

NJIT Research Newsletter

Issue: ORN-2021-27

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

American-Made Challenges

Solar Prize Round 5

<https://americanmadechallenges.org/solarprize/round5/index.html>

The American-Made Solar Prize is a prize competition designed to energize U.S. solar innovation through a series of contests and the development of a diverse and powerful support network that leverages national laboratories, energy incubators, and other resources across the country. Rounds 1 through 4 of the Solar Prize focused on solar manufacturing and hardware components. Solar Prize Round 5 is structured with two tracks that focus separately on hardware and software components to allow more entrepreneurs to compete in the solar innovation space.

The Solar Prize encourages the rapid development of innovative solar energy solutions capable of addressing the tough challenges facing the solar industry. Solar Prize competitors participate in three contests—the Ready! Set! and Go! Contests—to transform their ideas into reality in months, rather than years. The Hardware Track and Software Track follow the same three-contest structure but compete for separate prizes. Participants have the chance to win millions in cash prizes, support vouchers, and other resources to help them advance in the competition and accelerate the development of their solutions. Both the Hardware Track and Software Track follow the same parallel structure and timeline but compete for separate prizes.

- Ready! Contest submission deadline: Oct. 5, 2021
- Ready! Contest semifinalists announced and Set! Contest begins: Anticipated December 2021
- Set! Contest submission deadline: Anticipated April 2022
- Set! Contest finalists announced and Go! Contest begins: Anticipated April 2022
- Go! Contest submission deadline: Anticipated September 2022
- Go! Contest winners announced: Anticipated September 2022

New Jersey Alliance for Clinical and Translational Science (NJACTS)

<https://njacts.rbhs.rutgers.edu/>

NJ ACTS Translational Medicine and Science Symposium - September 22 and 23, 2021

<https://njacts.rbhs.rutgers.edu/event/nj-acts-first-annual-symposium/>

The first NJ ACTS Scientific Symposium will be held **virtually** on September 22 from 12-6:00 pm and 23 from 8:00am - 1:00 pm. The goal of the Symposium is to bring research from the NJ ACTS academic communities of Rutgers, Princeton and NJIT together to present the best new clinical and translational research and build collaborative partnerships. The two-day conference will feature sessions on four hot topics:

- Inclusion, Diversity and Equity in AI and Machine Learning
- Social and Environmental Determinants of Health in the Urban Setting
- Clinical Trial Science after a Pandemic
- Biomarker Exploration in the Heterogeneity of Disease

Each session will include a keynote by an internationally recognized researcher and two presentations from within the NJ ACTS community. Additional NJ ACTS research will be presented at the poster session. There will be additional opportunities for networking, and for learning about the NJ ACTS cores and the resources and services they can provide.

The Symposium is open to all interested faculty, postdocs, students and others at Rutgers, Princeton and NJIT.

Registration: To register for the Symposium, follow these links: <https://redcap.rwjms.rutgers.edu/surveys/?s=JEMPLRDFLC8> OR <https://redcap.link/u5e4bgcu>

Abstracts: We invite abstracts from the Rutgers, Princeton and NJIT research communities. Abstracts will be reviewed by the session co-chairs and two abstracts will be selected for presentations and others for the poster session. **Deadline:** The Abstract must be submitted by August 6 at midnight, using the on-line form available at:

<https://redcap.rwjms.rutgers.edu/surveys/?s=WYAFNDLXER> OR <https://redcap.link/egzymo9t>.

Questions? Email NJACTS@rbhs.rutgers.edu

2021 NJIT Undergraduate Research and Innovation (URI) Summer Research Symposium and Innovation Day

July 29-30, 2021, Ballroom A & B, Campus Center

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

(Please log-in using your UCID to access information posted on the NJIT Google drive)

The 2021 NJIT Summer Research 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 working during the summer with various URI programs.

About 130 undergraduate students will present their summer research work at the symposium. 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 45 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.

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

Detailed information and agenda can be accessed using the shared NJIT Google drive link <https://drive.google.com/drive/folders/1vgyH4999G6fTcQqx0h2hXaET4Oaj1AOZ?usp=sharing> (please log-in using your UCID).

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Grant Opportunity Alerts

Keywords and Areas Included in the Grant Opportunity Alert Section Below

NSF: 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; Division of Physics: Investigator-Initiated Research Projects (PHY); Community Facility Support: Synchrotron-based analytical capabilities advancing Earth and Environmental Sciences research and training; Biophotonics; Environmental Sustainability

NIH: 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); NEI Vision Research Epidemiology Grant (UG1); NIA Research and Entrepreneurial Development Immersion (REDI): Entrepreneurship Enhancement Award (R25)

Department of Defense/US Army/DARPA/ONR: 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: NRCS's Conservation Innovation Grants (CIG) Classic Program; 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: Climate Program Office FY2022; Manufacturing USA Technology Roadmap (MfgTech) Grant Program; NIST Public Safety Innovation Accelerator Program – Artificial Intelligence for IoT Information Prize Competition; Oceanic and Atmospheric Research (OAR); FY2021 to FY2023 NOAA Broad Agency Announcement (BAA)

EPA: Improving Community Health through Microbial Source Tracking

Department of Energy: Request for Information on Integrating Electric Vehicles onto the Electric Grid; 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"; NASA Innovative Advanced Concepts (NIAC) Phase I; ROSES 2021: Instrument Incubator Program; 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: Linda Cummings (PI) and Lou Kondic (Co-PI)

Department: Mathematical Sciences

Grant/Contract Project Title: MSA: GOALI: Predicting performance and fouling of membrane filters

Funding Agency: NSF

Duration: 09/15/16-08/31/22

PI: David Bader (PI)

Department: Institute of Data Science

Grant/Contract Project Title: EAGER: High Performance Algorithms for Interactive Data Science at Scale

Funding Agency: NSF

Duration: 03/01/21-12/15/22

PI: Ashish Borgaonkar (PI)
Department: School of Applied Engineering and Technology
Grant/Contract Project Title: Pre-Apprenticeship in Career Education (PACE) Program
Funding Agency: NJ Department of Labor
Duration: 06/15/21-12/15/22

PI: Namas Chandra (PI)
Department: Center for Injury, Biomechanics, Materials and Medicine
Grant/Contract Project Title: Brain macrophages after brain injury leads to negative behavioral outcomes
Funding Agency: NIH
Duration: 08/01/21-07/31/24

PI: Veronica Guzman (PI)
Department: Center for Pre-College Programs
Grant/Contract Project Title: TRIO - UPWARD BOUND
Funding Agency: US BoE
Duration: 09/01/17-08/31/22

PI: Monique Paden-Hutchinson (PI)
Department: Center for Pre-College Programs
Grant/Contract Project Title: TRIO - UPWARD BOUND (2)
Funding Agency: US BoE
Duration: 09/01/17-08/31/22

PI: Monique Paden-Hutchinson (PI)
Department: Center for Pre-College Programs
Grant/Contract Project Title: TRIO - UPWARD BOUND (3)
Funding Agency: US BoE
Duration: 09/01/17-08/31/22

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In the News...

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

Promoting Trustworthy AI in Government: President Joe Biden’s decision to elevate the director of the Office of Science and Technology Policy to a Cabinet-level position underscores the importance of artificial intelligence in America’s future. His selection of Alondra Nelson to be deputy director of OSTP shows that unlocking AI’s potential will be done with a focus on racial and gender equity. Nelson, a Black woman whose research focuses on the intersection of science, technology and social inequality, has said that technologies like AI “reveal and reflect even more about the complex and sometimes dangerous social architecture that lies beneath the scientific progress that we pursue.” There’s no doubt that ethics must be foundational to the design, development and acquisition of AI capabilities, and that government agencies should embed trustworthy AI as part of a holistic strategy to transform the way government operates.

Agency leaders can start by identifying areas where AI can transform their internal operations and improve their public-facing mission services with minimal risk of bias. From there, they can prioritize areas that provide immediate value and build momentum, and those with long-term potential to improve mission delivery. To successfully scale AI, leaders will need to establish trust in AI within their agencies, with other government and private sector stakeholders, and with the public. In championing the ethical use of AI, they must not only ask, *can* we do this, but *should* we do this and *how* can we do this in a way that promotes equity. More information is posted on the [NextGov website](#).

Air Force Wants to Build DevSecOps Enclave for Secure Processing: The Air Force wants to build a multi-level security network to enable secure processing for the Defense Department’s Joint All-Domain Command and Control concept, according to a [recent solicitation](#). As part of a broader JADC2 and Advanced Battle Management System, or ABMS, commercial solutions opening, the Air Force is looking for companies that can build a DMZ, which it describes as “an internet-facing area to vet and test newly acquired tools,” as well as an unclassified DevSecOps enclave for developing applications in-house, according to a call attached to the CSO announcement.

“A key feature of secure processing will be to develop a multi-level security (MLS) technology set that enables moving up and down in security level where feasible, no matter the hardware device, transportation method, or environment,” the CSO call reads. Secure processing is one of several technology focus areas under which the Air Force intends to issue calls as part of the CSO. Other areas include digital architecture, standards and concepts; sensor integration; data; connectivity; applications; and effects integration. More information is posted on the [NextGov website](#).

JEDI’s Ghost Will Bring Bitter Rivals Together: Now that the Defense Department has canceled its signature \$10 billion enterprise cloud computing contract, what’s next for the military’s cloud needs? Defense Department officials say that the solution will look a lot like a marriage between what’s being offered by Microsoft’s Azure and Amazon Web Services. It won’t be the single massive cloud envisioned as the Joint Enterprise Defense Infrastructure, affectionately called JEDI, but the bottom line from [Tuesday’s announcement](#) is that the Pentagon is not going back to the days of small, distributed cloud environments that don’t interconnect. Rumors of the JEDI cloud contract’s cancellation [had been circulating for weeks](#) and there have been clues recently as to what kind of cloud the Pentagon wants. Two weeks ago, Lt. Gen. Dennis Crall, the Joint Staff’s chief information officer, and director of command, control, communications and computers/cyber spoke about the possible collapse of the JEDI contract during the [Defense One Tech Summit](#). Whatever the outcome of the legal fight over JEDI, he said, the Pentagon would continue to pursue an enterprise cloud option, if a bit messier than the original JEDI concept.

“I do believe that the solution that we’ve asked for still holds true today,” Crall said, but he described the likely post-JEDI solution as “a composite.” “No matter what solution is decided upon, there will always be some level of menu that’s required. The only difference would be scale,” he said. Scale is the operative word. Defense Department officials have made clear that they’re not going back to the old days of many clouds from tiny vendors with no central cloud environment for data access and distribution. A cloud on the scale of what AWS, Microsoft, or Google can provide is essential to realize the Pentagon’s [dream of joint all-domain command and control, or JADC2](#). More information is posted on the [NextGov website](#).

National Lab Researchers Boost Chip Design Processes With Artificial Intelligence: Argonne National Laboratory researchers uncovered and continue to explore new ways to advance a semiconductor chips design technique using artificial intelligence. They present several AI-based approaches to optimize atomic layer deposition, or ALD, processes in a recently published [study](#). The method produces super-

fine films of materials, like one atom thick. It also partly underpins the making of computer chips, which are now at the center of a global supply chain shortage that's pushed up prices of all sorts of electronics. "The effort predates the current chip shortage issues, but we have been looking at semiconductor processing and its manufacturing challenges for a long time," ARNL Principal Materials Scientist Angel Yanguas-Gil told *Nextgov* Thursday.

Yanguas-Gil has long pursued AI-aligned semiconductor innovation, including helping pioneer a cutting-edge neuromorphic computer chip modeled off [insect brains](#). He explained chasing fundamental breakthroughs that could profoundly impact advanced manufacturing is a priority for Argonne. Yanguas-Gil's group received funding from the Energy Department's Technologist in Residence Program, among others, which he said, "encouraged [them] to look at the industry as-a-whole." The lab has a strong ALD program, he noted, and their established connections with the private sector helped insiders fully grasp the existing key challenges. More information is posted on the [NextGov website](#).

House Panel Approves DHS Bill with 'Historic' Funding for Cybersecurity: A bill to fund the Department of Homeland Security now heads to the full Appropriations Committee in the House after passing unopposed through the related subcommittee with \$2.42 billion for the Cybersecurity and Infrastructure Security Agency. "As the nature of the threats facing the country changes, the missions and investments of the Department of Homeland Security must quickly adapt and respond. This bill makes historic investments in cyber and infrastructure security," said Rep. Lucille Roybal-Allard, D-Calif., chairwoman of the Appropriations subcommittee on homeland security.

The bill approved Wednesday—which includes funding to deal with contentious immigration issues and a host of other things such as defending the U.S. against Russian aggression in the Arctic—makes \$52.81 billion available to DHS in discretionary funding, \$934 million more than for 2021. Roughly a third of that increase—\$397.4 went to boosting CISA, DHS' newest agency. After the committee released a draft of the bill Tuesday, Rep. Jim Langevin, D-R.I., a member of the Cybersecurity Solarium Commission, thanked Roybal-Allard for CISA's funding level in the bill, which is also \$288 million more than President Joe Biden requested for the agency. More information is posted on the [NextGov website](#).

NSF and DOE Future Acts: National Science Foundation for the Future Act and Department of Energy Science for the Future Act. Both bills, with amendments, passed and are now headed to the House Floor, where Democratic leaders could decide to add additional amendments before bringing them to a vote. And then, as a reminder, once passed by the full House, these bills will have to be reconciled with the more expansive Senate-passed U.S. Innovation and Competition Act.

- National Science Foundation (NSF) for the Future Act
 - This is the first comprehensive reauthorization of the NSF in more than 10 years.
 - The legislation considers a 5-year development pack.
 - It strategically builds on the NSF's existing strength while pushing the agency in a new direction.
 - It includes bipartisan ideas and has endorsements from the most diverse group of stakeholders including the Association of American Universities, American Chemical Society etc.
- U.S. Department of Energy (DOE) Science for the Future Act
 - The DOE Office of Science supports research in the physical and energy applications of sciences.
 - It ensures the Office of Science remains the world leader.
 - Clean energy future is an important investment.
 - The bipartisan bill is the first comprehensive authorization for DOE's half of the non-defense R&D budget.
 - The bill ensures the office of construction projects and upgrades the building to fit the needs.
 - Endorsements of this bill include the U.S. Chamber of Commerce, the University of Texas, and the American Physical Society.

Additionally last Thursday, the White House launched the National Artificial Intelligence Research Resource Task Force aimed at making more government data available to artificial intelligence (AI) researchers, as part of the Biden Administration's broader push to keep the U.S. as a leader in AI. The Task Force, a group of 12 members from academia, government, and industry led by officials from the White House Office of Science and Technology Policy and NSF, will draft and implement the National AI Research Resource, a shared research infrastructure that will provide researchers with an unprecedented level of data. Additionally, soon the National AI Advisory Committee will be established to provide recommendations and advice on a wide array of AI topics, including on the implications of AI on the future of learning and workers; research and development; economic competitiveness; societal, ethical, legal, safety, and security matters; commercial application; and opportunities for international engagement.

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[Webinar and Events](#)

Event: EHR Core Research Outreach Webinar Program Webinar

Sponsor: NSF

When: July 12, 2021 3:00 PM to 4:00 PM

Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=302948&org=NSF

Brief Description: The EHR Core Research (ECR:Core) program officers will provide an overview of the funding opportunities available in the new EHR Core Research Solicitation ([NSF 21-588](#)) and answer questions from participants. The webinar has been recorded and posted so those who cannot attend can listen to the webinar at any time. We will also send the webinar slides to those who attend each session. We suggest reviewing solicitation [NSF 21-588](#) before the webinar to prepare your questions for program officers.

To Join the Webinar: Register for webinar:

[Wednesday, July 7, 2:30pm ET](#)

[Monday, July 12, 3:00pm ET](#)

Event: Summer 2021: IRES Virtual Office Hours

Sponsor: NSF

When: July 19, 2021 11:30 AM to 12:30 PM; 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

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=VXpGRtBpZXlxY0hYNGdFWVlyUWp1Zz09>

Event: DMS Virtual Office Hours

Sponsor: NSF

When: July 22, 2021 2:00 PM to 3:00 PM

Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=303014&org=NSF

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

To Join the Webinar: Participants should register (and may do so in advance) at the web page https://nsf.zoomgov.com/webinar/register/WN_EwhyTIKWQ8GUmZ--vWfVxA

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[Grant Opportunities](#)

[National Science Foundation](#)

Grant Program: Secure and Trustworthy Cyberspace Frontiers (SaTC Frontiers)

Agency: National Science Foundation NSF 21-597

RFP Website: <https://www.nsf.gov/pubs/2021/nsf21597/nsf21597.htm>

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

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

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

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

Letters of Intent: Required by September 07, 2021

Full Proposal Submission Deadline: November 17, 2021

Contacts: Jeremy Epstein, Program Director, CISE/CNS, telephone: (703) 292-8950, email: jepstein@nsf.gov

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

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

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

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 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

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

Agency: National Science Foundation NSF 21-593

RFP Website: <https://www.nsf.gov/pubs/2021/nsf21593/nsf21593.htm>

Brief Description: The Division of Physics (PHY) supports physics research and the preparation of future scientists in the nation's colleges and universities across a broad range of physics disciplines that span scales of space and time from the largest to the smallest and the oldest to the youngest. The Division is comprised of disciplinary programs covering experimental and theoretical research in the following major subfields of physics: Atomic, Molecular and Optical Physics; Elementary Particle Physics; Gravitational Physics; Integrative Activities in Physics; Nuclear Physics; Particle Astrophysics; Physics at the Information Frontier; Physics of Living Systems; Plasma Physics; and Quantum Information Science. Principal Investigators (PIs) are encouraged to consider including specific efforts to increase diversity of the physics community and broaden participation of under-represented groups in Science, Technology, Engineering, and Mathematics (STEM).

Additional Information

The Division of Physics strongly encourages single proposal submission for possible co-review rather than submission of multiple related proposals to several programs.

PIs considering submitting more than one proposal to this solicitation, or who already have an active PHY award, are encouraged to first consult with the relevant program officer(s) before preparing a new proposal. This does not apply to awards from or submissions to the MRI, REU, and/or center programs, or in cases of renewal proposals.

Awards: Standard Grant or Continuing Grant or Cooperative; Anticipated Funding Amount: \$90,000,000

Letters of Intent: Not Required

Full Proposal Submission Deadline:

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

November 15, 2021

Third Monday in November, Annually Thereafter

Plasma Physics Deadline

November 24, 2021

Fourth Wednesday in November, Annually Thereafter

AMO - Theory and Experiment; Gravitational Physics - Theory and Experiment; LIGO Research Support; Integrative Activities in Physics

December 07, 2021

First Tuesday in December, Annually Thereafter

Nuclear Physics - Theory and Experiment; Elementary Particle Physics - Experiment; Particle Astrophysics - Experiment

December 14, 2021

Second Tuesday in December, Annually Thereafter

Elementary Particle Physics - Theory; Particle Astrophysics and Cosmology - Theory; Quantum Information Science; Physics of Living Systems

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

- Anthony G. Calamai, Atomic, Molecular and Optical Physics - Experiment, telephone: (703) 292-4594, email: acalamai@nsf.gov
- Mark Coles, Projects and Facilities, telephone: (703) 292-4432, email: mcoles@nsf.gov

Grant Program: Community Facility Support: Synchrotron-based analytical capabilities advancing Earth and Environmental Sciences research and training

Agency: National Science Foundation NSF 21-592

RFP Website: <https://www.nsf.gov/pubs/2021/nsf21592/nsf21592.htm>

Brief Description: The NSF Division of Earth Sciences (EAR) hereby solicits proposals to develop, manage, operate, and support user access to U.S. synchrotron-based analytical capabilities necessary to advance Earth and environmental sciences research and training. EAR seeks proposals that prioritize support for the U.S. Earth and environmental science community supported by EAR core or special programs (see <https://www.nsf.gov/funding/programs.jsp?org=EAR> for a current list of funding programs in EAR).

Awards: Cooperative Agreement; Estimated Number of Awards: 1; **Anticipated Funding Amount:** \$35,000,000

Limit on Number of Proposals per Organization: 1

Letters of Intent: Not Required

Full Proposal Submission Deadline: March 04, 2022

Contacts: Russell C. Kelz, telephone: (703) 292-4747, email: rkelz@nsf.gov

- David D. Lambert, telephone: (703) 292-8558, email: dlambert@nsf.gov
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Grant Program: Biophotonics

Agency: National Science Foundation NSF PD 21-7236

RFP Website:

https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505719&org=NSF&sel_org=NSF&from=fund

Brief Description: The **Biophotonics** program is part of the Engineering Biology and Health cluster, which also includes: 1) the **Biosensing** program; 2) the **Cellular and Biochemical Engineering** program; 3) the **Disability and Rehabilitation Engineering** program; and 4) the **Engineering of Biomedical Systems** program.

The goal of the **Biophotonics** program is to explore the research frontiers in photonics principles, engineering and technology that are relevant for critical problems in fields of medicine, biology and biotechnology. Fundamental engineering research and innovation in photonics is required to lay the foundations for new technologies beyond those that are mature and ready for application in medical diagnostics and therapies. Advances are needed in nanophotonics, optogenetics, contrast and targeting agents, ultra-thin probes, wide field imaging, and rapid biomarker screening. Low cost and minimally invasive medical diagnostics and therapies are key motivating application goals.

Research topics in this program include:

- **Imaging in the second near infrared window:** Research that advances medical applications of biophotonics in the second near-infrared window (NIR-II: 1,000-1,700 nm) in which biological tissues are transparent up to several centimeters in depth, making this spectral window ideal for deep tissue imaging.
- **Macromolecule markers:** Innovative methods for labeling of macromolecules. Novel compositions of matter. Methods of fabrication of multicolor probes that could be used for marking and detection of specific pathological cells. Pushing the envelope of optical sensing to the limits of detection, resolution, and identification.
- **Low coherence sensing at the nanoscale:** Low coherence enhanced backscattering (LEBS). N-dimensional elastic light scattering. Angle-resolved low coherence interferometry for early cancer detection (dysplasia).

- **Neurophotronics:** Studies of photon activation of neurons at the interface of nanomaterials attached to cells. Development and application of biocompatible photonic tools such as parallel interfaces and interconnects for communicating and control of neural networks.
- **Microphotronics and nanophotonics:** Development and application of novel nanoparticle fluorescent quantum-dots. Sensitive, multiplexed, high-throughput characterization of macromolecular properties of cells. Nanomaterials and nanodevices for biomedicine.
- **Optogenetics:** Novel research in employing light-activated channels and enzymes for manipulation of neural activity with temporal precision. Utilizing nanophotonics, nanofibers, and genetic techniques for mapping and studying in real-time physiological processes in organs such as the brain and heart.

Awards: Standard Grant; Various Funding Programs

Letters of Intent: Not Required

Full Proposal Submission Deadline: Full Proposal Accepted Anytime

Contacts: Leon Esterowitz lesterow@nsf.gov (703) 292-7942

Steven M. Zehnder szehnder@nsf.gov (703) 292-7014

Grant Program: Environmental Sustainability

Agency: National Science Foundation NSF PD 21-7643

RFP Website:

https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505695&org=NSF&sel_org=NSF&from=fund

Brief Description: The **Environmental Sustainability** program is part of the **Environmental Engineering and Sustainability** cluster together with 1) the **Environmental Engineering** program and 2) the **Nanoscale Interactions** program.

The goal of the **Environmental Sustainability** program is to promote sustainable engineered systems that support human well-being and that are also compatible with sustaining natural (environmental) systems. These systems provide ecological services vital for human survival. Research efforts supported by the program typically consider long time horizons and may incorporate contributions from the social sciences and ethics. The program supports engineering research that seeks to balance society's need to provide ecological protection and maintain stable economic conditions.

There are four principal general research areas that are supported:

- **Industrial ecology:** Topics of interest include advancements in modeling such as life cycle assessment, materials flow analysis, net energy analysis, input/output economic models, and novel metrics for measuring sustainable systems. Innovations in industrial ecology are encouraged.
- **Green engineering:** Research is encouraged to advance the sustainability of manufacturing processes, green buildings, and infrastructure. Many programs in the Engineering Directorate support research in environmentally benign manufacturing or chemical processes. The Environmental Sustainability program supports research that would affect more than one chemical or manufacturing process or that takes a systems or holistic approach to green engineering for infrastructure or green buildings. Improvements in distribution and collection systems that will advance smart growth strategies and ameliorate effects of growth are research areas that are supported by Environmental Sustainability. Innovations in management of storm water, recycling and reuse of drinking water, and other green engineering techniques to support sustainability may also be fruitful areas for research.
- **Ecological engineering:** Proposals should focus on the engineering aspects of restoring ecological function to natural systems. Engineering research in the enhancement of natural capital to foster sustainable development is encouraged.

- **Earth systems engineering:** Earth systems engineering considers aspects of large-scale engineering research that involve mitigation of greenhouse gas emissions, adaptation to climate change, and other global concerns.

Awards: Standard Grant; Various Funding Programs

Letters of Intent: Not Required

Full Proposal Submission Deadline: Full Proposal Accepted Anytime

Contacts: Bruce K. Hamilton bhamilto@nsf.gov (703) 292-7066

Grant Program: Nanoscale Interactions

Agency: National Science Foundation PD 21-1179

RFP Website:

https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505696&org=NSF&sel_org=NSF&from=fund

Brief Description: The **Nanoscale Interactions** program is part of the **Environmental Engineering and Sustainability** cluster, which also includes: 1) the **Environmental Engineering** program; and 2) the **Environmental Sustainability** program.

The goal of the **Nanoscale Interactions** program is to support research to advance fundamental and quantitative understanding of the interactions of nanomaterials and nanosystems with biological and environmental media.

Materials of interest include one- to three-dimensional nanostructures, heterogeneous nano-bio hybrid assemblies, dendritic and micelle structures, quantum dots, and other nanoparticles. Such nanomaterials and systems frequently exhibit novel physical, chemical, photonic, electronic, and biological behavior as compared to the bulk scale. Collaborative and interdisciplinary proposals are encouraged.

Research areas supported by the program include:

- Characterization of interactions at the interfaces of nanomaterials and nanosystems, including both simple nanoparticles and complex and/or heterogeneous composites and nanosystems, with surrounding biological and environmental media;
- Development of predictive tools based on the fundamental behavior of nanostructures to advance cost-effective and environmentally benign processing and engineering solutions over full-life material cycles;
- Examination of the transport, interaction, and impact of nanostructured materials and nanosystems on biological systems and the environment;
- Simulations of nanoparticle behavior at interfaces, in conjunction with experimental comparisons, and new theories and simulation approaches for determining the transport and transformation of nanoparticles in various media; and
- Investigations of quantum vibronic and spin phenomena with correlations to nano phenomena.

The Nanoscale Interactions program will support exploratory research projects on nanoscale interactions of quantum effects which explain macroscopic changes and physiological and metabolic processes; investigate quantum vibration and electron spin to elucidate nano phenomena and produce quantitative data and evidence of quantum effects.

Awards: Standard Grant; Various Funding Programs

Letters of Intent: Not Required

Full Proposal Submission Deadline: Full Proposal Accepted Anytime

Contacts: Nora F. Savage NOSAVAGE@nsf.gov (703) 292-7949

Grant Program: Fluid Dynamics

Agency: National Science Foundation PD 21-1443

RFP Website:

https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505698&org=NSF&sel_org=NSF&from=fund

Brief Description: The **Fluid Dynamics** program is part of the Transport Phenomena cluster, which also includes 1) the **Combustion and Fire Systems** program; 2) the **Particulate and Multiphase Processes** program; and 3) the **Thermal Transport Processes** program.

The **Fluid Dynamics** program supports fundamental research toward gaining an understanding of the physics of various fluid dynamics phenomena. Proposed research should contribute to basic scientific understanding via experiments, theoretical developments, and computational discovery.

Major areas of interest and activity in the program include:

- **Turbulence and transition:** High Reynolds number experiments; large eddy simulation; direct numerical simulation; transition to turbulence; 3-D boundary layers; separated flows; multi-phase turbulent flows; flow control and drag reduction. A new area of emphasis is high speed boundary layer transition and turbulence; the focus would be for flows at Mach numbers greater than 5 to understand cross-mode interactions leading to boundary layer transition and the ensuing developing and fully developed turbulent boundary layer flows. Combined experiments and simulations are encouraged.
- **Bio-fluid physics:** Bio-inspired flows; biological flows with emphasis on flow physics.
- **Non-Newtonian fluid mechanics:** Viscoelastic flows; solutions of macro-molecules.
- **Microfluidics and nanofluidics:** Micro-and nano-scale flow physics.
- **Wind and ocean energy harvesting:** Focused on fundamental fluid dynamics associated with renewal energy.
- **Fluid-structure interactions:** NSF interests are in general FSI applications across the low- to high-Reynolds number range. In addition an NSF-AFOSR (Air Force Office of Scientific Research) joint funding area is the theory, modeling and/or experiments for hypersonic applications. Proposals will be jointly reviewed by NSF and AFOSR using the NSF merit review process. Actual funding format and agency split for an award (depending on availability of funds) will be determined after the proposal selection process. The AFOSR program that participates in this initiative is the Aerothermodynamics program (program officer: [Dr. Sarah Popkin](#)).
- **Canonical configurations:** Experimental research is encouraged to develop spatiotemporally resolved databases for canonical configurations to either confirm historical results or to provide data in an unexplored parameter region. Fidelity and completeness for theoretical/computational validation are key attributes of the proposed experimental data.
- **Artificial intelligence (AI)/machine learning:** Innovative AI ideas related to the use of machine learning and other AI approaches in fluid dynamics research to model and control the flows are encouraged. Verifying new models with canonical configurations, when appropriate, is encouraged for the **Computational and Data-Enabled Science & Engineering (CDS&E)** program.
- **Instrumentation and Flow Diagnostics:** Instrument development for time-space resolved measurements; shear stress sensors; novel flow imaging; and velocimetry.

Awards: Standard Grant; Various Funding Programs

Letters of Intent: Not Required

Full Proposal Submission Deadline: Full Proposal Accepted Anytime

Contacts: Ronald D. Joslin rjoslin@nsf.gov (703) 292-7030

Shahab Shojaei-Zadeh sshojaei@nsf.gov (703) 292-8045

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[National Institutes of Health](#)

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

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

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

Brief Description: The research efforts over the past two decades, mainly supported by the National Institute on Drug Abuse (NIDA), have led to a substantial advance in fundamental understanding of the neurobiological basis of drug addiction. These insights have resulted in identification of multiple science-based approaches that could potentially revolutionize the prevention, diagnosis, and treatment of SUDs. Nonetheless, the goal of developing, scaling, and delivering effective solutions for SUDs remains largely unmet. For example, there are no therapies approved to treat either stimulant or cannabis use disorders, and the efficacy of available therapies for other SUDs (e.g., opiates, tobacco, alcohol) is limited. The dearth of innovative products for SUDs has been attributed to a low level of interest by the private industry, including pharmaceutical, biotech and device manufacturers, to engage in formal product development of the discoveries originating in the academic labs of the drug addiction researchers. There are multiple issues contributing to private sector disengagement from SUDs, including the perception of a small market size, the prospect of a low return on investment, the negative association of linking a company's name with the use of illegal substances and fragmented SUD patient advocacy. As such, in addition to the efforts to assuage a lack of enthusiasm by the private sector, it is critically important to empower the engagement of academic scientists into formal biomedical product development and entrepreneurship processes. To empower the academic scientists to engage in biomedical product development, NIDA invites the grant applications 1) to develop a customized curriculum in biomedical entrepreneurship, innovation and biomedical product development and 2) to implement this curriculum in a form of the education programs/short courses, specifically targeting scientists working in the field of drug addiction research.

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

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

Letter of Intent: October 18, 2021

Proposal Deadline: November 18, 2021

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

Applicants are encouraged to apply early to allow adequate time to make any corrections to errors found in the application during the submission process by the due date. No late applications will be accepted for this Funding Opportunity Announcement.

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

Grant Program: Transformative Artificial Intelligence and Machine Learning Based Strategies to Identify Determinants of Exceptional Health and Life Span (R21/R33 Clinical Trial Not Allowed)
Agency: National Institutes of Health RFA-AG-22-022

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

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

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

Letter of Intent: September 28, 2021

Proposal Deadline: October 28, 2021

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

Applicants are encouraged to apply early to allow adequate time to make any corrections to errors found in the application during the submission process by the due date. No late applications will be accepted for this Funding Opportunity Announcement.

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

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

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

Grant Program: NEI Vision Research Epidemiology Grant (UG1 Clinical Trial Not Allowed)

Agency: National Institutes of Health PAR-21-204

Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-21-204.html>

Brief Description: Clinical vision research projects, including epidemiologic studies, are part of NEI's core strategy for improving visual health and decreasing visual impairment in populations through research on the burden of disease, its causes, diagnosis, prevention, treatment and rehabilitation.

Projects should focus on NEI's mission to protect and improve visual health including, but not limited to:

- Determining the burden of eye diseases and their visual outcomes in a changing population, particularly disparities in the burden and the influences of sociocultural, environmental, economic, and demographic factors.
- Improving early diagnosis of ocular diseases and their underlying processes through new screening and detection strategies.
- Determining risk factors for ocular diseases.
- Identifying and assessing strategies that will overcome barriers to eye care and convert evidence-based findings into improved patient and population outcomes.
- Studying the interplay of factors that exacerbate or mitigate risk for eye diseases.

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

Letter of Intent: Not Applicable

Proposal Deadline: September 25, 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: Sangeeta Bhargava, PhD., National Eye Institute (NEI), Telephone: 301-451-2020
Email: bhargavas@mail.nih.gov

Grant Program: NIA Research and Entrepreneurial Development Immersion (REDI): Entrepreneurship Enhancement Award (R25 Clinical Trial Not Allowed)

Agency: National Institutes of Health RFA-AG-22-003

Website: <https://grants.nih.gov/grants/guide/rfa-files/RFA-AG-22-003.html>

Companion Funding Opportunity:

[RFA-AG-22-004](#) - NIA REDI Mentored Entrepreneurial Career Development Award

[RFA-AG-22-007](#) - REDI Small Business Innovation Research (SBIR) Entrepreneurial Transition Grant

[RFA-AG-22-014](#) - REDI Small Business Technology Transfer (STTR) Entrepreneurial Transition Grant

Brief Description: To boost the number of Ph.D.-trained scientists prepared and ready for the multitude of career options available, NIA is seeking innovation-focused programs that are geared towards imparting a broad set of skills and knowledge required for a career in translational sciences and entrepreneurship. This skillset and knowledge base include scientific communication; an understanding of the intellectual property process and landscape; regulatory and reimbursement pathway knowledge; the ability to identify unmet needs within markets and define value propositions; and a clear understanding of the biomedical development path, financing sources, and challenges. The participants should receive structured education wherein translational aging and Alzheimer's disease and Alzheimer disease-related dementias (AD/ADRD) research is combined with entrepreneurship – the overarching goal of the program

being commercialization of aging and AD/ABRD-focused ideas and concepts from the laboratory while training the fellow in entrepreneurship and business development. The training in experimental research is expected to be supplemented with seminars, invited lectures, and networking with industry. The development of research education programs through this FOA will address the need for an increased number of scientists that possess the broad skill-set required for initial success in non-research positions and for some of the translational and non-research activities that are now a part of many research faculty positions.

Award: Application budgets should not exceed \$150,000 in direct costs per year and need to reflect the actual needs of the proposed project.

Letter of Intent: September 4, 2021

Proposal Deadline: October 4, 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: Saroj Regmi, Ph.D., National Institute on Aging (NIA); Phone: 301-480-8964; Email: saroj.regmi@nih.gov

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

Grant Program: Morphogenic Interfaces (MINT)

Agency: Department of Defense DARPA - Defense Sciences Office HR001121S0033

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

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

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

Letter of Intent: Please see below.

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

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

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

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

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

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

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

Letter of Intent: Please see below.

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

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

Grant Program: Defense Sciences Office Office-wide

Agency: Department of Defense DARPA HR001121S0032

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

Brief Description: The mission of the Defense Advanced Research Projects Agency (DARPA) Defense Sciences Office (DSO) is to identify and create the next generation of scientific discovery by pursuing high-risk, high-payoff research initiatives across a broad spectrum of science and engineering disciplines and transforming these initiatives into disruptive technologies for U.S. national security. In support of this mission, the DSO Office-wide BAA invites proposers to submit innovative basic or applied research concepts or studies and analysis proposals that address one or more of the following technical thrust areas: (1) Frontiers in Math, Computation and Design, (2) Limits of Sensing and Sensors, (3) Complex Social Systems, and (4) Anticipating Surprise. Each of these thrust areas is described below and includes a list of example research topics that highlight several (but not all) potential areas of interest. Proposals must investigate innovative approaches that enable revolutionary advances. DSO is explicitly not interested in approaches or technologies that primarily result in evolutionary improvements 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

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

Agency: Department of Defense Air Force Office of Scientific Research FA9550-21-S-0001

RFP Website: <https://www.grants.gov/web/grants/view-opportunity.html?oppId=334084>
<https://www.afrl.af.mil/AFOSR/>

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

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

Letter of Intent: Please contact the program director.

Proposal Submission Deadline: Open until new BAA is posted.

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

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Department of Transportation

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

Agency: Department of Transportation 693JJ318NF5227-2021

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

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

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

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

Letter of Intent: Not Required

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

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

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[Department of Agriculture:](#)

Grant Program: NRCS's Conservation Innovation Grants (CIG) Classic Program for Federal fiscal year (FY) 2021

Agency: Department of Agriculture USDA-NRCS-NHQ-CIG-21-NOFO0001113

Website:

<https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/national/programs/financial/cig/?cid=stelprdb1046235>

https://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/programs/financial/cig/?cid=nrcs143_008205

Brief Description: NRCS is announcing the availability of up to \$15 million in Conservation Innovation Grants (CIG) funding to stimulate the development and adoption of innovative conservation approaches and technologies in conjunction with agricultural production. CIG projects are expected to lead to the transfer of conservation technologies, management systems, and innovative approaches (such as market-based systems) to agricultural producers, into technical manuals and guides, or to the private sector. Projects may be between 1 and 3 years in duration.

A webinar for CIG Classic applicants is scheduled for June 8, 2021 at 3 p.m. Eastern Time. Information on how to participate in the webinar will be posted to the [CIG Applicant website](#).

Awards: Up to \$2,000,000; Anticipated Available Funding: \$15,000,000.

Proposal Deadline: Applications must be submitted through the NRCS Programs Portal, a new system for CIG application submission, by 11:59 p.m. Eastern Time on July 19, 2021.

Contact Information: Potential applicants may contact NRCS with questions by emailing nrcscig@usda.gov

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

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

Website: <https://nifa.usda.gov/funding-opportunity/agriculture-and-food-research-initiative-foundational-applied-science-program>

Brief Description: The AFRI Foundational and Applied Science Program supports grants in six AFRI priority areas to advance knowledge in both fundamental and applied sciences important to agriculture. The six priority areas are: Plant Health and Production and Plant Products; Animal Health and Production and Animal Products; Food Safety, Nutrition, and Health; Bioenergy, Natural Resources, and Environment; Agriculture Systems and Technology; and Agriculture Economics and Rural Communities. Research-only, extension-only, and integrated research, education and/or extension projects are solicited in this Request for Applications (RFA). See Foundational and Applied Science RFA for specific details.

Letter of Intent: Required.

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

Proposal Deadline: Thursday, July 29, 2021

Contact Information: [AFRI Coordination Team](#)

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[Department of Labor](#)

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

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

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

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

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

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

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

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

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

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[Department of Commerce/EDA](#)

Grant Program: Climate Program Office FY2022

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

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

Brief Description: Climate variability and change present society with significant economic, health, safety, and security challenges. As part of the National Oceanic and Atmospheric Administration (NOAA) climate portfolio within the Office of Oceanic and Atmospheric Research (OAR), the Climate Program Office (CPO) addresses these climate challenges by managing competitive research programs through which high-priority climate science, assessments, decision-support research, outreach, education, and capacity-building activities are funded to advance our understanding of the Earth's climate system, and to foster the application and use of this knowledge to improve the resilience of our Nation and its partners. Through this announcement, CPO is seeking applications for eight individual competitions in FY22. Several of these competitions are relevant to four high-priority climate risk areas CPO is focusing on to improve science understanding and/or capabilities that result in user-driven outcomes: Coastal Inundation, Marine Ecosystems, Water Resources, and Extreme Heat. More information about CPO's Climate Risk Areas Initiative can be found <https://cpo.noaa.gov/News/ArtMID/7875/ArticleID/1945/NOAA%E2%80%99s-ClimateProgram-Office-launches-Climate-Risk-Areas-Initiative>.

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

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

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

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

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

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

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

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

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

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

Letter of Intent: Contact the program director.

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

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

Grant Program: NIST Public Safety Innovation Accelerator Program – Artificial Intelligence for IoT Information Prize Competition

Agency: U.S. Department of Commerce NIST 2021-NIST-AI3-01

Website: <https://www.grants.gov/web/grants/view-opportunity.html?oppId=333855>

Brief Description: The NIST's Public Safety Innovation Accelerator Program (PSIAP) is seeking applications from eligible applicants for activities to collaborate with technical experts from NIST, industry/academia, and public safety in developing and implementing the Artificial Intelligence for IoT Information (AI3) Prize Competition. The AI3 Prize Competition aims to utilize artificial intelligence learning techniques to make disparate situational awareness data sources actionable for first responders. The AI3 Prize Competition seeks to attract experts and innovators from industry and academia to focus on this difficult challenge by offering a monetary prize purse and an opportunity to help public safety solve this overarching problem. The AI3 Prize Competition award will include all aspects of prize development, implementation, and postcompetition publicity and evaluation of the project impact.

Awards: NIST anticipates funding 1 award for approximately \$1,200,000 with a project performance period of up to 2 years.

Letter of Intent: Contact the program director.

Proposal Deadline: Full Applications must be received at Grants.gov no later than 11:59 p.m. Eastern Time, July 26, 2021.

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

Grant Program: Oceanic and Atmospheric Research (OAR)**Agency: Department of Commerce National Oceanic and Atmospheric Administration NOAA-OAR-OER-2022-2006910****Website:** <https://www.grants.gov/web/grants/view-opportunity.html?oppId=333585>

Brief Description: The NOAA Office of Ocean Exploration and Research (OER), also known as NOAA Ocean Exploration, is soliciting proposals to conduct or support ocean exploration resulting in outcomes that provide or enable initial assessments about unknown or poorly understood regions of U.S. waters. This funding opportunity will focus on the outcomes of the Workshop to Identify National Ocean Exploration Priorities in the Pacific hosted by the Consortium for Ocean Leadership (COL) in 2020 in partnership with OER. Proposals should support the ocean exploration topical priorities or spatial priorities in the U.S. Exclusive Economic Zone (EEZ) identified in the “Report on the Workshop to Identify National Ocean Exploration Priorities in the Pacific” (https://oceanleadership.org/wpcontent/uploads/2020/11/OceanExploration_PacificPriorities_Workshop_Report_NOV2020.pdf).

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

Awards: Project funding up to \$750,000. Anticipated available funding: \$3,000,000**Letter of Intent:** Pre-proposal stage (due June 21, 2021): 1. OER NOFO cover sheet 2. Pre-proposal, max 2 pages Submit to: oer.ffo2022@noaa.gov**Proposal Deadline:** Full Proposal due on October 8, 2021**Contact Information:** For further information and for applicants without internet, contact the NOAA Office of Ocean Exploration and Research at (301) 734-1172 or oer.ffo2022@noaa.gov**Grant Program: FY2021 to FY2023 NOAA Broad Agency Announcement (BAA)****Agency: U.S. Department of Commerce NOAA-NFA-NFAPO-2021-2006626****Website:** <https://www.grants.gov/web/grants/view-opportunity.html?oppId=329261>

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

Awards: Contingent to the availability of funds.**Letter of Intent:** Contact the program director.**Proposal Deadline:** September 30, 2023.**Contact Information:** Mr. Lamar Dwayne Revis, 301-628-1308, lamar.revis@noaa.gov[Back to Contents](#)

[EPA](#)

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. 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

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: Request for Information on Integrating Electric Vehicles onto the Electric Grid

Agency: Department of Energy - Office of Science DE-FOA-0002528

Website: <https://www.federalregister.gov/documents/2021/06/16/2021-12670/notice-of-request-for-information-rfi-on-integrating-electric-vehicles-onto-the-electric-grid>

also <https://eere-exchange.energy.gov/>.

Brief Description: The U.S. Department of Energy (DOE) invites public comment on its Request for Information (RFI) number DE-FOA-0002528 regarding the Office of Energy Efficiency & Renewable Energy's (EERE) and Office of Electricity's (OE) Request for Information on Integrating Electric Vehicles onto the Electric Grid. The purpose of this RFI is to solicit feedback from industry, academia, research laboratories, government agencies, and other stakeholders on issues related to integrating electric vehicles onto the grid. EERE and OE are specifically interested in information directed at the report requirements as listed in Section 137 of the Energy Act of 2020.

Awards: N/A

Letter of Intent: N/A

Submission Deadline: Responses to the RFI must be received by July 23, 2021.

Contact: Questions may be addressed to VTO@ee.doe.gov or to Lee Slezak at 202-586-2335..

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

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

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

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

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

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

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

Letter of Intent: Not Required

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

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

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[NASA](#)

Grant Program: ROSES 2021: Advanced Information Systems Technology

Agency: NASA NNH21ZDA001N-AIST

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

Brief Description: NASA's Advanced Information Systems Technology (AIST) Program identifies, develops, and supports adoption of software and information systems, as well as novel computer science

technologies expected to be needed by the Earth Science Division in the 5-10-year timeframe, as described in ROSES-21 A.1, Earth Science Research Overview. AIST has been organized around two primary thrusts: New Observing Strategies (NOS) and Analytic Collaborative Frameworks (ACF). The current vision is to connect these two existing thrusts and integrate them into the larger concept of Earth System Digital Twins (ESDT). These three thrusts are described below, and more information is available on the ESTO AIST website.

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

Notice of Intent: Contact program director

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

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

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

Agency: NASA NNH21ZDA001N-LWSSC

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

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

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

Notice of Intent: Contact program director

Proposal Deadline: Oct 13, 2021

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

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

Agency: NASA 80HQTR21NOA01-21FO-F1

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

Brief Description: The National Aeronautics and Space Administration (NASA) Space Technology Mission Directorate's (STMD) mission is to address key research and technology challenges that will advance revolutionary capabilities for both NASA exploration mission challenges and national needs, and also address the market challenges associated with providing state-of-the-art commercial space products and services. STMD's focus is on missions beyond low Earth orbit that would enable the return of humans to the Moon for long-term exploration and utilization, followed by human missions to Mars and other destinations. STMD innovates, develops, demonstrates, and infuses revolutionary, highpayoff technologies through transparent, collaborative partnerships, expanding the boundaries of the aerospace

enterprise. STMD employs a merit-based competition model with a portfolio approach, spanning a range of discipline areas and technology and market readiness levels. STMD's Flight Opportunities program rapidly demonstrates promising technologies for space exploration, discovery, and the expansion of space commerce through suborbital testing with industry flight providers. The program matures capabilities needed for NASA missions and commercial applications while strategically investing in the growth of the U.S. commercial spaceflight industry.

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

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

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

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

Grant Program: NASA Innovative Advanced Concepts (NIAC) Phase I

Agency: NASA 80HQTR21NOA01-22NIAC-A1

Website: <https://nspires.nasaprs.com/external/solicitations/summary.do?solId=%7B45A3E9E1-E315-0A5A-C5EE-AC9732306EEC%7D&path=&method=init>

Brief Description: The NASA Innovative Advanced Concepts (NIAC) Program focuses on early stage feasibility studies of visionary concepts that address national government and commercial aerospace goals. Concepts are solicited from any field of study that offers a radically different approach or disruptive innovation that may significantly enhance or enable new human or robotic science and exploration missions. The NIAC Program supports innovative research through multiple phases of study. Phase I awards are for up to nine-month efforts funded at up to \$175,000 to explore the overall feasibility and viability of visionary concepts. Phase II awards are up to two years efforts with total funding of up to \$500,000 (per award) to further develop the most promising Phase I concepts, and to explore potential infusion options within and beyond NASA. Concepts should be sufficiently well developed at the end of Phase II to seek follow on development funds from other NASA programs, external government programs, or commercial partners. However, in rare instances there may be a compelling need for the strategic investment of additional NIAC funds to further advance Phase II concepts with clearly defined transition paths into other NASA, government, or commercial programs. Phase III awards are designed to meet this need, with the anticipated selection of no more than one new award per year. Phase III studies will be funded for a maximum duration of two years at a total funding level of up to \$2,000,000 per award. NIAC will later release separate REsearch, Development, Demonstration, and Infusion (REDDI) Appendices soliciting Phase II and Phase III proposals, respectively. NIAC will allow sufficient time for eligible Phase I Fellows awarded in this solicitation to apply for Phase II follow-on support of up to two more years of study and development.

Awards: Up to \$175,000; Multiple awards

Notice of Intent: Contact program director

Proposal Deadline: Step-A Proposals Due: July 21, 2021 (5:00 pm Eastern)

Contact: Jason Derleth NIAC Program Executive Space Technology Mission Directorate, NASA Headquarters hq-niac@mail.nasa.gov

Grant Program: ROSES 2021: Instrument Incubator Program

Agency: NASA NNH21ZDA001N-IIP

Website: <https://nspires.nasaprs.com/external/solicitations/summary.do?solId=%7BDAAE2F81-ED80-CFF7-F74D-00C054480E87%7D&path=&method=init>

Brief Description: The Instrument Incubator Program (IIP) supports the development of innovative technologies for Earth observing instruments, sensors, and systems in support of Earth science. The technologies and measurement concepts developed under the IIP may extend through field demonstrations, with a longer-term aim for infusion into future Earth Science Division research, applications, and flight programs. Emerging technologies and new instrument architectures and platforms show great promise for measuring natural Earth phenomena and physical processes that have not been well characterized by conventional satellite instruments alone. In particular, transient and dynamical phenomena have been difficult to study using traditional low Earth orbit (LEO) satellite instruments due to insufficient temporal sampling of such phenomena. Inexpensive, high quality intelligent sensors and platforms operated in higher orbits (MEO, GEO, etc.), or in a LEO constellation and/or in a coordinated fashion, coupled with new pointing, real time data processing, and commanding capabilities, could now give scientists the ability to conduct observations focused on dynamic processes and/or events of interest. These targeted events require interconnectivity and the on-platform computational capacity to coordinate among platforms, instruments, and models of the phenomenon or process. Emerging new instrument technologies potentially coupled with new platform capabilities and rapidly evolving information technologies could become the early backbone of new observing systems that can react to changing environmental conditions.

Awards: It is anticipated that a total of 12-14 proposals will be selected and the value of each will be approximately \$1.5M per year. The total proposed period of performance must not exceed 36 months.

Notice of Intent: Notices of Intent to propose are requested by May 21, 2021.

Proposal Deadline: July 20, 2021

Contact: Parminder Ghuman Science Mission Directorate Earth Science Technology Office Telephone: (301) 974-9246 Email: p.ghuman@nasa.gov

Grant Program: ROSES 2021: Living With a Star Science

Agency: NASA NNH21ZDA001N-LWS

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

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

Awards: TBD

Notice of Intent: Please see below

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

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

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

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[National Endowment of Humanities](#)

Grant Program: Humanities Connections

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

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

Brief Description: The Humanities Connections program seeks to expand the role of the humanities in undergraduate education at two- and four-year institutions. Awards support innovative curricular approaches that foster partnerships among humanities faculty and their counterparts in the social and natural sciences and in pre-service or professional programs (such as business, engineering, health sciences, law, computer science, and other technology-driven fields), in order to encourage and develop new integrative learning opportunities for students.

Humanities Connections projects must include:

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

Competitive applications will demonstrate:

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

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

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

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

Letter of Intent: Optional Draft due August 3, 2021

Proposal Deadline: Application due September 14, 2021

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

Grant Program: Fellowship Programs at Independent Research Institutions

Agency: National Endowment for the Humanities 20210811-RA

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

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

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

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

Award: Maximum award amount: Up to \$565,000 (\$385,000 in outright funds plus \$180,000 in Federal Matching Funds)
Letter of Intent: Optional Draft due June 30, 2021
Proposal Deadline: Application due August 11, 2021
Contact: Contact the Division of Research Programs Team; 202-606-8200 fpiri@neh.gov

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[Private Foundations](#)

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

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

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

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

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

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

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

Letter of Intent: Executive Summary: June 30, 2021

Proposal Deadline: Final Proposal: August 13, 2021

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

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Streamlyne Question of the Week

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

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

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

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

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

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

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