

# NJIT Research Newsletter

Issue: ORN-2021-29

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**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

### **2021 NJIT URI Undergraduate Summer Research and Innovation Symposium**

**July 29, 2021; 10.00 AM - 4.00 PM**

**July 30, 2021; 9.30 AM - 4.30 PM**

**Ballroom A & B, Campus Center**

**For complete program and information, please click on the link below:**

<https://drive.google.com/drive/folders/1vgyH4999G6fTcQqx0h2hXaET4Oaj1AOZ?usp=sharing>

The 2021 NJIT Undergraduate Summer Research and Innovation Symposium integrated with the Innovation Day will be held on July 29-30, 2021, featuring a distinguished keynote talk from Daniel

Henderson followed by URI External Advisory Board (EAB) panel to pay a tribute to Dr. James Stevenson, recognizing his great contributions and support to IDS, TechQuest Innovation URI programs and research presentations from undergraduate students who worked during the summer with various URI programs. More than 130 undergraduate students will present their summer research work at the symposium in-person on campus or remotely through WebEx event. Best innovation projects will be awarded Dr. James Stevenson Innovation Award: first, second and third prizes of \$1,000, \$750 and \$500 respectively.

The event will also feature the inauguration of the National Academy of Inventors chapter at NJIT on July 30 from 11.00 AM - 12.30 PM. More than 32 faculty will be inducted as inventor members. Several administrators and technology innovation supporters will be inducted as honorary members. The inaugural ceremony will feature a keynote talk from Ms. Elizabeth Dougherty, Eastern Regional Outreach Director, U.S. Patent and Trademark Office (USPTO), and a member of the NAI Board of Directors.

For complete program and events information, agenda, presentaiton schedule, and links to attend the 2021 NJIT URI Summer Research Symposium remotely through WebEx, please [click here](#).

All symposium events and most student presentations will be presented in-person at the NJIT Student Campus Center. A few students will present remotely through WebEx. All symposium panel events and student presentations will be broadcasted live via WebEx. The WebEx log-in information to attend Day-1 and Day-2 symposium events and presentations is provided below. The NAI Chapter at NJIT Inauguration and Induction Ceremony will be streamed live via YouTube website at <https://youtu.be/kpndnId3Tu8>

Programs included:

URI Provost Summer Research Fellowships  
McNair Achievement Program  
Honors College Summer Scholar Program  
NSF REU and iCorps NJIT Site Programs  
Other Grant Funded Projects  
Other UG Student Summer Researchers

**2021 Undergraduate Summer Research and Innovation Symposium**

Agenda

July 29, 2021: Ballroom A&B, Student Campus Center

10.00 AM - 10.10 AM: Welcome Remarks  
Fadi Deek, Provost and Senior Executive Vice President  
Atam Dhawan, Senior Vice Provost for Research  
10.10 AM - 10.30 AM: Innovation to Applications  
Keynote Speaker: Dan Henderson, NJIT Board of Overseers,  
Inventor and Entrepreneur  
10.30 AM – 11.00 AM: URI External Advisory Board Panel  
Remembering Dr. James Stevenson  
11.00 AM - 12.30 PM: URI Summer Research Symposium Session - 1  
Bioscience and Bioengineering - 1  
12.30 PM - 1.15 PM: Lunch and Networking  
1.15 PM – 1.30 PM: Remembering Dr. Angelo J. Perna

- Laurent Simon and Durga Misra
- 1.30 PM – 2.30 PM: URI Summer Research Symposium Session -2  
Bioscience and Bioengineering - 2
- 2.30 PM – 2.45 PM: Coffee Break
- 2.45 PM – 4.00 PM: URI Summer Research Symposium Session -3  
Robotics and Machine Intelligence, Others: Architecture and Design

July 30, 2021, Ballroom A&B, Student Campus Center

- 9.30 AM - 11.00 AM: URI Summer Research Symposium Session -4  
Data Science and Management
- 11.00 AM - 12.30 PM: NAI-NJIT Chapter Launch and Induction Ceremony
- 11.00 AM – 11.15 AM: Opening Remarks  
Fadi Deek, Provost and Senior Executive Vice President  
Atam Dhawan, Senior Vice Provost for Research
- 11.15 AM – 11.30 AM: State of the NAI-NJIT Chapter  
Atam Dhawan, Senior Vice Provost for Research
- 11.30 AM – 11.45 AM: Keynote Speaker:  
Elizabeth Dougherty, Eastern Regional Outreach Director,  
U.S. Patent and Trademark Office (USPTO), and  
NAI Board of Directors
- 11.45 AM – 12.00 PM: NAI Chapter Induction Ceremony
- 12.00 PM – 12.30 PM: Closing Remarks, Networking and Lunch
- 12.30 PM – 2.00 PM: URI Summer Research Symposium Session -5  
Environment and Sustainability
- 2.00 PM – 3.00 PM: URI Summer Research Symposium Session -6  
Material Science and Engineering

July 30, 2021, Atrium, Student Campus Center

- 3.15 PM- 3.30 PM: Awards and Closing
- 3.30 PM – 4.30 PM: Reception

**2021 Undergraduate Summer Research Symposium WebEx Session  
Day-1 (July 29, 2021) Log-In Information for Attendees**

CONNECT with COMPUTER:

1) Click this [link](#):

<https://njit.webex.com/njit/j.php?MTID=m3dbc562fbd10655c95646dce87e1eb1f>

OR (alternatively)

Go to: [njit.webex.com](https://njit.webex.com)

Enter meeting number: 120 783 7691 Hit Enter.

2) Enter your name, email, and Event password Meeting password: RESEARCH (Note: uppercase) Click "Join Now"

3) Fill out the registration form and then click "Submit"

4) Join the session and connect your audio:

Before the session opens, an “Audio Connection” preview screen will pop-up. Select an audio connection method. To change a sound device, click the cog-wheel icon in the bottom right corner of the preview window. Then join the session.

CONNECT with PHOINENE:

Call: 1-650-479-3207; Enter meeting number: 120 783 7691 followed by #

Then, for Attendee ID number, hit #

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## **2021 Undergraduate Summer Research Symposium WebEx Session Day-2 (July 30, 2021) Log-In Information for Attendees**

CONNECT with COMPUTER:

1) Click this [link](#):

<https://njit.webex.com/njit/j.php?MTID=m52367a6e48804ff113e3e3255d10b6f7>

OR (alternatively)

Go to: [njit.webex.com](http://njit.webex.com)

Enter meeting number: 120 253 2820 Hit Enter.

2) Enter your name, email, and Event password Meeting password: RESEARCH (Note: uppercase)

Click "Join Now"

3) Fill out the registration form and then click "Submit"

4) Join the session and connect your audio:

Before the session opens, an “Audio Connection” preview screen will pop-up. Select an audio connection method. To change a sound device, click the cog-wheel icon in the bottom right corner of the preview window. Then join the session.

CONNECT with PHOINENE:

Call: 1-650-479-3207; Enter meeting number: 120 253 28201 followed by #

Then, for Attendee ID number, hit #

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## **NAI Chapter at Inauguration and Induction Ceremony Event July 30, 2021; 11.00 AM - 12.30 PM; Live Video-Streaming at YouTube**

The NAI Chapter at NJIT Inauguration and Induction Ceremony will be streamed live via YouTube website at <https://youtu.be/kpndnld3Tu8>

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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); Environmental Convergence Opportunities in Chemical, Bioengineering, Environmental, and Transport Systems (ECO-CBET); GERMINATION: Germination of Research Questions for Addressing Critical Societal Challenges

**NIH: 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); Identification and Characterization of Bioactive Microbial Metabolites for Advancing Research on Microbe-Diet-Host Interactions (R01); Technology Development for Single-Molecule Protein Sequencing (R21)

**Department of Defense/US Army/DARPA/ONR: 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: Water Innovation, Science, Engagement to Advance Water Reuse;** Improving Community Health through Microbial Source Tracking

**Department of Energy: 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:** Abdallah Khreishah (PI)

**Department:** Electrical and Computer Engineering

**Grant/Contract Project Title:** Block-chain based Search Engine

**Funding Agency:** Southern Data Science LLC

**Duration:** 06/16/21-05/31/24

**PI:** Vincent Oria (PI), Ali Mili (Co-PI), Cristian Borcea (Co-PI) and Reza Curtmola (Co-PI)  
**Department:** Computer Science  
**Grant/Contract Project Title:** CyberCorps Scholarship for Service (Renewal): Secure Computing Initiative  
**Funding Agency:** NSF  
**Duration:** 08/01/21-07/31/26

**PI:** Senjuti Basu Roy (PI)  
**Department:** Computer Science  
**Grant/Contract Project Title:** Collaborative Research: An Optimization Framework for Designing Derived Attributes with Humans-in-the-loop  
**Funding Agency:** NSF  
**Duration:** 10/01/20-09/30/23

**PI:** Jacob Chakareski (PI)  
**Department:** Informatics  
**Grant/Contract Project Title:** Collaborative Research: CNS Core: miVirtualSeat: Semantics-aware Content Distribution for Immersive Meeting Environments  
**Funding Agency:** NSF  
**Duration:** 10/01/21-09/30/24

**PI:** Wooyoung Choi (PI)  
**Department:** Mathematical Sciences  
**Grant/Contract Project Title:** Nonlinear Resonant Wave Interactions in Density-Stratified Flows  
**Funding Agency:** NSF  
**Duration:** 09/01/21-08/31/24

**PI:** Catalin Turc (PI)  
**Department:** Mathematical Sciences  
**Grant/Contract Project Title:** Optimized Domain Decomposition Methods for Wave Propagation in Complex Media  
**Funding Agency:** NSF  
**Duration:** 07/23/21-08/31/22

**PI:** Dibakar Datta (PI)  
**Department:** Mechanical and Industrial Engineering  
**Grant/Contract Project Title:** Collaborative Research: Fundamental Study of Niobium Tungsten Oxide Anodes for High-Performance Aqueous Batteries  
**Funding Agency:** NSF  
**Duration:** 09/01/21-08/31/24

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[In the News...](#)

**Cybersecurity Measures in Core Bipartisan Infrastructure Framework:** Leaders of the Senate Environment and Public Works Committee are touting their inclusion of cybersecurity considerations in a pair of bills that could form a significant part of the foundation for debate on a bipartisan infrastructure package Wednesday. “My hope is that today’s hearing will shed some light on the urgent need to protect our physical infrastructure and will help spur further action as we consider infrastructure legislation,” Committee Chairman Tom Carper, D-Del., said after a hearing Wednesday. Carper said the idea to hold the hearing came from Ranking Member Shelley Moore Capito, R-W.V., one of a handful of bipartisan senators who reached an agreement with the White House over an infrastructure deal. But there are still disagreements within the Senate and with the House over issues like how to pay for what President Joe Biden hopes will be a historic level of investment.

During the hearing, Capito highlighted the Surface Transportation Reauthorization Act and the Drinking Water and Wastewater Infrastructure Act for including resources to improve cybersecurity in the related sectors. On Monday, Senate Majority Leader Chuck Schumer announced that those two bills, along with two others that cleared their committees with overwhelming majorities—a rail and safety bill from the Commerce Committee and an energy infrastructure bill from the Energy and Natural Resources Committee—make up a core bipartisan infrastructure framework. He filed cloture on what he called a shell bill and said if senators can’t reach an agreement on legislative text for an infrastructure package by Thursday, he would make the four bills from the core bipartisan framework the content of a pending substitute amendment for the infrastructure debate. More information is posted on the [NextGov website](#).

**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: July 26, 2021 11:30 AM to 12:30 PM; 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](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: Convergence Accelerator Expo 2021**

**Sponsor: NSF**

**When: July 28-29, 2021 1A:00 PM to 4:00 PM**

**Website:** [https://www.nsf.gov/events/event\\_summ.jsp?cntn\\_id=303039&org=NSF](https://www.nsf.gov/events/event_summ.jsp?cntn_id=303039&org=NSF)

**Brief Description:** The NSF's Convergence Accelerator is hosting Convergence Accelerator Expo 2021, scheduled virtually for July 28 – 29, 2021 from 10 a.m. to 4 p.m. (ET)

This exciting event highlights the National Science Foundation Convergence Accelerator's portfolio in an exhibition format, like a big science fair. Attendees will have the opportunity to see unique solutions across multiple convergence research track topics that are focused on national-scale societal challenge.

**JOIN US. IT'LL BE WORTH IT.**

During the event attendees will have the opportunity to see more than 35 live solution demos focused on national-scale societal challenges, network with other researchers, innovators, and business and technical practitioners from academia, industry, government, non-profit, and other communities; as well as learn about the Convergence Accelerator program.

- **Engage 35+ innovative solutions focused on societal impact** — Demos are scheduled every 15 minutes
- **Expand Your Network** — Meet new people outside of your expertise and discipline
- **Accelerate Solutions into Practice** — Support a funded team in accelerating their solution forward through new partnerships or investment
- **Connect with the Convergence Accelerator** — Learn about our unique differentiators, meet the team, and ask questions

**FEATURED TRACK TOPICS**

- **Track A: Open Knowledge Networks:** Knowledge networks correlate data to create new understandings. The Convergence Accelerator is funding the creation of nonproprietary infrastructure for building Open Knowledge Networks.
- **Track B: Future of Work:** AI, machine learning, and robotics are shifting the future of work. The Convergence Accelerator is funding solutions to train, reskill, upskill the current and future workforce with industry needs and jobs of the future, as well as build a talent pipeline to stimulate the U.S. workforce.
- **Track C: Quantum Technology:** Quantum technologies can improve the U.S. industrial base, create jobs, and provide significant progress toward economic and societal needs. The Convergence Accelerator is funding solutions for a diverse set of applications.
- **Track D: AI-Driven Data Sharing & Modeling:** AI research and development requires access to high-quality datasets and environments, and testing and training resources. The Convergence Accelerator is funding solutions to address data and model-related challenges and data types.
- **Special Track—Future of Manufacturing, EcoManufacturing Team:** The EcoManufacturing team, funded by the NSF Directorate of Engineering, participated in the Convergence Accelerator's innovation curriculum to speed their research toward major science advances sustainable manufacturing practices.

**To Register:** To register for Expo 2021 visit, [nsf-ca.vfairs.com](https://nsf-ca.vfairs.com). Registration is complimentary.

**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](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](https://nsf.zoomgov.com/webinar/register/WN_7-SIyqBARluh94Vz8hPtWQ)

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## [Grant Opportunities](#)

### [National Science Foundation](#)

**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](mailto:info@nsfgrfp.org)

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**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](mailto:sjsmith@nsf.gov)

- Lynnette D. Madsen, Program Director DMR/CER, telephone: (703) 292-4936, email: [lmadsen@nsf.gov](mailto:lmadsen@nsf.gov)
- Tomasz Durakiewicz, Program Director, DMR/CMP, telephone: (703) 292-4892, email: [tdurakie@nsf.gov](mailto: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](mailto:DRLAISL@nsf.gov)

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**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: [vccarter@nsf.gov](mailto:vccarter@nsf.gov)

- Pushpa Ramakrishna, telephone: (703) 292-2943, email: [pusramak@nsf.gov](mailto: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](mailto:jepstein@nsf.gov)

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

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## **Grant Program: Environmental Convergence Opportunities in Chemical, Bioengineering, Environmental, and Transport Systems (ECO-CBET)**

**Agency:** National Science Foundation NSF 21-596

**RFP Website:** <https://www.nsf.gov/pubs/2021/nsf21596/nsf21596.htm>

**Brief Description:** Accordingly, the Environmental Convergence Opportunities in Chemical, Bioengineering, Environmental, and Transport Systems (ECO-CBET) solicitation will support fundamental research activities that confront vexing environmental engineering and sustainability problems by developing foundational knowledge underlying processes and mechanisms such that the design of innovative new materials, processes, and systems is possible. Projects should be compelling and reflect sustained, coordinated efforts from highly interdisciplinary research teams. A key objective of the solicitation is to encourage dialogue and tightly integrated collaborations wherein members of the chemical process systems, transport phenomena, and bioengineering research communities engage with environmental engineering and sustainability experts to spark innovation and arrive at unanticipated solutions. Furthermore, training the future workforce to successfully engage in discipline-transcending research will support continued innovation toward surmounting the complex environmental and sustainability challenges facing our global community.

Process science and engineering, in the context of this solicitation, is broadly defined to include all programmatic interests of the National Science Foundation (NSF) Directorate for Engineering's (ENG) Division of Chemical, Bioengineering, Environmental, and Transport Systems (CBET). These interests are outlined in the "core" program descriptions:

Chemical Process Systems (CPS) Cluster

- [Catalysis](#)
- [Electrochemical Systems](#)
- [Interfacial Engineering](#)
- [Process Systems, Reaction Engineering, and Molecular Thermodynamics](#)

Engineering Biology and Health (EBH) Cluster

- [Biophotonics](#)
- [Biosensing](#)
- [Cellular and Biochemical Engineering](#)
- [Disability and Rehabilitation Engineering](#)

- [Engineering of Biomedical Systems](#)

Environmental Engineering and Sustainability (EES) Cluster

- [Environmental Engineering](#)
- [Environmental Sustainability](#)
- [Nanoscale Interactions](#)

Transport Phenomena (TP) Cluster

- [Combustion and Fire Systems](#)
- [Fluid Dynamics](#)
- [Particulate and Multiphase Processes](#)
- [Thermal Transport Processes](#)

**Awards:** Continuing Grant; Anticipated Funding Amount: \$8,500,000

**Letters of Intent:** Not Required

**Preliminary Proposal Due Date(s) (required) (due by 5 p.m. submitter's local time):**

October 01, 2021

**Full Proposal Submission Deadline: Full Proposal Deadline(s) (due by 5 p.m. submitter's local time):**

January 31, 2022

**Contacts:** Christina Payne, telephone: (703) 292-2895, email: [cpayne@nsf.gov](mailto:cpayne@nsf.gov)

- Bruce K. Hamilton, telephone: (703) 292-7066, email: [bhamilto@nsf.gov](mailto:bhamilto@nsf.gov)
- Robert McCabe, telephone: (703) 292-4826, email: [rmccabe@nsf.gov](mailto:rmccabe@nsf.gov)

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## **Grant Program: GERMINATION: Germination of Research Questions for Addressing Critical Societal Challenges**

**Agency: National Science Foundation NSF 21-594**

**RFP Website:** <https://www.nsf.gov/pubs/2021/nsf21594/nsf21594.htm>

**Brief Description:** The NSF Directorate for Engineering GERMINATION program aims to foster the development of pedagogical frameworks, platforms and/or environments to enable participants to formulate research questions and ideas with potentially transformative outcomes. The extraordinary response of the STEM research community to the COVID-19 pandemic, exemplified by the record-breaking speed of novel vaccine development, highlights the outstanding capabilities at all levels of the research enterprise. The GERMINATION program seeks to harness the immense capacities of academic researchers to similarly address other critical global challenges through supporting the development of new pedagogical approaches that train researchers to formulate and develop key research questions.

The GERMINATION program invites proposals to design, test, evaluate and implement pedagogical frameworks, platforms and/or environments that enable participants to formulate research questions and ideas that have the potential to address critical societal challenges. In order to catalyze development of novel approaches, while simultaneously expanding the reach of pilot approaches which are already exhibiting promise, two tracks will be supported in Fiscal Year (FY) 2022: **GERMINATION Innovation** and **GERMINATION Expansion**. **GERMINATION Innovation** awards will fund projects to design, test and evaluate previously unexplored pedagogical frameworks, platforms and/or environments that have the explicit goal of enabling the participants to formulate research questions with potentially transformative outcomes. Projects submitted to the Innovation track must use the EARly-concept Grants for Exploratory Research (EAGER) proposal type (see PAPPG Chapter II). **GERMINATION Expansion** awards will fund projects that focus on development, implementation and scaling of evidence-based strategies for achieving GERMINATION goals. Projects supported under the Expansion track should focus on scaling previously piloted approaches with demonstrated efficacy to a regional or national sphere of activity, and will likely involve development of new collaborative relationships to establish networks capable of implementation beyond the pilot institution.

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

4-5 GERMINATION Innovation awards (EAGERs) and 4-5 GERMINATION Expansion awards depending on funding availability and quality of proposals received.

4-5 GERMINATION Innovation awards are anticipated; the budget for GERMINATION Innovation proposals is between \$100,000 and \$300,000 total for a duration of one to two years. These GERMINATION Innovation awards will be made using the EAGER proposal type. 4-5 GERMINATION Expansion awards are anticipated; the budget for GERMINATION Expansion proposals is up to \$500,000 total for a duration of up to three years.

**Limit on Number of Proposals per Organization: 1; Only 1 proposal may be submitted by a single organization.**

**Internal Review and Competition for Institutional Submission:** If interested, please submit a Letter of Intent (including the information on title, key investigators, summary with intellectual merit and broader impact, and a brief outline for intended budget request and cost sharing to your college deans by July 21, 2021. The college deans should forward only one selected Letter of Intent after college-level review to Atam Dhawan at [dhawan@njit.edu](mailto:dhawan@njit.edu) for institutional review by July 25, 2021. The notification of the selected Letter of Intent will be provided after the institutional review by July 27.

**Letters of Intent:** August 27, 2021

For proposals that will be submitted to the GERMINATION Expansion track, LOI submission through FastLane is required. For proposals that will be submitted to the GERMINATION Innovation track, a research concept outline must be submitted by Email.

**Full Proposal Submission Deadline:** October 29, 2021

**Contacts** Louise R. Howe, Program Director, telephone: (703) 292-2548, email: [lhowe@nsf.gov](mailto:lhowe@nsf.gov)

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## [National Institutes of Health](#)

**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](mailto:AITrainingHelpDesk@niaid.nih.gov)

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### **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](mailto:elena.koustova@nih.gov)

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**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](mailto:nraghavachari@mail.nih.gov)

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**Grant Program: Identification and Characterization of Bioactive Microbial Metabolites for Advancing Research on Microbe-Diet-Host Interactions (R01 Clinical Trial Not Allowed)**

**Agency:** National Institutes of Health PAR-21-253

**Website:** <https://grants.nih.gov/grants/guide/pa-files/PAR-21-253.html>

**Brief Description:** Research objectives that could be supported include but are not limited to:

1. Determination of the molecular identity of novel gut microbial metabolites, including circulating microbial metabolites in relevant human biological samples.
2. Identification and characterization of the source of microbial metabolites, (including dietary, drug, or other endogenous or environmental sources); the characterization may encompass the microbial taxa or consortia involved, and the bacterial genes and enzymatic pathways leading to their production.
3. Initial characterization of biological function and translational relevance of the identified metabolites:
  - a. Using appropriate systems such as *in silico*, *In vitro*, *ex-vivo* organoids, artificial gut simulators such as Artificial gut, microfluidics-based Human Microbiome Coculture systems, humanized animal models, Bacterial Gene Clusters analysis; and/or
  - b. Technology development of appropriate methods or models for analyzing these metabolites in biological samples.

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

**Letter of Intent:** September 20, 2021

**Proposal Deadline:** October 20, 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:** Padma Maruvada; National Institute of Diabetes, and Digestive and Kidney Diseases (NIDDK); Telephone: 301-594-8884; Email: [maruvadp@mail.nih.gov](mailto:maruvadp@mail.nih.gov)

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**Grant Program: Technology Development for Single-Molecule Protein Sequencing (R21 Clinical Trial not allowed)**

**Agency:** National Institutes of Health RFA-HG-21-002

**Website:** <https://grants.nih.gov/grants/guide/rfa-files/RFA-HG-21-002.html>

**Brief Description:** This FOA seeks to fund technology development research efforts in instrumentation innovation and sample preparation/processing approaches for single-molecule protein sequencing. High-risk/high-payoff applications are appropriate to achieve the goals of this FOA. The technology development proposed should have the potential to significantly propel the field of SMPS forward in the next five years, and have the potential to have a large impact on future studies of genome biology or genome function. The proposed research also must have the clear potential to scale proteome wide. The technology proposed can innovate substantially novel approaches or significantly improve existing methodologies for SMPS. Applications proposing innovations that provide mere incremental improvements to existing technologies are not considered appropriate for this FOA. The FOA deliberately

does not specify cost, quality, scale, sensitivity, dynamic range, throughput, or other key metrics since achievable endpoints are likely to improve during the course of this initiative and can substantially differ from one technology to another. However, the applicant must propose quantitative metrics so progress can be evaluated, and have convincing rationale that the proposed technology has the potential to scale long term and to achieve a throughput compatible with widespread adoption by the proteogenomics, biomedical and clinical research community.

**Award:** The combined budget for direct costs for the two-year project period may not exceed \$275,000. No more than \$200,000 may be requested in a single year.

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

**Proposal Deadline:** October 1, 2021; June 15, 2022; June 15, 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:** Padma Maruvada; National Institute of Diabetes, and Digestive and Kidney Diseases (NIDDK); Telephone: 301-594-8884; Email: [maruvadp@mail.nih.gov](mailto:maruvadp@mail.nih.gov)

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### [Department of Defense/US Army/DARPA/ONR/AFOSR](#)

**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](mailto:EMBER@darpa.mil)

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**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](mailto:MINT@darpa.mil)

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**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](mailto:help@eBRAP.org)

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**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 to the existing state of practice.

**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](mailto:HR001121S0032@darpa.mil)

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### **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](mailto:dynamicmaterials@us.af.mil) (703) 588-8436; CALVIN D. SCOTT, AFOSR/RBKC Senior Procurement Analyst Email: [afosr.baa@us.af.mil](mailto: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](mailto: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 SAEI 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](mailto:Carls.Matthew.L@dol.gov)

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## [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 projects<sup>2</sup> 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](mailto:research@eda.gov)

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**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](mailto:diane.brown@noaa.gov).

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**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](#)

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**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](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](mailto: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](mailto:oer.ffo2022@noaa.gov)

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**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](mailto:lamar.revis@noaa.gov)

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## [EPA](#)

### **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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### **Grant Program: Improving Community Health through Microbial Source Tracking**

**Agency:** Environmental Protection Agency EPA-GM-2021-MIST

**Website:** <https://www.grants.gov/web/grants/view-opportunity.html?oppId=333927>

**Brief Description:** This Request for Applications (RFA) solicits applications from eligible entities for grants and/or cooperative agreements to be awarded. These awards will improve water quality, habitat, community resilience, and environmental education in the Gulf of Mexico watershed within the Continental United States (see individual funding opportunities for geographic specifications). For a list of projects funded by the Gulf of Mexico Division (GMD) under previous RFAs, please see the [EPA Gulf of Mexico story map](#). EPA is seeking applications for projects within the four funding opportunities listed below, each of which has a separate Funding Opportunity Number (FON) and is separately posted on [www.grants.gov](http://www.grants.gov). Applicants must apply for the specific funding opportunity they are interested in. The four funding opportunities and associated FONs are:

- **Improving Community Health through Microbial Source Tracking** (FON: EPA-GM-2021-MiST)
- **Trash Free Waters – Preventing More, Picking Up Less** (FON: EPA-GM-2021-TFW)
- **Building Community Resilience Through the Reduction and Prevention of Nonpoint Source Pollution** (FON: EPA-GM-2021-NPS)
- **STEM Career Development for High School Aged Youth** (FON: EPA-GM-2021-HSCD)

**Award:** Up to \$1,500,000. Anticipated Funding Amount: Approximately \$9 million

**Letter of Intent:** Contact the program director.

**Submission Deadline:** August 6, 2021

**Contact:** U.S. Environmental Protection Agency Gulf of Mexico Division ATTN: Rachel Houge 2510 14th Street – Suite 1212 Gulfport, MS 39501 [Rachel Houge](#)

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## [Department of Energy](#)

**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](mailto:mandy.aden@ee.doe.gov)

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**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](mailto: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](mailto:HQ-AIST@mail.nasa.gov)

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### **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](mailto:jeff.s.morrill@nasa.gov)

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### **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](mailto:HQ-STMDFO@nasaprs.com)

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### **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](mailto:simon.p.plunkett@nasa.gov)

Jeff Morrill Telephone: (202) 358-3744 Email: [jeff.s.morrill@nasa.gov](mailto: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](mailto:humanitiesconnections@neh.gov)

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### **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](mailto: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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