

NJIT Research Newsletter

Issue: ORN-2021-26

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

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Special Announcements

2021 NJIT Undergraduate Research and Innovation (URI) Summer Research Symposium and Innovation Day July 29-30, 2021, Ballroom A & B, Campus Center

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 IRI 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

Agenda:

July 29, 2021

- | | |
|----------------------|--|
| 10.00 AM - 10.10 AM: | Welcome Remarks Fadi Deek, Provost and Senior Executive Vice President Atam Dhawan, Senior Vice Provost for Research |
| 10.10 AM - 10.30 AM: | Innovation to Applications Keynote Speaker: Dan Henderson, NJIT Board of Overseers, Inventor and Entrepreneur |
| 10.30 AM – 11.00 AM: | Panel: Remembering Dr. James Stevenson URI External Advisory Board |
| 11.00 AM - 12.30 PM: | URI Summer Research Symposium Session -1 Student Presentations: Bioscience and Bioengineering |
| 12.30 PM - 1.15 PM: | Networking and Lunch |
| 1.15 PM – 1.30 PM: | Remembering Dr. Angelo J. Perna Durga Misra, Director, McNair Achievement Program and Others |
| 1.30 PM – 3.00 PM: | URI Summer Research Symposium Session -2 Student Presentations: Environment and Sustainability |

July 30, 2021

- | | |
|---------------------|---|
| 9.30 AM - 11.00 AM: | URI Summer Research Symposium Session -3 Student Presentations: Material Science and Engineering |
|---------------------|---|

- 11.00 AM - 12.30 PM: NAI-NJIT Chapter Launch and Induction Ceremony
- 11.00 AM – 11.15 AM: Opening Remarks
Fadi Deek, Provost and Senior Executive Vice President
Atam Dhawan, Senior Vice Provost for Research
- 11.15 AM – 11.30 AM: State of the NAI-NJIT Chapter
Atam Dhawan, Senior Vice Provost for Research
- 11.30 AM – 11.45 AM: Keynote Speaker:
Elizabeth Dougherty, Eastern Regional Outreach Director,
U.S. Patent and Trademark Office (USPTO), and NAI Board of Directors
- 11.45 AM – 12.00 PM: NAI Chapter Induction Ceremony
- 12.00 PM – 12.30 PM: Closing Remarks, Networking and Lunch
- 12.30 PM – 2.00 PM: URI Summer Research Symposium Session -4
Student Presentations: Data Science and Management
- 2.00 PM – 3.00 PM: URI Summer Research Symposium Session -5
Student Presentations: Robotics and Machine Intelligence, and Others
- 3.00 PM- 3.30 PM: Dr. James Stevenson Innovation Awards (for student projects)
Presentations and Closing Remarks

Biographical Sketch of Dr. James Stevenson

Jim Stevenson, PhD: Jim Stevenson was a Corporate Fellow at Honeywell International from 1996 until his retirement in March of 2011. His professional work at Honeywell focused on polymer and composite materials and applications for mechanical and electronic structures and enclosures in an aerospace environment. Nine patents and 17 publications followed from this work.

Following a postdoctoral year at Columbia University, Dr. Stevenson joined the Chemical Engineering Department at Cornell University where he earned tenure in 1977. He was a founding member of the Cornell Injection Molding Project, was highly rated for his teaching, and prepared 17 publications. He earned his M.S. and Ph.D. degrees in Chemical Engineering at the University of Wisconsin, Madison and a B.S.Ch.E. from Rensselaer Polytechnic Institute.

Prior to joining Honeywell, Dr. Stevenson was Director of Research at Trexel, a start-up company near Boston commercializing microcellular foam technology. He proposed injection molding as the preferred foaming process, a result that led to nine patents. For the previous 19 years Dr. Stevenson served in technical and management positions with GenCorp, Inc. in Akron, OH. One development of the Extrusion Laboratory, which he supervised, was curved extrusion technology. While at GenCorp, Dr. Stevenson received eight patents and published 23 articles, two book chapters, and a book *Innovation in Polymer Processing: Molding*.

After retirement from Honeywell, Dr. Stevenson founded a consulting company, Stevenson PolyTech LLC, which specializes in polymer material/ process development and industrial short courses with more than 45 presentations worldwide. During his retirement, Dr. Stevenson helped to organize and

funded the TechQuest competition which, now in its seventh year, awarded five innovation prizes and fellowships to NJIT undergraduates. He was also instrumental in setting up Innovation Day which celebrates the numerous technical awards won by NJIT undergraduates and hosts electronic presentations of their many innovative projects. Jim served as a member of the URI External Advisory Board and predecessor organizations since 2012. Jim and his wife Steffi also supported endowed undergraduate scholarships for NJIT students primarily from Irvington and Newark high schools. In 2017, Jim received the *Special Friend of the University* award for outstanding contributions by a non-alumnus. He also served on the Board of Directors of the Honeywell retirees association.

Biographical Sketches: Keynote Speakers

Daniel Henderson: Daniel Henderson is an American innovator, entrepreneur, and artist. He was Assistant to Kazuo HASHIMOTO, a prolific Japanese inventor with over 1000 patents worldwide and he met and briefly worked with Jack Kilby, inventor of the integrated circuit. Dan's 1993 prototype objects for wireless picture and video messaging were received in the permanent collection by the National Museum of American History at the Smithsonian Institution in 2007 (<https://americanhistory.si.edu/press/releases/national-museum-american-history-acquires-wireless-picturephone-prototypes>

Dan's extensive research for wireless objects also resides there (<https://invention.si.edu/daniel-henderson-portable-electronic-devices-documentary-collection-1968-2002>). He was named a mobile technology innovator for video sharing in cellular phones when he appeared in a 2012 Super Bowl commercial for Best Buy along with Ray Kurzweil and Neil Papworth. His invention of wireless picture and video messaging in cellular telephones is covered by U.S. Patent 8,160,221, "*Cellular telephone with the ability to display and store picture and video messages and Caller ID received from a message originator*" and US Patent 8,472,595, "*Method and Apparatus for providing a portable communication device with the ability to selectively display picture and video*". His 1993 inventions are utilized today in nearly every cellphone in the world. He has received 30 US Patents that have cumulatively been cited in other patents over 1000 times. He has had extensive experience in intellectual property, licensing to over 170 of the largest companies in the world.

Prior to starting his career at IBM Corporation, Dan received a Bachelor of Science degree in Business from Southern Oregon University, where he is an Emeritus Board member for the Foundation there.

Dan currently serves on the Board of Overseers and the Dorman Honors College Board of Visitors for NJIT. Several of his large-scale stone sculptures may be seen on the NJIT campus. He received an honorary Doctor of Science degree from NJIT in 2012 and remains committed to the importance of innovation to improve society and the world we live in.

Elizabeth Dougherty, JD, Eastern Regional Outreach Director, USPTO: As the Eastern Regional Outreach Director for the U.S. Patent and Trademark Office (USPTO), Elizabeth Dougherty carries out the strategic direction of the Under Secretary of Commerce for Intellectual Property and Director of the USPTO, and is responsible for leading the USPTO's East Coast stakeholder engagement. Focusing on the region and actively engaging with the community, Ms. Dougherty ensures the USPTO's initiatives and programs are tailored to the region's unique ecosystem of industries and stakeholders.

Ms. Dougherty has more than 25 years of experience working at the USPTO. She served as the Senior Advisor to the Under Secretary of Commerce for Intellectual Property and Director of the USPTO. In this role, she worked closely across the Agency's leadership to implement the policies and priorities for the USPTO. She began her career at the USPTO as a patent examiner after graduating from The Catholic University of America with a bachelor's degree in physics. While a patent examiner, Ms.

Dougherty went on to obtain her J.D. from The Columbus School of Law at The Catholic University of America and served as a Senior Legal Advisor in the Office of Patent Legal Administration for a significant part of her career. Over the years, she has also served in the USPTO's Office of Petitions, the Office of Innovation Development, and the Office of Government Affairs.

Ms. Dougherty has dedicated much of her career to the USPTO's outreach and education programs focusing on small businesses, startups and entrepreneurs. In this effort she has developed, implemented, and supervised programs that support the independent inventor community, small businesses, entrepreneurs, and the intellectual property interests of colleges and universities. Similarly Ms. Dougherty has spearheaded a number of special projects with federal, state and local governments, and private organizations to promote and support invention and innovation in the United States.

Ms. Dougherty is a member of the Virginia Bar, the Giles S. Rich American Inn of Court, the Pauline Newman American Inn of Court, the American Bar Association, the Federal Circuit Bar Association, the American Intellectual Property Law Association, the Patent and Trademark Office Society, the Supervisory Patent Examiners and Classifiers Organization, Women in Science and Engineering, Federally Employed Women, and the Network of Executive Women.

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[Grant Opportunity Alerts](#)

Keywords and Areas Included in the Grant Opportunity Alert Section Below

[NSF: 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; Nanoscale Interactions; Fluid Dynamics; Computer and Information Science and Engineering (CISE) Research Initiation Initiative (CRII)

[NIH: NEI Vision Research Epidemiology Grant \(UG1\);](#) NIA Research and Entrepreneurial Development Immersion (REDI): Entrepreneurship Enhancement Award (R25); High Resolution Mapping of Biomolecules in Brain Cells in Aging and Alzheimer's Disease (R01); BRAIN Initiative: New Technologies and Novel Approaches for Recording and Modulation in the Nervous System (R01)

[Department of Defense/US Army/DARPA/ONR: Morphogenic Interfaces \(MINT\);](#) Chronic Pain Management, Investigator-Initiated Research Award; Defense Sciences Office Office-wide; Redefining Possible; Human-Guided Machine Learning; Research Interests of the Air Force Office of Scientific Research; C4ISR, Information Operations, Cyberspace Operations and Information Technology System Research, Idea Development Award

[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: 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: 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: 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

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[**In the News...**](#)

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

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](#).

Lawmakers Propose \$50 Million Federal Program to Support Rural Patients: Bipartisan legislation recently [introduced](#) in both chambers aims to form a government-led initiative to extend the use of remote patient monitoring technology—or RPM—in rural areas. Broadly, RPM combines digital tools and medical devices to capture and share data in real-time about patients' health conditions with providers in other locations. Reps. Dan Newhouse, R-Wash., and Tom O'Halleran, D-Ariz., put forth the [Rural Remote Monitoring Patient Act](#) on Thursday, and Sen. John Kennedy, R-La., also [introduced](#) companion legislation. If passed, the bill would establish a virtual health pilot program within the Health and Human Services Department's Health Resources and Services Administration.

The COVID-19 pandemic [exposed](#) gaps in healthcare access across the United States, and at the same time, accelerated telehealth and RPM [deployments](#) driving medical services far beyond the walls of existing medical facilities. RPM collects data from patients based in one place via devices like blood pressure cuffs, scales, implantables, and biosensors. Simultaneously, that information is electronically transmitted to physicians elsewhere. In their 10-page legislation, lawmakers propose creating a federal grant program to fund efforts to introduce or improve RPM and expand telehealth in rural communities. Certain entities would be able to apply for money to buy hardware, software and other resources necessary for such efforts, better enable equipment upkeep and the transmission of medical data—and more.

To qualify, grantees would have to be based in rural points and turn to Food and Drug Administration-cleared technology. According to the bill, the tech would also need to be "operable using cellular standards, including 2G and 3G, that offer broad network coverage in rural areas without broadband access." Congress would authorize up to \$50 million to be appropriated for the HRSA-steered program. The legislation was [referred](#) to the House Energy and Commerce and Senate Health, Education, Labor, and Pensions Committees.

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: Fairness in Artificial Intelligence in Collaboration with Amazon (FAI) Program Webinar

Sponsor: NSF

When: July 6, 2021 2:00 PM to 3:00 PM

Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=302937&org=NSF

Brief Description: NSF and Amazon are partnering to jointly support computational research focused on fairness in AI, with the goal of contributing to trustworthy AI systems that are readily accepted and deployed to tackle grand challenges facing society. Specific topics of interest include, but are not limited to transparency, explainability, accountability, inclusivity, potential adverse biases (including social biases) and effects, mitigation strategies, algorithmic advances, fairness objectives, validation of fairness, participatory design, and advances in broad accessibility and utility. Funded projects will enable broadened acceptance of AI systems, helping the U.S. to further capitalize on the potential of AI

technologies. Although Amazon provides partial funding for this program, it will not play a role in the selection of proposals for award.

To Join the Webinar: Register here for this webinar:

https://nsf.zoomgov.com/webinar/register/WN_TE-4nNIVT4OpcR3SrLHWbA

Event: Computer and Information Science & Engineering Research Initiation Initiative (CRII) Program Webinar

Sponsor: NSF

When: July 7, 2021 2:00 PM to 3:00 PM

Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=302870&org=NSF

Brief Description: Program directors from across CISE will host a 90-minute webinar to provide the CISE community with information about the Computer and Information Science and Engineering (CISE) Research Initiation Initiative (CRII) and answer questions. The solicitation may be found on the NSF website: https://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf21591

To Join the Webinar: Register in advance for this webinar:

https://nsf.zoomgov.com/webinar/register/WN_s8O9CVbfS1GLwviVjmOTYQ

Event: EHR Core Research Outreach Webinar Program Webinar

Sponsor: NSF

When: July 7, 2021 2:30 PM to 3:30 PM; 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: EHR Core Research (ECR) Proposal Preparation Outreach

Sponsor: NSF

When: July 8, 2021 2:00 PM to 3:30 PM

Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=298965&org=NSF

Brief Description: This webinar will start with a panel of current and past ECR grantees who will share their experience putting together teams and developing successful ECR proposals. The panel will be followed by a presentation by ECR program officers on developing ECR research questions, research teams, and preparing proposals. We suggest reviewing the [ECR solicitation](#) and *watching the ~30 minute [ECR webinar on preparing proposals](#) (passcode ^33Q+MOF) in order to prepare questions for this webinar.*

To Join the Webinar: Register in advance for this webinar :

[Register for the July 8th ECR Webinar](#)

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Grant Opportunities

National Science Foundation

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
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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).
- **Neurophotonic:** 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.
- **Microphotonic and nanophotonic:** 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.

Research in these areas will enable the design of nanostructured materials and heterogeneous nanosystems with desired chemical, electronic, photonic, biological, and mechanical properties for optimal and sustainable handling, manufacture, and utilization.

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

Grant Program: Computer and Information Science and Engineering (CISE) Research Initiation Initiative (CRII)

Agency: National Science Foundation NSF 21-591

RFP Website: <https://www.nsf.gov/pubs/2021/nsf21591/nsf21591.htm>

Brief Description: The NSF Directorate for Computer and Information Science and Engineering (CISE) seeks to award grants intended to support research independence among early-career academicians who specifically lack access to adequate organizational or other resources. It is expected that funds obtained through this program will be used to support untenured faculty or research scientists (or equivalent) in their first three years in a primary academic position after the PhD, but not more than six years after completion of their PhD for proposals submitted in 2021, and not more than five years after completion of their PhD for proposals submitted after 2021. Applicants for this program may not yet have received any other grants or contracts in the PI role from any department, agency, or institution of the federal government, including from the CAREER program or any other program, post-PhD, regardless of the size of the grant or contract, with certain exceptions as noted below. Serving as co-PI, Senior Personnel, Postdoctoral Fellow, or other Fellow does not count against this eligibility rule.

Importantly, the CRII program seeks to provide essential resources to enable early-career PIs to launch their research careers. For the purposes of this program, CISE defines "essential resources" as sufficient funds for 48 months of graduate student support.

Awards: Standard Grant; Anticipated Funding Amount: \$10,000,000

Letters of Intent: Not Required

Full Proposal Submission Deadline: September 20, 2021

Contacts: Jeremy J. Epstein, telephone: (703) 292-8338, email: jepstein@nsf.gov

- Ephraim P. Glinert, Program Director, IIS, telephone: (703) 292-8930, email: eglinert@nsf.gov

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National Institutes of Health

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/ADRD-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

Grant Program: High Resolution Mapping of Biomolecules in Brain Cells in Aging and Alzheimer's Disease (R01 Clinical Trial Not Allowed)

Agency: National Institutes of Health RFA-AG-22-019

Website: <https://grants.nih.gov/grants/guide/rfa-files/RFA-AG-22-019.html>

Brief Description: This FOA promotes the development of brain cell type and regional 3D representations or atlases of biomolecules that change in typical brain aging and in AD using interdisciplinary approaches and mass spectrometry (MS) imaging technology.

Areas of research interest and opportunity include, but are not limited to, the following:

- Synthesizing multiparameter and mass spectrometry images into 3D biomolecular brain maps to understand the temporal and spatial relationship between early changes in key AD biochemical hallmarks and alterations of inflammatory, lipid, energy metabolite, and synaptic molecules.
- Defining the roles of various AD risk genes, in particular different APOE isoforms, in regulating 3D brain regional and cell type specific lipid distribution and signaling networks during typical and pathological brain aging.
- Establishing a brain small molecule 3D atlas to understand the alteration, transportation, and distribution of small molecules, such as ATP/ADP, NADPH/NAD and GSH, in regulating oxidative stress and brain energy metabolism during typical aging and AD.
- Developing computational and analytical tools to integrate MS imaging and single-cell 'omic measurements of brain tissue into "multiparameter" images with anatomical information.
- Optimizing high-throughput single-cell imaging mass spectrometry and other imaging techniques for mapping and disease staging of normal and AD brains.

Award: Application budgets need to reflect the actual needs of the proposed project and should be limited to no more than \$500,000 in direct costs per year.

Letter of Intent: September 28, 2021

Proposal Deadline: October 28, 2021

Contact: J. Austin Yang, Ph.D.; National Institute on Aging (NIA); Telephone: 301-496-9350, Email: austin.yang@nih.gov

Grant Program: BRAIN Initiative: New Technologies and Novel Approaches for Recording and Modulation in the Nervous System (R01 Clinical Trial Not Allowed)

Agency: National Institutes of Health RFA-NS-21-026

Website: <https://grants.nih.gov/grants/guide/rfa-files/RFA-NS-21-026.html>

Brief Description: This FOA is related to the recommendations in section III of the BRAIN 2025 Report, with the goal to 'produce a dynamic picture of the functioning brain by developing and applying improved methods for large-scale monitoring of neural activity'. Towards this end, the report calls for accelerated development of new and improved electrodes for recording, new and improved electrical and chemical optical sensors of neural activity, and new and improved instruments for optical monitoring of neural activity. These new technologies and approaches will provide unprecedented opportunities for exploring how the nervous system encodes, processes, utilizes, stores, and retrieves vast quantities of information. A better understanding of this dynamic neural activity will enable researchers to seek new ways to diagnose, treat, and prevent brain disorders. This FOA seeks applications to conduct proof-of-concept development and testing of novel technologies and approaches for recording and modulation of cells and

networks, to enable transformative understanding of dynamic signaling in the central nervous system. Applications that seek to integrate multiple technical and experimental approaches are encouraged.

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

Letter of Intent: 60 days prior to the receipt date.

Proposal Deadline: October 29, 2021

Contact: Edmund (Ned) Talley, PhD, Sahana N. Kukke, PhD, National Institutes of Neurological Disorders and Stroke (NINDS), Telephone: 301-496-1917, 301-496-1447

Email: BRAIN-FOAs@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: Redefining Possible

Agency: Department of Defense DARPA HR001121S0029

RFP Website: <https://sam.gov/opp/7728a31252544c5da3083c3533c8d50b/view>

Brief Description: The Tactical Technology Office (TTO) of the Defense Advanced Research Projects Agency (DARPA) is soliciting executive summaries, proposal abstracts, and proposals for applied research, advanced technology development, platform demonstrations, or systems studies that aim to redefine the future of warfighting across four domains: Air, Ground, Maritime, and Space.

The mission of the Tactical Technology Office (TTO) is to redefine access and delivery of effects to every domain in the battlespace: space, air, ground, sea, and undersea in support of national security policy. This includes both platforms as well as the enabling support elements for delivering effects, such as unit-

level autonomy or human-machine collaboration. TTO accomplishes this mission by placing bold bets on developing new and novel system technologies and conducting platform demonstrations at a credible scale in realistic, operationally relevant conditions to support technology transition.

Awards: Multiple awards are anticipated. The amount of resources made available under this BAA will depend on the quality of the proposals received and the availability of funds. Initial awards are anticipated to be for less than \$1 million and less than 18 months duration, although options that follow a base effort may also be proposed.

Letter of Intent: Please see below.

Proposal Submission Deadline: Closing Date and Time: 4 PM Eastern Time on June 10, 2022

Contact: The BAA Coordinator for this effort can be reached via: HR001121S0029@darpa.mil

Grant Program: Human-Guided Machine Learning

Agency: Department of Defense Dept. of the Army – USAMRAA W911NF-17-S-0003-SN-MACHINE-LEARNING

RFP Website: <https://www.grants.gov/web/grants/view-opportunity.html?oppId=334124>

Brief Description: The research goals in human-guided machine learning are to integrate empirical and theoretical efforts and generating novel concepts and approaches for humans to influence and guide the evolving behavior of intelligent technologies with the goal of effectively solving complex problems under variable resource and time constraints. We generally characterize the complex problems as more ambiguously structured by having uncertain boundaries (if any) across time and space, requiring massive and perhaps unattainable amounts of data in order to obtain complete certainty, and thus are computationally intractable for common analytic solutions. These problems may not have singularly optimal solutions, because problems will often have multiple, competing criteria and all solutions will ultimately reflect trade-offs and reduction of optimality in meeting other criteria in the set. Contextualized within the concept of enhancing adaptive human-autonomy teamwork, the human-guided machine learning research effort has five thrust areas, each with specific goals:

1) Novel forms of human-intelligent technology decision making: discover a novel suite of mechanisms to extract human intelligence that ensures Soldiers in the field can efficiently train and adapt intelligent technologies.

2) Cybernetics: elucidate principles of effective, stable mutual adaptation between humans and intelligent systems that improve performance in complex, dynamic environments. E

3) Hybridized thinking between man and intelligent technology: optimize how humans could think within complex human-technology ecosystems to maximize human potential to adapt the Army on the battlefield.

4) Human technological savvy: Create models, methods, measures, and techniques to assess and develop the “technological fluency” (i.e., “TF” = the ability of humans to use new and/or rapidly adapt existing intelligent technologies without formal training on these technologies) of Soldiers and units across a career.

5) Human-intelligent technology teaming assessment tools: create a stand-alone real-time assessment tool capable of adapting to evolving missions independently to support SME assessments of human-agent teaming.

Awards: The Army expects, but is not limited, to funding 2-3 awards. The expected award range is from \$200,000 to \$400,000 per year for 3-5 years.

Letter of Intent: Please see below.

Proposal Submission Deadline: June 25, 2021

Contact: Dr. Kaleb G. McDowell, kaleb.g.mcdowell.civ@mail.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

Grant Program: C4ISR, Information Operations, Cyberspace Operations and Information Technology System Research, Cryogenics & Quantum

Agency: Department of Defense Naval Information Warfare Center Pacific N66001-21-S-4700

RFP Website: <https://www.grants.gov/web/grants/view-opportunity.html?oppId=334026>

Brief Description: Naval Information Warfare Center, Pacific (NIWC Pacific), is soliciting proposals in accordance with FAR 35.016, DoDGARS 22.315(a), and DoD Other Transactions (OT) Guide for Prototype Projects for research in areas relating to the advancement of C4ISR capabilities, enabling technologies for Information Operations and Cyberspace Operations, and Information Technology systems. See II.2 below for further details. Proposed research should investigate unique and innovative approaches for defining and developing next generation integratable C4ISR capabilities and command suites. The area topics reflect the interest of the NIWC Pacific, but interest from other Team NAVWAR components could be generated and selections could be made for funding by other than NIWC Pacific. Excluding offers for other transactions, only offers that are in the areas of basic research, applied research, advanced technology development, and advanced component development and prototypes will be considered (see Appendix A). Testing and optimizing of concepts or prototypes may be necessary. This may involve virtual simulation and/or laboratory as well as at sea measurements. Technical topics of interest include:

1. General C4ISR
2. Command and Control
3. Communications
4. Intelligence, Surveillance and Reconnaissance
5. Unmanned Vehicles
6. Information Operations/Cyberspace Operations
7. Ubiquitous Communications and Computing Environment
8. Science, Technology, Engineering and Mathematics Research
9. Advanced Power and Energy Production and Efficient Use

10. Cryogenics & Quantum*

Awards: Multiple awards are anticipated; NIWC Pacific reserves the right to select for award all, some, one, or none of the proposals received in response to this announcement.

Letter of Intent: Please see below.

Proposal Submission Deadline: This announcement is open for 365 days from the original posting date (6/4/2021). Any white papers received during that time shall only be considered for award of a contract, other transaction, grant, or cooperative agreement. If the Government intends to award a grant or cooperative agreement, it will issue a Research Announcement (RA).

Step 1: White papers may be submitted during the times specified in Part I or further specified in individual Calls. All white papers will be evaluated in accordance with the evaluation criteria identified in Section IV unless further defined in individual Calls. White paper responses will contain the Government evaluation board's opinion of whether the idea expressed in the white paper is likely to generate a successful proposal. Debriefs will not be provided for white paper submissions. Step 2: Proposals may be requested when the Government evaluation board's opinion of the idea expressed in the white paper is likely to generate a successful proposal.

Contact: David Roden (Primary) Contract Specialist Telephone: (619) 553-2087 Email: David.Roden@navy.mil NIWC Pacific Code 22710 53560 Hull Street San Diego, CA 92152-5001

Grant Program: DoD Duchenne Muscular Dystrophy, Idea Development Award

Agency: Department of Defense Dept. of the Army – USAMRAA W81XWH-21-DMDRP-IDA

RFP Website: <https://www.grants.gov/web/grants/view-opportunity.html?oppId=333851>

Brief Description: The vision of the FY21 DMDRP is to preserve and improve the function and quality of life and to extend the life span of all individuals with Duchenne. As such, the DMDRP is seeking to better characterize Duchenne pathophysiology, support discovery and development of therapeutics, related devices and tools, as well as to promote their rigorous preclinical and clinical testing. Additionally, the DMDRP supports the efforts of the National Institutes of Health (NIH) Muscular Dystrophy Coordinating Committee (MDCC) and the 2015 MDCC Action Plan for the Muscular Dystrophies, which prioritizes the needs to improve treatments and reduce the disease burden for muscular dystrophy, including DMD.

The DMDRP Idea Development Award promotes new ideas that are still in the early stages of development and have the potential to yield impactful data and new avenues of investigation. This award supports conceptually innovative, high-risk/high-reward research that could lead to critical discoveries or major advancements that will accelerate progress in improving outcomes for individuals with DMD. Applications should include a well-formulated, testable hypothesis based on strong scientific rationale.

Awards: The anticipated direct costs budgeted for the entire period of performance for an FY21 DMDRP Idea Development Award will not exceed \$350,000. Estimated Total Program Funding: \$4,480,000

Letter of Intent: Please see below.

Proposal Submission Deadline: Pre-Application Submission Deadline: 5:00 p.m. Eastern time (ET), August 11, 2021 • Invitation to Submit an Application: September, 2021 • Application Submission Deadline: 11:59 p.m. ET, December 1, 2021

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

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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: 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

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[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 R&E, 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?sollId=%7BDD29C108-980F-6F1A-AEC7-CE7375E35007%7D&path=&method=init>

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

Awards: TBD

Notice of Intent: Please see below

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

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

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

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National Endowment of Humanities

Grant Program: Humanities Connections

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

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

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

Humanities Connections projects must include:

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

Competitive applications will demonstrate:

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

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

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

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

Letter of Intent: Optional Draft due August 3, 2021

Proposal Deadline: Application due September 14, 2021

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

Grant Program: Fellowship Programs at Independent Research Institutions

Agency: National Endowment for the Humanities 20210811-RA

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

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

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

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

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

Letter of Intent: Optional Draft due June 30, 2021

Proposal Deadline: Application due August 11, 2021

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

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[Private Foundations](#)

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

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

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

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

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

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

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

Letter of Intent: Executive Summary: June 30, 2021

Proposal Deadline: Final Proposal: August 13, 2021

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

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Streamlyne Question of the Week

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

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

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

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

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

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

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