- generate comprehensive and high-resolution brain cell atlases that encompass molecular, anatomical, and functional annotations of brain cell types (neurons, glia, and other non-neuronal cells) across the lifespan in human and other species, thereby providing a framework to enable both basic neuroscience and brain disorders-focused research;
- develop and use leading-edge scalable technologies and multi-modal assays to enhance the capability and capacity of large-scale brain cell atlas research;
- coordinate and collaborate across and beyond the BRAIN Initiative toward establishing a broadly accessible data ecosystem for brain cell types and circuits.

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

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

Proposal Deadline: November 09, 2021

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

Contact: Yong Yao, Ph.D.; National Institute of Mental Health (NIMH); Telephone: 301-443-6102
Email: yyao@mail.nih.gov

Grant Program: NIAID Research Education Program Advancing the Careers of a Diverse Research Workforce (R25 Clinical Trial Not Allowed)

Agency: National Institutes of Health PAR-21-258

Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-21-258.html>

Brief Description: Promoting diversity in the extramural scientific workforce is critical to the success of the NIH mission and is consistent with the [mandates of the 21st Century Cures Act](#). While scientific workforce diversity supports the NIH mission, expanding the pool of research investigators from nationally underrepresented backgrounds in the biomedical workforce remains an elusive goal. The NIH has a longstanding commitment to training the next generation of biomedical scientists and supporting training of students from diverse backgrounds, for example groups underrepresented in biomedical research, through a variety of fellowships, career development awards, and institutional training. In spite of recent advances, individuals from certain groups and backgrounds are underrepresented in the biomedical sciences research workforce as described in the [Notice of NIH's Interest in Diversity](#).

The severity of the underrepresentation of these groups increases throughout the training stages. For example, students from certain racial and ethnic groups, including Blacks or African Americans, Hispanics or Latinos/Latinas, American Indians or Alaska Natives, Native Hawaiians and other Pacific Islanders comprise approximately 39 percent of the college population, but earn approximately only 17 percent of bachelor's degrees, and 13 percent of doctoral degrees in the life sciences. Additionally, while the U.S. has seen a significant increase in the number of Ph.D. degrees in the biomedical sciences earned by scientists from historically underrepresented racial and ethnic groups in the biomedical research workforce, a corresponding increase in the ranks of the faculty in basic science departments has not occurred. In 2006, individuals from backgrounds underrepresented in the biomedical sciences constituted approximately 25% of the U.S. population, and 15% of recent medical graduates, but only 7.5% of full-time medical faculty. Over time, these rates also have remained stagnant. In 2020, individuals from underrepresented backgrounds represented approximately 33% of the U.S. population and 13% of recent medical graduates, but only 7.3% of full-time medical faculty. Active interventions are necessary to prevent the loss of talent at each level of educational advancement.

Award: Application budgets are limited to \$325,000 direct costs per year, and must reflect the actual needs of the proposed project.

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

Proposal Deadline: September 10, 2021; January 25, 2022; May 25, 2022; January 25, 2023; May 25, 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. No late applications will be accepted for this Funding Opportunity Announcement.

Contact: Deborah Philp, Ph.D.; National Institute of Allergy and Infectious Diseases (NIAID); Telephone: 301.761.7766; Email: AITrainingHelpDesk@niaid.nih.gov

Grant Program: Growing Great Ideas: Research Education Course in Product Development and Entrepreneurship for Life Science Researchers (UE5 Clinical Trial Not Allowed)

Agency: National Institutes of Health RFA-DA-22-020

Website: <https://grants.nih.gov/grants/guide/rfa-files/RFA-DA-22-020.html>

Brief Description: The research efforts over the past two decades, mainly supported by the National Institute on Drug Abuse (NIDA), have led to a substantial advance in fundamental understanding of the neurobiological basis of drug addiction. These insights have resulted in identification of multiple science-based approaches that could potentially revolutionize the prevention, diagnosis, and treatment of SUDs. Nonetheless, the goal of developing, scaling, and delivering effective solutions for SUDs remains largely unmet. For example, there are no therapies approved to treat either stimulant or cannabis use disorders, and the efficacy of available therapies for other SUDs (e.g., opiates, tobacco, alcohol) is limited. The dearth of innovative products for SUDs has been attributed to a low level of interest by the private industry, including pharmaceutical, biotech and device manufacturers, to engage in formal product development of the discoveries originating in the academic labs of the drug addiction researchers. There are multiple issues contributing to private sector disengagement from SUDs, including the perception of a small market size, the prospect of a low return on investment, the negative association of linking a company's name with the use of illegal substances and fragmented SUD patient advocacy. As such, in addition to the efforts to assuage a lack of enthusiasm by the private sector, it is critically important to empower the engagement of academic scientists into formal biomedical product development and

entrepreneurship processes. To empower the academic scientists to engage in biomedical product development, NIDA invites the grant applications 1) to develop a customized curriculum in biomedical entrepreneurship, innovation and biomedical product development and 2) to implement this curriculum in a form of the education programs/short courses, specifically targeting scientists working in the field of drug addiction research.

The institution proposing the course must be an institution that has an established and well-recognized entrepreneurship teaching program with the demonstrated ability and passion to adapt/develop and deliver the integrated curriculum for academic life scientists. The proposed course could be designed to represent a multi-disciplinary teaching effort between, for example, the Schools of Business, Medicine, Engineering, Pharmacy, and Sciences and could be co-taught by expert faculty from these schools. However, a leading role for a faculty from the Schools of Business or Entrepreneurship is strongly encouraged. The knowledge of distinctiveness of the SUD markets and indications is also desired. NIDA hopes that these multi-disciplinary teaching teams would impart the knowledge and experience necessary to tackle real clinical needs and to offer technical solutions and business models that will enable future commercialization of SUD diagnostics and treatments.

Award: Direct costs of up to \$320,000 per year may be requested.

Letter of Intent: October 18, 2021

Proposal Deadline: November 18, 2021

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

Contact: Elena Koustova, PhD, MBA, National Institute on Drug Abuse (NIDA), Telephone: 301-496-8768, Email: elena.koustova@nih.gov

Grant Program: Transformative Artificial Intelligence and Machine Learning Based Strategies to Identify Determinants of Exceptional Health and Life Span (R21/R33 Clinical Trial Not Allowed)

Agency: National Institutes of Health RFA-AG-22-022

Website: <https://grants.nih.gov/grants/guide/rfa-files/RFA-AG-22-022.html>

Brief Description: This FOA supports the development of novel, transformative, and efficient AI/ML strategies by an interdisciplinary team with specific expertise in AI/ML and aging biology in order to integrate, extract, and interpret genetics and multi-omic (i.e., genome, epigenome, transcriptome, proteome, metabolome, microbiome, phenome) data sets from human EL cohorts and multiple non-human species to understand exceptional aging processes, including discovering protective molecular factors that drive the exceptional aging process. Applications that propose computer automation and the development and implementation of transformative, machine-based analytical tools that can provide added value beyond ongoing human-based analyses will be considered responsive to this FOA. Approaches to the analysis of large data sets derived from existing EL studies should be prioritized. This FOA supports the creation and leveraging of open-source technology and architecture. Therefore, it is expected that all noncommercial software (including source code), software documentation, hardware designs and documentation, and technical data generated under this FOA be provided to the research community in a timely manner through the [NIA Exceptional Longevity Knowledge Portal](#) (EL Portal), an NIA-approved data repository.

Award: Application budgets are not to exceed \$150,000 in direct costs per year in the R21 phase and \$350,000 in direct costs per year in the R33 phase

Letter of Intent: September 28, 2021

Proposal Deadline: October 28, 2021

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

Contact: Nalini Raghavachari, Ph.D.; National Institute on Aging (NIA); Division of Geriatrics and Clinical Gerontology (DGCG); Phone: 301-496-6942; Email: nraghavachari@mail.nih.gov

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Department of Defense/US Army/DARPA/ONR/AFOSR

Grant Program: National Defense Education Program (NDEP) Science, Technology, Engineering, and Mathematics (STEM) Consortia Request for Information (RFI) for the Office of the Under Secretary of Defense (Research & Engineering)

Agency: Department of Defense RANDENDEPSTEMFY22RFI

RFP Website: <https://www.grants.gov/web/grants/view-opportunity.html?oppId=33490>

Brief Description: The Department of Defense (DoD) may use responses to this request for information (RFI) to inform future solicitation / funding opportunity announcement. The purpose of this RFI is to survey industry (to include non-profits, academia, large, and small businesses (e.g., 8(a), service-disabled Veteran-owned small business, HUBZone small business, small disadvantaged business, Veteran-owned small business, and woman-owned small business)) for relevant information. Hence, submitted responses should not be worded as proposals. In accordance with FAR 15.201(e), responses to this notice are not offers and cannot be accepted by the Government to form a binding contract. The Government will not reimburse respondents for any costs associated with submissions of the RFI being requested or reimburse expenses incurred to interested parties for responses. Background/Overview: This RFI consists of two focuses, which are outlined below: (1) Transitioning students from 2-year Community College science, technology, engineering, and mathematics (STEM) programs to a STEM degree at a 4-year institution through a consortium based approach (2) Preparing an agile and diverse workforce through technical training and certificate programs and supporting these programs through collaborative partnerships and consortia.

The Department of Defense (DoD) STEM mission is to inspire, cultivate, and develop exceptional STEM talent through a continuum of opportunities to enrich the current and future DoD workforce poised to tackle evolving defense technological challenges. Towards this end, DoD invests in the future and current STEM talent pools by fostering pathways that connect to a continuum of enriching DoD programs to meet the unique mission needs of the Department.

Awards: N/A

Letter of Intent: Please see below.

Proposal Submission Deadline: Submission Requirements: All responses to the RFI should be submitted via e-mail to osd.dodstem@mail.mil following the Schedule of Events below. The government is contemplating holding an informational workshop/webinar after the close of the RFI. If you would like to participate, RSVP to the email address provided and state I, II, and/or III from the areas of interest on page 1.

Schedule of Events: Questions Regarding RFI: 23 August, 2021 17:00 EST

FAQ Posting 27 August, 2021

RFI Responses Due 10 September, 2021 17:00 EST

There is a maximum page limitation of six (6) pages: • four (4) pages for the responses to questions • two (2) pages for the capability statement

Contact: osd.dodstem@mail.mil

Grant Program: Environmental Microbes as a BioEngineering Resource (EMBER)

Agency: Department of Defense DARPA - Biological Technologies Office HR001121S0035

RFP Website: <https://sam.gov/opp/8e7c7d2a79774a8d89e13068c8c6cb54/view>

Brief Description: The Environmental Microbes as a BioEngineering Resource (EMBER) program aims to develop novel, bio-based technologies to overcome key challenges facing domestic supply of Rare Earth Elements (REEs) critical to the U.S. and Department of Defense (DoD). The EMBER program will leverage the diversity, specificity, and customizability of environmental microbiology to enable new biomining methods for separation, purification, and conversion of REEs into manufacturing-ready forms. Microbes (and/or biomolecules), including those from extreme or metal-rich environments, can be biologically engineered or adapted to bind, assimilate, and manipulate individual REEs. These biological components, once developed, may be assembled into an in-line separation, purification, and recovery workflow resulting in individual, purified REEs. Scalability of EMBER's approach will be demonstrated with proof-of-concept, pilot scale studies aligned with existing mining/waste treatment infrastructure.

Awards: Multiple awards are anticipated

Letter of Intent: Please see below.

Proposal Submission Deadline: Proposal Abstract Due Date and Time: 4:00 PM ET, August 16, 2021
o Full Proposal Due Date and Time: 4:00 PM ET, September 27, 2021
o BAA Closing Date: September 27, 2021
o Proposers Day: July 27, 2021

Contact: The BAA Coordinator for this effort may be reached at: EMBER@darpa.mil

Grant Program: Morphogenic Interfaces (MINT)

Agency: Department of Defense DARPA - Defense Sciences Office HR001121S0033

RFP Website: <https://sam.gov/opp/e91707d986084be28cc1c36fad081e22/view>

Brief Description: The Defense Sciences Office (DSO) at the Defense Advanced Research Projects Agency (DARPA) is soliciting innovative research proposals for the application of morphogenesis to design electrochemical interfaces. The Morphogenic Interfaces (MINT) program seeks to enhance the persistence of high performance electrochemical systems by developing self-regulating interfaces that exploit detrimental local gradients to preserve interface function. To achieve this, MINT approaches should minimize irreversible morphological degradation that occurs at the functional interface between different materials in batteries and surface protection coatings/alloys. Proposed research should (1) develop mathematical models that can precisely predict the evolution of interface morphology informed by novel in operando characterization of electrochemical interfaces, (2) design/discover novel interface materials that can self-regulate their morphology and function, and (3) demonstrate the application of these interface materials to realize persistent, high performance electrochemical systems. Specifically excluded is research that primarily results in evolutionary improvements to the existing state of practice.

Awards: DARPA anticipates multiple awards in both Focus Areas 1 (FA1) and 2 (FA2)

Letter of Intent: Please see below.

Proposal Submission Deadline: Proposers Day: July 9, 2021. See Section VIII.A. o Abstract Due Date: July 23, 2021, 4:00 p.m. o FAQ Submission Deadline: August 23, 2021, 4:00 p.m. See Section VIII.B. o Full Proposal Due Date: September 2, 2021, 4:00 p.m.

Contact: Dr. Vishnu Sundaresan, Program Manager, DARPA/DSO o BAA Email: MINT@darpa.mil

Grant Program: DOD Chronic Pain Management, Investigator-Initiated Research Award

Agency: Department of Defense Dept. of the Army -- USAMRAA W81XWH-21-CPMRP-IIRA

RFP Website: <https://sam.gov/opp/f08ce40db929467ab7a8cdac02345b70/view>

Brief Description: The intent of the FY21 CPMRP IIRA is to support studies that have the potential to make significant advances in research, patient care, and/or quality of life in the FY21 CPMRP IIRA Focus Areas. IIRA applications may involve basic, translational, and clinically oriented research, including studies in animal models, research with human anatomical substances, and research with human subjects, as well as correlative studies associated with an existing clinical trial; however, this award may not be used to conduct clinical trials. Multidisciplinary collaborations and innovative approaches are encouraged. Studies seeking to advance new and novel opioid-based therapeutic interventions do not meet the intent of the award mechanism and may be withdrawn. Studies seeking to understand and reduce opioid utilization in chronic pain management within the context of current prescribing practices are acceptable.

Awards: The anticipated direct costs budgeted for the entire period of performance for an FY21 CPMRP IIRA will not exceed \$900,000. Estimated Total Program Funding: \$7,200,000

Letter of Intent: Please see below.

Proposal Submission Deadline: Pre-Application Submission Deadline: 5:00 p.m. Eastern time (ET), July 30, 2021 • Invitation to Submit an Application: September 24, 2021 • Application Submission Deadline: 11:59 p.m. ET, November 12, 2021

Contact: CDMRP Help Desk Phone: 301-682-5507 Email: help@eBRAP.org

Grant Program: Defense Sciences Office Office-wide

Agency: Department of Defense DARPA HR001121S0032

RFP Website: <https://sam.gov/opp/f08ce40db929467ab7a8cdac02345b70/view>

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 or studies and analysis proposals that address one or more of the following technical thrust areas: (1) Frontiers in Math, Computation and Design, (2) Limits of Sensing and Sensors, (3) Complex Social Systems, and (4) Anticipating Surprise. Each of these thrust areas 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.

Awards: DARPA anticipates multiple awards.

Letter of Intent: Please see below.

Proposal Submission Deadline: Executive Summary Due Date and Time: Executive Summaries may be submitted on a rolling basis until Executive Summary Due Date: June 10, 2022, 4:00 p.m. o Proposal Abstract Due Date and Time: Abstracts may be submitted on a rolling basis until June 10, 2022, 4:00 p.m. o FAQ Submission Deadline: June 2, 2022, 4:00 p.m. See Section VIII.A. o Full Proposal Due Date and Time: Proposals may be submitted on a rolling basis until June 10, 2022, 4:00 p.m.

Contact: Technical POC: Phil Root, Deputy Director, DARPA/DSO o BAA Email: HR001121S0032@darpa.mil

Grant Program: Research Interests of the Air Force Office of Scientific Research
Agency: Department of Defense Air Force Office of Scientific Research FA9550-21-S-0001
RFP Website: <https://www.grants.gov/web/grants/view-opportunity.html?oppId=334084>
<https://www.afrl.af.mil/AFOSR/>

Brief Description: The objective of this portfolio is to develop the fundamental scientific knowledge required to understand the dynamics of complex, heterogeneous and reactive materials for game-changing advancements in munitions and propulsion. The research areas supported by this portfolio therefore seek to discover, characterize, and reliably predict the fundamental chemistry, physics, hydrodynamics and materials science associated with the high energetics of explosives, solid propellant burning, and structural dynamics of materials subject to shock loading. The overall scope of the research in the portfolio will be accomplished through a balanced mixture of experimental, numerical, and theoretical efforts. The fundamental science of interest to this portfolio is necessary for revolutionary advances in future Air Force and Space Force weapon systems and their propulsion capabilities, including increased energy density, operational efficiency, effect-based optimization, and survivability in harsh environments.

Awards: Multiple awards. Available Funding: \$100,000,000

Letter of Intent: Please contact the program director.

Proposal Submission Deadline: Open until new BAA is posted.

Contact: DR. MARTIN J. SCHMIDT, AFOSR/RTA1 Email: dynamicmaterials@us.af.mil (703) 588-8436; CALVIN D. SCOTT, AFOSR/RBKC Senior Procurement Analyst Email: afosr.baa@us.af.mil

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Department of Transportation

Grant Program: Dwight David Eisenhower Transportation Fellowship Program (DDETFP) Graduate Fellowship

Agency: Department of Transportation 693JJ318NF5227-2021

Website: <https://www.grants.gov/web/grants/view-opportunity.html?oppId=331800>

Brief Description: The goals of these Grants are to provide DDETFP Graduate Fellowships to 1) attract the Nation's brightest minds to the field of transportation, 2) enhance the careers of transportation professionals by encouraging them to seek advanced degrees, and 3) bring and retain top talent in the transportation industry of the U.S.

Individual students apply for the DDETFP Graduate Fellowship. The FHWA makes awards to the Institution of Higher Education (IHE) ("Recipient") on behalf of the student ("Student Designee"). The IHE must be accredited by a federally-recognized accrediting agency and must be located within the United States or its Territories. If a student is selected to receive a fellowship, the student, their faculty advisor, and the IHE will be responsible for completing and submitting all required paperwork to execute the Agreement. Students must be prepared to submit a copy of their application package and this Notice of Funding Opportunity (NOFO) to their IHE.

Award: The FHWA expects approximately \$1 million to be made available for the DDETFP.

Letter of Intent: Not Required

Proposal Deadline: Apr 30, 2021 Application deadline is 4/30/2021 at 5:00pm Eastern Time.

Contact Information: Ewa Flom, ewa.flom@dot.gov, 202-924-1125

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Department of Agriculture:

Grant Program: Agriculture and Food Research Initiative - Foundational and Applied Science

Agency: Department of Agriculture USDA-NIFA-AFRI-007692

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.

Letter of Intent: Required.

Awards: Up to \$15,000,000; Anticipated available funding: \$290,000,000

Proposal Deadline: Thursday, July 29, 2021

Contact Information: [AFRI Coordination Team](#)

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Department of Labor

Grant Program: State Apprenticeship Expansion, Equity and Innovation (SAEEI) Grant Program

Agency: Department of Labor FOA-ETA-21-07

Website: <https://www.grants.gov/web/grants/view-opportunity.html?oppId=331689>

Brief Description: The SAEEI Funding Opportunity Announcement FOA will provide up to \$87.5 million in grant awards to support the expansion and diversification of Registered Apprenticeship Programs (RAPs). Grant funds will be awarded to Governor-led, state initiatives that are expanding, diversifying and transforming registered apprenticeship. Funding will provide states with the flexibility to meet specific industry needs and demands. Collectively, these efforts will aim to achieve the following goals:

- 1) System expansion to support the development, modernization, and diversification of RAPs;
- 2) Equity in apprenticeship by increasing the number of apprentices enrolled in RAPs, including underrepresented populations; and
- 3) Partnership and alignment to support workforce system integration;
- 4) Innovation in program development and recruitment strategies.

Allowable activities under this grant include activities related to establishing or expanding existing RAPs for adults and/or youth, pre-apprenticeship leading to a RAP, and wrap-around/supportive services.

Awards: FOA will provide up to \$87.5 million in grant awards.

Proposal Deadline: This advance notice is to encourage potential applicants to begin forming partnerships and other early preparations to improve readiness for when the Funding Opportunity Announcement (FOA) is published. This is not a grant solicitation, and is for informational purposes only.

Contact Information: Matthew Carls Grants Management Specialist, Carls.Matthew.L@dol.gov

Department of Commerce/EDA

Grant Program: FY 2021 American Rescue Plan Act (ARPA) Statewide Planning, Research, and Networks

Agency: U.S. Department of Commerce EDA-HDQ-ARPRN-2021-2006986

Website: <https://www.eda.gov/>

<https://www.grants.gov/web/grants/view-opportunity.html?oppId=334728>

Brief Description: The ARPA Statewide Planning, Research, and Networks NOFO is part of EDA’s multi-phase effort to respond to the coronavirus pandemic as directed by the American Rescue Plan Act of 2021. Specifically, this NOFO seeks to build regional economies for the future through two primary avenues: a) Statewide Planning and b) Research and Networks.

For Research awards, EDA solicits applications for investments that support research and evaluation projects² related to economic recovery from the coronavirus pandemic. EDA will support the development of tools, recommendations, and resources that shape Federal economic development policies and inform economic development decision-making. Awards will provide critical, cutting-edge research and best practices to regional, state, and local practitioners in the economic development field, thereby enhancing understanding and implementation of economic development concepts throughout the country. EDA is specifically interested in research projects that will enable real-time research into EDA’s ARPA programs, especially those related to the new Jobs Challenge, Build Back Better Regional Challenge, Indigenous Communities NOFO, and travel and tourism programs. See also section D.2 for more detail on the evaluation parameters EDA seeks.

Awards: Under the American Rescue Plan Act of 2021 (Public Law 117-2), Congress provided EDA with \$3,000,000,000, to remain available until September 30, 2022, to “prevent, prepare for, and respond to coronavirus and for necessary expenses for responding to economic injury as a result of coronavirus.” Of the funds provided, EDA anticipates awarding \$90,000,000 under this NOFO: \$59,000,000 for Statewide Planning grants and \$31,000,000 for Research and Communities of Practice Challenge awards.

Letter of Intent: Contact the program director.

Proposal Deadline: While EDA encourages eligible applicants to submit their applications as soon as possible, EDA strongly advises eligible applicants to submit complete applications no later than October 31, 2021 so that EDA can review and process the application in time to achieve the objectives of the grant program.

Contact Information: For applicants interested in the Research component: research@eda.gov

Grant Program: Climate Program Office FY2022

Agency: U.S. Department of Commerce NOAA-OAR-CPO-2022-2006799

Website: <https://www.grants.gov/web/grants/view-opportunity.html?oppId=334633>

Brief Description: Climate variability and change present society with significant economic, health, safety, and security challenges. As part of the National Oceanic and Atmospheric Administration (NOAA) climate portfolio within the Office of Oceanic and Atmospheric Research (OAR), the Climate Program Office (CPO) addresses these climate challenges by managing competitive research programs through which high-priority climate science, assessments, decision-support research, outreach, education, and capacity-building activities are funded to advance our understanding of the Earth’s climate system, and to foster the application and use of this knowledge to improve the resilience of our Nation and its partners. Through this announcement, CPO is seeking applications for eight individual competitions in FY22.

Several of these competitions are relevant to four high-priority climate risk areas CPO is focusing on to improve science understanding and/or capabilities that result in user-driven outcomes: Coastal Inundation, Marine Ecosystems, Water Resources, and Extreme Heat. More information about CPO's Climate Risk Areas Initiative can be found <https://cpo.noaa.gov/News/ArtMID/7875/ArticleID/1945/NOAA%E2%80%99s-ClimateProgram-Office-launches-Climate-Risk-Areas-Initiative>.

NOAA, OAR, and CPO encourage applicants and awardees to support the principles of diversity and inclusion when writing their proposals and performing their work. Diversity is defined as a collection of individual attributes that together help organizations achieve objectives.

Awards: In FY22, approximately \$15 million will be available for approximately 90 new awards pending budget appropriations (see section I.B above). It is anticipated that most awards will be at a funding level between \$50,000 and \$300,000 per year with exceptions for larger awards.

Letter of Intent: Letters of intent (LOIs) for all competitions should be received by email by 5:00 p.m. Eastern Time on 08/09/21.

Proposal Deadline: Full applications for all competitions must be received by 5:00 p.m. Eastern Time, on 10/18/21.

Contact Information: Diane Brown at diane.brown@noaa.gov.

Grant Program: Manufacturing USA Technology Roadmap (MfgTech) Grant Program

Agency: U.S. Department of Commerce NIST 2021-NIST-MFGTECH-01

Website: <https://www.grants.gov/web/grants/view-opportunity.html?oppId=334211>

Brief Description: The NIST Manufacturing USA Technology Roadmap (MfgTech) Grant Program is seeking applications from eligible applicants to develop technology roadmaps for promising advanced manufacturing clusters. These grants will establish new or strengthen existing industry-driven consortia that address high-priority research challenges to grow advanced manufacturing in the United States. The emphasis of this NOFO is on technology road mapping in areas of critical interest to the nation, including technology areas appropriate for potential future Manufacturing USA institutes. See Section I. of this NOFO for the full program description.

Awards: In Fiscal Year 2022 (FY22), NIST anticipates funding individual awards up to \$300,000 each with a project performance period of up to 18 months. The total number of awards will be based on available funds.

Letter of Intent: Contact the program director.

Proposal Deadline: Applications must be received at Grants.gov no later than 11:59 p.m. Eastern Time, August 17, 2021.

Contact Information: Misty L Roosa Management Analyst 301-975-3007 [Agency Contact](#)

Grant Program: Oceanic and Atmospheric Research (OAR)

Agency: Department of Commerce National Oceanic and Atmospheric Administration NOAA-OAR-OER-2022-2006910

Website: <https://www.grants.gov/web/grants/view-opportunity.html?oppId=333585>

Brief Description: The NOAA Office of Ocean Exploration and Research (OER), also known as NOAA Ocean Exploration, is soliciting proposals to conduct or support ocean exploration resulting in outcomes that provide or enable initial assessments about unknown or poorly understood regions of U.S. waters. This funding opportunity will focus on the outcomes of the Workshop to Identify National Ocean Exploration Priorities in the Pacific hosted by the Consortium for Ocean Leadership (COL) in 2020 in partnership with OER. Proposals should support the ocean exploration topical priorities or spatial

priorities in the U.S. Exclusive Economic Zone (EEZ) identified in the “Report on the Workshop to Identify National Ocean Exploration Priorities in the Pacific” (https://oceanleadership.org/wpcontent/uploads/2020/11/OceanExploration_PacificPriorities_Workshop_Report_NOV2020.pdf).

Proposals should also support the National Strategy for Mapping, Exploring, and Characterizing the United States Exclusive Economic Zone (national strategy, <https://oeab.noaa.gov/wpcontent/uploads/2021/01/2020-national-strategy.pdf>).

Awards: Project funding up to \$750,000. Anticipated available funding: \$3,000,000

Letter of Intent: Pre-proposal stage (due June 21, 2021): 1. OER NOFO cover sheet 2. Pre-proposal, max 2 pages Submit to: oer.ffo2022@noaa.gov

Proposal Deadline: Full Proposal due on October 8, 2021

Contact Information: For further information and for applicants without internet, contact the NOAA Office of Ocean Exploration and Research at (301) 734-1172 or oer.ffo2022@noaa.gov

Grant Program: FY2021 to FY2023 NOAA Broad Agency Announcement (BAA)

Agency: U.S. Department of Commerce NOAA-NFA-NFAPO-2021-2006626

Website: <https://www.grants.gov/web/grants/view-opportunity.html?oppId=329261>

Brief Description: This Broad Agency Announcement is a mechanism to encourage research, education and outreach, innovative projects, or sponsorships that are not addressed through NOAA’s competitive discretionary programs. This announcement is not soliciting goods or services for the direct benefit of NOAA. Funding for activities described in this notice is contingent upon the availability of Fiscal Year 2021, Fiscal Year 2022, and Fiscal Year 2023 appropriations. Applicants are hereby given notice that funds have not yet been appropriated for any activities described in this notice. Publication of this announcement does not oblige NOAA to review an application beyond an initial administrative review, or to award any specific project, or to obligate any available funds. As an agency with responsibilities for maintaining and improving the viability of marine and coastal ecosystems, for delivering valuable weather, climate, and water information and services, for understanding the science and consequences of climate change, and for supporting the global commerce and transportation upon which we all depend, NOAA must remain current and responsive in an ever-changing world.

Awards: Contingent to the availability of funds.

Letter of Intent: Contact the program director.

Proposal Deadline: September 30, 2023.

Contact Information: Mr. Lamar Dwayne Revis, 301-628-1308, lamar.revis@noaa.gov

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EPA

Grant Program: FY22 BROWNFIELDS JOB TRAINING GRANTS

Agency: Environmental Protection Agency EPA-OLEM-OBLR-21-03

Website: <https://www.grants.gov/web/grants/view-opportunity.html?oppId=335038>

Brief Description: This notice announces the availability of funds and solicits applications from eligible entities, including nonprofit organizations, to deliver Brownfields Job Training programs that recruit, train, and place local, unemployed and under-employed residents with the skills needed to secure full-time employment in the environmental field. While Brownfields Job Training Grants require training in

brownfield assessment and/or cleanup activities, these grants also require that Hazardous Waste Operations and Emergency Response (HAZWOPER) training be provided to all individuals being trained. EPA encourages applicants to develop their curricula based on local labor market assessments and employers' hiring needs, while also delivering comprehensive training that results in graduates securing multiple certifications.

Award: Up to \$200,000. Anticipated Funding Amount: \$3,000,000

Letter of Intent: Contact the program director.

Submission Deadline: OCTOBER 5, 2021, 11:59 p.m. ET.

Contact: Channing Shepherd 1200 Pennsylvania Ave. N.W. Mail Code: 5105T Washington, D.C. 20460 Phone: (202) 566-1238 shepherd.channing@epa.gov

Grant Program: National Priorities: Water Innovation, Science, Engagement to Advance Water Reuse

Agency: Environmental Protection Agency EPA-G2021-ORD-E1

Website: <https://www.grants.gov/web/grants/view-opportunity.html?oppId=334795>

Brief Description: The U.S. Environmental Protection Agency (EPA), is seeking applications proposing to accelerate water innovation, information availability, and engagement to advance clean and safe water reuse goals, promote better understanding of the Nation's water and wastewater treatment and infrastructure, and enhance the availability and efficient use of water resources through water reuse. This request for applications (RFA) is intended to address multiple water reuse sources and applications to support national efforts to reduce technological and institutional barriers for expanded water reuse.

Award: Up to \$3,246,000. Anticipated Funding Amount: \$6,492,000

Letter of Intent: Contact the program director.

Submission Deadline: September 29, 2021: 11:59:59 pm Eastern Time

Contact: Sarah Ludwig-Monty, Phone: 202-566-1072 [Sarah Ludwig-Monty, Technical Contact](#)

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Department of Energy

Grant Program: FY21 Advanced Manufacturing Office Multi-Topic FOA

Agency: Department of Energy DE-FOA-0002553

Website: <https://eere-exchange.energy.gov/Default.aspx#FoaIde231b0d9-2c92-4010-a822-77abecf0dc82>

Brief Description: To drive manufacturing innovation, spur job creation, and enhance manufacturing competitiveness, the Advanced Manufacturing Office (AMO) supports applied research, development, and demonstration in crosscutting, platform technologies to decarbonize the industrial sector and promote the development and growth of a resilient manufacturing sector for multiple emerging clean energy fields.

Building a clean energy and equitable economy and addressing the climate crisis is a top priority of the Biden Administration. This Funding Opportunity Announcement (FOA) will advance the Biden Administration's goal to achieve carbon pollution-free electricity by 2035 and to "deliver an equitable, clean energy future, and put the United States on a path to achieve net-zero emissions, economy-wide, by no later than 2050" to the benefit of all Americans. The Department of Energy is committed to pushing the frontiers of science and engineering, catalyzing clean energy jobs through research, development, demonstration, and deployment (RDD&D), and ensuring environmental justice and inclusion of disadvantaged communities.

The research and development (R&D) activities to be funded under this FOA will support the government-wide approach to the climate crisis by driving the innovation that can lead to the deployment of clean energy technologies, which are critical for climate protection. This FOA will support activities to advance efficiency improvements and enhance manufacturing competitiveness through technological innovation by focusing on three main areas, as described below, with subtopics in each area:

Topic Area 1: Manufacturing Process Innovation

Topic Area 1a: Efficiency Improvements to Drying Processes

Topic Area 1b: Advanced Tooling for Lightweight Automotive Components

Topic Area 1c: Sustainable Chemistry Practices in Manufacturing

Topic Area 2: Advanced Materials Manufacturing

Topic Area 2a: Materials for Harsh Service Conditions

Topic Area 2b: Development of Aluminum-Cerium (Al-Ce) Alloys and Processing to Enable Increased Energy Efficiency in Aerospace Applications

Topic Area 3: Energy Systems

Topic Area 3a: Structured Electrode Manufacturing for Lithium-ion Batteries

Awards: EERE expects to make a total of approximately \$42,300,000 of federal funding available for new awards under this FOA, subject to the availability of appropriated funds. EERE anticipates making approximately 17 to 30 awards under this FOA. EERE may issue one, multiple, or no awards. Individual awards may vary between \$500,000 and \$4,000,000 depending on topic area.

Letter of Intent: N/A

Submission Deadline: Concept Paper Submission Deadline: 9/10/2021 5:00 PM ET

- Full Application Submission Deadline: 11/5/2021 5:00 PM ET

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

Grant Program: Request for Information on Establishing a New Manufacturing Institute

Agency: Department of Energy DE-FOA-0002564

Website: <https://eere-exchange.energy.gov/Default.aspx#FoaIdd502295b-b845-4eba-a83d-b9162eec3f23> .

Brief Description: The U.S. Department of Energy (DOE), Office Energy Efficiency and Renewable Energy (EERE), and the Advanced Manufacturing Office (AMO) seeks stakeholder input to refine the scope of a potential new Clean Energy Manufacturing Institute. This Institute will focus on reducing the overall emissions of domestic manufacturing through carbon intensity improvements, moving the Industrial Sector towards the goal of net zero emissions by 2050. This request for information (RFI) is specifically focused on understanding the challenges, opportunities and benefits of industrial decarbonization associated with:

- Electrification of Industrial Process, including technologies for electrification of manufacturing process, materials for more effective/efficient electrification, scale-up and design for integration into manufacturing processes, and life cycle assessment tools and methodologies.
- Decarbonization of Metals Manufacturing, including technical solutions in metallic manufacturing, improved alloy material performance and acceleration of adopting developed technologies.

This information will inform DOE's consideration of a potential funding opportunity to establish DOE's seventh Clean Energy Manufacturing Institute. Clean Energy Manufacturing Institutes are public-private partnerships that sponsor research and facilitate technology development in a given topic area. EERE is interested in responses from all stakeholders, including representatives of state and cities, academia, national laboratories, non-governmental organizations, interest groups, private sector, and more.

This is a Request for Information (RFI) only. EERE will not pay for information provided under this RFI and no project will be supported as a result of this RFI. This RFI is not accepting applications for financial assistance or financial incentives. EERE may or may not issue a Funding Opportunity Announcement (FOA) based on consideration of the input received from this RFI.

Awards: N/A

Letter of Intent: N/A

Submission Deadline: Responses to this RFI must be submitted electronically to Decarb-Institute@ee.doe.gov no later than 5:00pm (ET) on September 7, 2021.

Contact: Please contact at Decarb-Institute@ee.doe.gov

Grant Program: Notice of Intent to Issue Funding Opportunity Announcement No. DE-FOA-0002543 Advanced Building Construction (ABC) - 2021

Agency: Department of Energy DE-FOA-0002544

Website: <https://eere-exchange.energy.gov/Default.aspx#FoaId9ae4fdcd-d884-4568-82cb-fe39b9320dfc>.

Brief Description: Desirability, convenience, and cost are the three greatest barriers to deep energy building retrofits. The goal of this planned FOA is to fund research that enables faster renovation and construction of affordable, appealing, and energy efficient buildings. This FOA directly supports goals of a carbon-neutral building economy no later than 2050 by focusing on three specific topics areas in need of desirable, convenient and affordable solutions to transform the United States' building stock. This FOA builds on BTO's current Advanced Building Construction work: <https://www.energy.gov/eere/buildings/advanced-building-construction-initiative>. Information about the latest ABC goals and strategic organization can be found in the factsheet: <https://www.energy.gov/sites/prod/files/2021/03/f83/bto-abc-fact-sheet-030321.pdf>

The ABC Initiative uses a multi-pronged approach to address research, development, and market challenges with the goal of integrating highly efficient and low-carbon innovations into the construction industry's broader modernization efforts. Through competitively awarded R&D projects and cutting-edge building technologies research at DOE's national laboratories, and the establishment of an ABC Collaborative with key industry partnerships, workforce training, and other strategic activities, the ABC Initiative works to not only drive development of new technologies, practices and approaches but also ensure that these solutions are widely deployed in the market – thus helping the U.S. expand job opportunities, develop a stronger building infrastructure, improve energy affordability.

A key objective of the planned 2021 Advanced Building Construction FOA is to fund R&D that will benefit underserved communities by contributing to the following goals:

- Highly energy-efficient buildings with low-carbon footprints and lower energy bills
- Faster renovation and construction, with less disruption to building occupants
- Affordable to developers and consumers
- Improved indoor air quality, improved comfort, and reduced maintenance.

As part of a forthcoming FOA, BTO will be seeking applications aimed at developing deep energy retrofit and new construction technologies suitable for environments with extremely high or low temperatures that tackle a combination of envelope, heating, cooling, and water heating issues, and hold appeal for both building owners and occupants. Priority shall be given to those with prior experience serving low-income residents living in extremely hot or cold environments.

Awards: EERE envisions awarding 6-15 financial assistance awards up to \$2M each in the form of cooperative agreements for a total of \$15M in Federal funding. The estimated period of performance for each award will be approximately 2-3 years.

Letter of Intent: N/A

Submission Deadline: TBD

Contact: Mandy Aden 240-562-1280 mandy.aden@ee.doe.gov

Grant Program: Assisting Federal Facilities with Energy Conservation Technologies (AFFECT)

Agency: Department of Energy Golden Field Office DE-FOA-0002472

Website: <https://eere-exchange.energy.gov/Default.aspx#FoaIda431a2fd-4bd8-49ab-9fe4-2d0a244c4090>

Brief Description: As part of the DOE Office of Energy Efficiency and Renewable Energy (EERE), the Federal Energy Management Program's (FEMP) priority is to help federal agencies advance the energy efficiency and resilience of their operations, while addressing climate change and minimizing the carbon footprint. FEMP assists Federal agencies in meeting energy- and climate change-related goals by bringing expertise from all levels of project and policy implementation to identify affordable solutions and facilitate public-private partnerships.

DOE and FEMP intend to play a leading role in meeting the challenge facing our nation and our planet from climate change through advancing a plan to lead the world in building a clean energy economy to address the climate emergency. DOE and FEMP will use its resources to turn the threat of climate change into an opportunity by catalyzing our partners across the Federal government to lead through the power of example toward the goal of building a 100% clean energy economy with net-zero emissions.

FEMP's Assisting Federal Facilities with Energy Conservation Technologies (AFFECT) 2021 FAC will provide direct funding to Federal agencies for the development of energy and water efficiency projects and processes that address climate change mitigation and/or adaptation. The purpose of the AFFECT 2021 FAC funding is to initiate, supplement, improve or otherwise increase the viability and adoption of climate change mitigation and adaptation actions entailing energy efficiency, clean energy, and operational resilience at U.S. Federal government-owned facilities. This is accomplished through leveraging the use of a privately financed performance contract in the form of an Energy Savings Performance Contract (ESPC), ENABLE contract, or Utility Energy Service Contract (UESC) to enhance Federal agency climate change mitigation via energy efficiency, clean energy, and adaptation at mission critical sites. The AFFECT 2021 FAC is expected to provide 'value added' additions to projects allowing for greater impact from the projects in terms of energy cost savings and greenhouse gas (GHG) mitigation, enhanced climate change adaptation and resilience. FEMP also intends for the AFFECT 2021 FAC to provide demonstrated opportunities for replication of projects at other Federal facilities, while building a diversified workforce within the clean energy economy in construction, skilled trades, and engineering to enhance American infrastructure.

Awards: FEMP expects to make a total of approximately \$13,000,000 of Federal funding available for new awards under this FAC for 13 to 20 awards.

Letter of Intent: Not Required

Submission Deadline: July 16, 2021 at 5:00pm ET

Contact: For questions related to the EERE Exchange website: EERE-ExchangeSupport@hq.doe.gov

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[NASA](#)

Grant Program: ROSES 2021: Advanced Information Systems Technology

Agency: NASA NNH21ZDA001N-AIST

Website: <https://nspires.nasaprs.com/external/solicitations/summary.do?solId=%7BA09EE863-2451-31C0-81AB-6B54FF19F103%7D&path=&method=init>

Brief Description: NASA's Advanced Information Systems Technology (AIST) Program identifies, develops, and supports adoption of software and information systems, as well as novel computer science technologies expected to be needed by the Earth Science Division in the 5-10-year timeframe, as described in ROSES-21 A.1, Earth Science Research Overview. AIST has been organized around two primary thrusts: New Observing Strategies (NOS) and Analytic Collaborative Frameworks (ACF). The current vision is to connect these two existing thrusts and integrate them into the larger concept of Earth System Digital Twins (ESDT). These three thrusts are described below, and more information is available on the ESTO AIST website.

Awards: Expected program budget for new awards: ~\$12 million yearly

Notice of Intent: Contact program director

Proposal Deadline: AIST21 Step-1 Proposals Due Aug 25, 2021

Contact: Jacqueline Le Moigne Earth Science Technology Office Science Mission Directorate NASA Headquarters Washington, DC 20546-0001 Email: HQ-AIST@mail.nasa.gov

Grant Program: ROSES 2021: Living With a Star Strategic Capability

Agency: NASA NNH21ZDA001N-LWSSC

Website: <https://nspires.nasaprs.com/external/solicitations/summary.do?solId=%7BE390079C-4F6E-5F2B-6BD9-38568142AAF5%7D&path=&method=init>

Brief Description: The Living With a Star Strategic Capability (LWSSC) program solicits proposals for the development of models for the coupled Sun-Earth and Sun-Solar System. Such models can act as tools for science investigations, as prototypes and test beds for prediction and specification capabilities, as frameworks for linking disparate data sets at vantage points throughout the Sun-Solar System, and as strategic planning aids for enabling exploration of outer space and testing new mission concepts. LWS Strategic Capability (LWSSC) is a component of the Heliophysics Research Program and proposers interested in this program element should read B.1, the Heliophysics Research Program Overview for Heliophysics-specific requirements. Defaults for all ROSES elements are found in the ROSES Summary of Solicitation and the Proposer's Guidebook and the order of precedence is the following: This document (B.6) followed by B.1, followed by the ROSES Summary of Solicitation, and the Proposer's Guidebook. Proposers should review all of these resources to ensure compliance with Program requirements.

Awards: The total funding available in Fiscal Year (FY) 2021 for new proposals submitted in response to this solicitation is expected to be about \$4M.

Notice of Intent: Contact program director

Proposal Deadline: Oct 13, 2021

Contact: Jacqueline Jeff Morrill Telephone: (202) 358-3744 Email: jeff.s.morrill@nasa.gov

Grant Program: Technology Advancement Utilizing Suborbital Flight Opportunities "Tech Flights"

Agency: NASA 80HQTR21NOA01-21FO-F1

Website: <https://nspires.nasaprs.com/external/solicitations/summary!init.do?solId=%7BCE7F59C1-7191-390F-77BF-2AE976BDF803%7D&path=open>

Brief Description: The National Aeronautics and Space Administration (NASA) Space Technology Mission Directorate's (STMD) mission is to address key research and technology challenges that will advance revolutionary capabilities for both NASA exploration mission challenges and national needs, and also address the market challenges associated with providing state-of-the-art commercial space products

and services. STMD's focus is on missions beyond low Earth orbit that would enable the return of humans to the Moon for long-term exploration and utilization, followed by human missions to Mars and other destinations. STMD innovates, develops, demonstrates, and infuses revolutionary, highpayoff technologies through transparent, collaborative partnerships, expanding the boundaries of the aerospace enterprise. STMD employs a merit-based competition model with a portfolio approach, spanning a range of discipline areas and technology and market readiness levels. STMD's Flight Opportunities program rapidly demonstrates promising technologies for space exploration, discovery, and the expansion of space commerce through suborbital testing with industry flight providers. The program matures capabilities needed for NASA missions and commercial applications while strategically investing in the growth of the U.S. commercial spaceflight industry.

Awards: Approximate Award Duration: 18 months, not to exceed two years Expected Award Amount: up to \$650K Total Amount of Funds Expected to be Awarded: \$4M

Notice of Intent: Mandatory Preliminary Proposals Due Jul 26, 2021

Proposal Deadline: Full Proposals Due: October 4, 2021 5:00 pm ET

Contact: Christopher Baker, Flight Opportunities Program Executive, Space Technology Mission Directorate, NASA Headquarters, HQ-STMDFO@nasaprs.com

Grant Program: ROSES 2021: Living With a Star Science

Agency: NASA NNH21ZDA001N-LWS

Website: <https://nspires.nasaprs.com/external/solicitations/summary.do?sollId=%7BDD29C108-980F-6F1A-AEC7-CE7375E35007%7D&path=&method=init>

Brief Description: The Living With a Star (LWS) Program emphasizes the science necessary to understand those aspects of the Sun and Earth's space environment that affect life and society. The ultimate goal of the LWS Program is to provide a scientific understanding of the system that leads to predictive capability of the space environment conditions at Earth, other planetary systems, and in the interplanetary medium. Every year the LWS Program solicits Focused Science Topics (FSTs) that address some part of this goal. This goal poses two great challenges for the LWS program. First, the program seeks to address large-scale problems that cross discipline and technique boundaries (e.g., data analysis, theory, modeling, etc.); and second, the program will identify how this new understanding has a direct impact on life and society. Over time, the Targeted Investigations have provided advances in scientific understanding that address these challenges.

Awards: TBD

Notice of Intent: Please see below

Proposal Deadline: Step-1 proposals: September 8, 2021, and Step-2 proposals: November 18, 2021.

Contact: Simon Plunkett Telephone: (202) 358-2034 Email: simon.p.plunkett@nasa.gov

Jeff Morrill Telephone: (202) 358-3744 Email: jeff.s.morrill@nasa.gov

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National Endowment of Humanities

Grant Program: Humanities Connections

Agency: National Endowment for the Humanities 20210914-AKA-AKB

Website: <https://www.neh.gov/grants/education/humanities-connections>

Brief Description: The Humanities Connections program seeks to expand the role of the humanities in undergraduate education at two- and four-year institutions. Awards support innovative curricular

approaches that foster partnerships among humanities faculty and their counterparts in the social and natural sciences and in pre-service or professional programs (such as business, engineering, health sciences, law, computer science, and other technology-driven fields), in order to encourage and develop new integrative learning opportunities for students.

Humanities Connections projects must include:

- substantive and purposeful integration of the subject matter, perspectives, and pedagogical approaches of two or more disciplines (with a minimum of one in and one outside of the humanities)
- collaboration between faculty from two or more departments or schools at one or more institutions
- experiential learning as an intrinsic part of the proposed curriculum
- long-term institutional support for the proposed curriculum innovation(s)

Competitive applications will demonstrate:

- that the proposed curricular project expands the role of the humanities in addressing significant and compelling topics or issues in undergraduate education at the applicant institution(s)
- that these projects develop the intellectual skills and habits of mind cultivated by the study of the humanities
- that faculty and students will benefit from meaningful collaborations in teaching and learning across disciplines as a result of the project

The Humanities Connections program includes two funding levels: **Planning** and **Implementation**

A [pre-application webinar](#) will be hosted on June 30, 2021 at 2:00 p.m. Eastern Time.

Award: Maximum award amount up to \$35,000 for Planning; up to \$150,000 for Implementation

Letter of Intent: Optional Draft due August 3, 2021

Proposal Deadline: Application due September 14, 2021

Contact: Contact the Division of Education Programs Team humanitiesconnections@neh.gov

Grant Program: Fellowship Programs at Independent Research Institutions

Agency: National Endowment for the Humanities 20210811-RA

Website: <https://www.neh.gov/grants/research/fellowship-programs-independent-research-institutions>

Brief Description: The Fellowship Programs at Independent Research Institutions (FPIRI) program supports institutions that provide fellowships for advanced humanities research in the U.S. and abroad, foster communities of intellectual exchange among participating scholars, and provide access to resources that might otherwise not be available to the participating scholars.

Fellowship programs may be administered by independent centers for advanced study, libraries, and museums in the U.S.; American overseas research centers; and American organizations that have expertise in promoting humanities research in foreign countries. Individual scholars apply directly to the institutions for fellowships. In evaluating applications, consideration is given to the library holdings, archives, special collections, and other resources—either on site or nearby—that institutions make available to fellows.

Program will host a [pre-application webinar](#) April 20, 2021, 2:00 p.m. Eastern Time.

Award: Maximum award amount: Up to \$565,000 (\$385,000 in outright funds plus \$180,000 in Federal Matching Funds)

Letter of Intent: Optional Draft due June 30, 2021

Proposal Deadline: Application due August 11, 2021

Contact: Contact the Division of Research Programs Team; 202-606-8200 fpiri@neh.gov

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[Private Foundations](#)

Special Funding Program: Israel-US Fund Seeking Proposals for Clean-Energy Joint Research

Grant Program: Israel-US Fund Seeking Proposals for Clean-Energy Joint Research

Agency: Israel-US Fund Seeking Proposals for Clean-Energy Joint Research

Website: <https://www.birdf.com/bird-energy-call-proposals/>

Brief Description: The Israel-US binational fund for energy research, BIRD Energy, is calling on tech firms and academic researchers in both countries to submit joint proposals for projects in the field of clean energy technologies. The [call for proposals](#) is part of BIRD Energy’s next funding round for joint research. Since 2009, the fund has financed 55 projects to date with a total investment from the US and Israeli governments of a total of \$42 million. To be considered, a project proposal should include:

- R&D cooperation between two companies or cooperation between a company and a university/research institution (one from the U.S. and one from Israel)
- Innovation in all areas of renewable energy and energy efficiency, such as solar and wind
- power, advanced vehicle technologies and alternative fuels, smart grid, storage, water-energy
- nexus, advanced manufacturing, AI for energy management, etc.
- Significant commercial potential; the project outcome should lead to commercialization

Award: The maximum grant is \$1M per project, and no more than 50% of the joint R&D budget.

Letter of Intent: Executive Summary: June 30, 2021

Proposal Deadline: Final Proposal: August 13, 2021

Contact: Submission Information: <http://www.birdf.com/upload-system/>

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Streamlyne Question of the Week

Question: Can I generate budgets for multiple years from the Year-1 budget in Streamlyne?

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

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

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Proposal Submission and Streamlyne Information **Internal Timeline for Successful and Timely Proposal Submission**

Due to the COVID-19 outbreak, PIs are strongly advised to prepare proposals well in advance of agency deadlines. Every effort will be made to meet agency deadlines following the NJIT Research Continuity Plan (<https://research.njit.edu/njit-research-continuity-plan>).

The NJIT Proposal Submission Guidelines and Policy posted on the website <https://research.njit.edu/proposal-submission-guidelines> provides the expected institutional timeline for proposal submission. Streamlyne User Manuals are posted on <https://research.njit.edu/streamlyne>. For contact information on proposal submission, pre-award services and post-award grant management, please visit research website <https://research.njit.edu/researchers> and <https://research.njit.edu/contact>.

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