

NJIT Research Newsletter

Issue: ORN-2021-18

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

NJIT Faculty Seed Grant Awards

July 1, 2021 – June 30, 2022

Congratulations to All FY22 Faculty Seed Grant (FSG) Winners!

NCE:

Principal Investigator: Xiaoyang Xu

Department: CME

Project Title: Development of thermostable mRNA nanoparticle vaccine protecting against seasonal and pandemic influenza

Co-Principal Investigator(s): Hua Zhu (Rutgers NJMS)

Principal Investigator: Murat Guvendiren

Department: CME

Project Title: 3D Bioprinting to Model Liver Fibrosis and Cirrhosis

Co-Principal Investigator(s): Rebecca G Wells (UPENN)

Principal Investigator: Bryan Pfister

Department: BME

Project Title: Mild repetitive blunt TBI exacerbates regulated cell death pathways

Co-Principal Investigator(s): Ying Li (BME)

Principal Investigator: Menqiang Zhao

Department: CME

Project Title: Hexagonal BN Films Enabled Scalable Fabrication

Principal Investigator: Wen Zhang

Department: CEE

Project Title: Reactive nanobubbles for biofilm prevention

Co-Principal Investigator(s): Vivek Kumar (BME), Taha Marhaba (CEE)

Principal Investigator: Joshua Young

Department: CME

Project Title: Computational-Guided Discovery of Materials for the Detection and Capture of Perfluoroalkyl Substances

Co-Principal Investigator(s): Sagnik Basuray (CME)

Principal Investigator: Vivek Kumar

Department: BME

Project Title: Detecting Biodegradation of Injectable Neuroprotective Biomaterials

Principal Investigator: Hieu Nguyen

Department: ECE

Project Title: III-Nitride based Dot-in-a-Wire Single Photon Sources for Quantum Photonics

Principal Investigator: Lin Dong

Department: MIE

Project Title: Skin Patch Sensors for Heart Failure Symptom Monitoring

Principal Investigator: Mesut Sahin
Department: BME
Project Title: Modulation of Spinal Cord Excitability Using Focused Ultrasound Stimulation

Principal Investigator: Jon Grasman
Department: BME
Project Title: Regenerative Rehabilitation: Characterizing functional muscle recovery from exercise through assessment of gait mechanics
Co-Principal Investigator(s): Saikat Pal (BME)

Principal Investigator: Lucia Rodriguez-Freire
Department: CEE
Project Title: Understanding the microbial-plant response to PFAS exposure and its role in PFAS bioavailability

CSLA:

Principal Investigator: Xionan Tai
Department: BIOL
Project Title: Influence of Spatial Heterogeneity in Plant Traits and Environments on Ecosystem Water Fluxes
Co-Principal Investigator(s): Huiran Jin (SAET)

Principal Investigator: Alexei Khalizov
Department: CES
Project Title: Ultrasonic Method for Estimating Remaining Useful Life of Air Filter Medium
Co-Principal Investigator(s): Gennady Gor (CME)

Principal Investigator: Gareth Russell
Department: BIOL
Project Title: The Urban Ecology Lab at NJIT: An Undergraduate-Focused, Multi-PI, Consolidated Research Lab
Co-Principal Investigator(s): Daniel Bunker (BIOL), Maria Stanko (BIOL), Caroline DeVan (BIOL)

Principal Investigator: Calista McRae
Department: HUM
Project Title: Contemporary Poetry, Rhetoric, and Emotive Responses to Nonhuman Animals

Principal Investigator: Farzan Nadim
Department: BIOL
Project Title: A Computational Analysis of Cerebellar Input to Midbrain Dopaminergic Centers

Co-Principal Investigator(s): Horacio Rotstein (BIOL)

Principal Investigator: Neil Maher

Department: HIST

Project Title: Environmental Justice History Digital Archive and Mapping Project

Principal Investigator: Junjie Yang

Department: PHYS

Project Title: Superionic Conductivity of Ferroelectric HfO₂ Bulk Crystals

Principal Investigator: James MacLaurin

Department: DMS

Project Title: Dynamics of High Dimensional Complex Systems

YWCC:

Principal Investigator: Shaohua Wang

Department: INF

Project Title: Combining AI and Geoscience for Urban Flood Resilience Design and Planning

Co-Principal Investigator(s): Huiran Jin (SAET)

Principal Investigator: Mark Cartwright

Department: INF

Project Title: Open World Sound Event Recognition in Longitudinal Audio Data

Principal Investigator: Aritra Dasgupta

Department: INF

Project Title: Bridging Data with Insights: Methods for Optimizing Visual Data Interpretability

Principal Investigator: Hai Phan

Department: INF

Project Title: Federated Learning in the Wild: Deployable System, Theoretical Foundation, and Applications

Principal Investigator: Michael Lee

Department: INF

Project Title: Increasing Underrepresented and Underserved Youth and Older Adults' Participation in Computing Activities

Principal Investigator: Dimitri Theodoratos

Department: CS

Project Title: A New Framework for Evaluating Hybrid Graph-Pattern Queries on Large Data Graphs

MTSM:

Principal Investigator: Raja Roy

Department: MTSM

Project Title: Exploring unicorn ventures in Space exploration

Co-Principal Investigator(s): Shanthi Gopalakrishnan (MTSM)

Principal Investigator: Xinyuan Tao

Department: MTSM

Project Title: The Impacts of Twitter on Corporate Information Environment and Management Strategies

Co-Principal Investigator(s): Zhipeng Yan (MTSM)

HCAD:

Principal Investigator: Andrzej Zarzycki

Department: HCAD

Project Title: Developing Digital Twins: Integrating Building Information Models with Building Physical Assets

Principal Investigator: Georgeen Theodore

Department: HCAD

Project Title: Hadrian's Aqueduct: Designing Cultural Sites for Ecological Sustainability and Cultural Capital

Co-Principal Investigator(s): Nikos Mamassis (University of Athens), Eleni Myrivili (University of the Aegean, Greece); Giorgos Sachinis (Athens Water Supply and Sewerage Company)

Principal Investigator: Taro Narahara

Department: HCAD

Project Title: Creation and Analysis of a Large-scale Attractiveness Dataset of Real Estate Floor Plans in U.S. Metropolitan Areas and its Application to Apartment Searches

University City Science Center
QED Research Accelerator/Proof-of-Concept Program
<https://sciencecenter.org/programs/qed>

The Science Center invites academic researchers developing medical and life science technology with commercial potential to apply for the annual QED Proof-of-Concept competition. We provide key resources to facilitate the commercial development of early-stage technologies including:

- Customized business mentorship
- Preparation of a funding plan
- Exposure to investors and industry representatives
- Access to regulatory and legal specialists

Up to three teams will be awarded one-year support of up to \$200,000 each. Funding for each awarded project is contributed equally by the Science Center and the researcher's home institution.

Applications accepted through May 12, 2021. For additional information, please contact William Lutz in the Technology Transfer Office at lutz@njit.edu.

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[Grant Opportunity Alerts](#)

Keywords and Areas Included in the Grant Opportunity Alert Section Below

NSF: NSF Program on Fairness in Artificial Intelligence in Collaboration with Amazon (FAI); Geoinformatics (GI); Resilient & Intelligent NextG Systems (RINGS); Undergraduate STEM Education: Education and Human Resources (IUSE: EHR)

NIH: Research Program Award (R35); NHLBI Emerging Investigator Award (EIA) (R35); BRAIN Initiative: Development and Validation of Novel Tools to Probe Cell-Specific and Circuit-Specific Processes in the Brain (R01); NIH Director's Early Independence Awards (DP5); Translational Neural Devices (U44)

Department of Defense/US Army/DARPA/ONR: ONR Global Research Opportunity: Global-X Challenge; Minerva Research Initiative; Air Force Fiscal Year 2022 Young Investigator Research Program (YIP); Biological Technologies; CENTER OF EXCELLENCE (COE): Brain-Derived Neuromorphic Computing with Intelligent Materials; Defense Manufacturing Communities Support Program; 2021 ERDC Broad Agency Announcement

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

Department of Agriculture: Soil Science Collaborative Research Proposals; 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: EDA University Center Competition – CRO; NOAA Science Collaboration Program; FY2021 to FY2023 NOAA Broad Agency Announcement (BAA)

EPA: Early Career: Measurement and Monitoring Methods for Air Toxics and Contaminants of Emerging Concern in the Atmosphere

Department of Energy: Quantum Horizons: QIS Research and Innovation for Nuclear Science; Assisting Federal Facilities with Energy Conservation Technologies (AFFECT)

NASA: Early Stage Innovations (ESI); ROSES 2021: Instrument Incubator Program; ROSES 2021: Heliophysics Mission Concept Studies; ROSES 2021: Living With a Star Science; New (Early Career) Investigator Program in Earth Science; Earth Science Applications: Health and Air Quality; Advanced Information Systems Technology

[National Endowment of Humanities: Fellowship Programs at Independent Research Institutions;](#)
Digital Projects for the Public; Humanities Initiatives

[Private Foundations:](#)

American Diabetes Association (ADA): The American Diabetes Association Health Disparities and Diabetes Research Award

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[Recent Research Grant and Contract Awards](#)

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

PI: Alexander Kosovichev (PI)

Department: Center for Computational Heliophysics

Grant/Contract Project Title: Consequences of Flows and Fields in the Interior and Exterior of the Sun
COFFIES

Funding Agency: NASA

Duration: 02/20/20-02/19/22

PI: Louis Lanzerotti (PI) and Andrew Gerrard (Co-PI)

Department: Center for Solar Terrestrial Research

Grant/Contract Project Title: Van Allen Probes RBSPICE Phase E Operations - Extended Mission I
and II III, and Phase F (ARDES)

Funding Agency: NASA

Duration: 07/15/16-06/15/21

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[In the News...](#)

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

ENDLESS FRONTIER ACT: <https://www.congress.gov/bill/116th-congress/senate-bill/3832>. While that bill contains significant provisions directed at the Department of Commerce, one major provision in the bill would establish a new “Directorate for Technology and Innovation” at NSF. In that bill, the new directorate would be funded at \$100 billion over five years through a fund managed by the Office of Science and Technology Policy (OSTP) and is structured much differently than existing NSF directorates and the Science and Engineering Solutions Directorate proposed in the NSF for the Future Act. It would have an operations model that borrows many elements of the Defense Advanced Research Projects Agency (DARPA), and a prescriptive list of activities (with prescribed funding allocations for each) to be carried out, including scholarships and fellowships, university technology centers, a lab-to-market program, and test beds, all with the singular goal of enhancing U.S. competitiveness in 10 key technology areas, including the full list described above under the “Emerging Technologies” heading.

Technology and Innovation Directorate within the National Science Foundation: More than 20 lawmakers from both parties and chambers collectively called for the creation of a Technology and Innovation Directorate within the National Science Foundation—and proposed authorizing \$100 billion over five years there to drive research into emerging technologies that could help ensure the U.S. keeps a competitive edge. Mandates that would impact multiple other federal agencies were also included in the [Endless Frontier Act](#), which Senate Majority Leader Chuck Schumer, D-N.Y., Sen. Todd Young, R-Ind., and Reps. Ro Khanna, D-Calif., and Mike Gallagher, R-Wis., led a broader group of lawmakers in reintroducing this week. It follows a similar but not identical version of [legislation under the same name](#) put forward in the previous Congressional session.

“We spent the last year seeking and listening to feedback from the science community, researchers, constituents, labor groups, industry leaders, national security stakeholders, and key members and committees in Congress,” Khanna told *Nextgov* in an email statement Thursday. “We took into account various suggested changes they raised as we updated the bill.” One of the core, top-line elements again included is that novel NSF directorate. It would be explicitly intended to implement strategies and enable basic and translational research opportunities, according to the bill, to advance key modern technological areas such as quantum computing and information systems, artificial intelligence, biotechnology, semiconductors, robotics and more. Among other duties, that directorate would work to help diversify the STEM workforce, steer massive research investments at universities to push forward those technology realms, and institute programs to accelerate the transfer of tools between labs and the marketplace. That directorate could also partner with the rest of the agency, as well as others including the Energy Department and National Institute of Standards and Technology to achieve its aims.

This legislation would also allocate \$10 billion over five years for the Commerce Department to put toward boosting technology and innovation in regional hubs across the nation, and another \$2.4 billion for work with other agencies to expand U.S. manufacturing-centered initiatives. More information is posted on the [NextGov website](#).

President’s FY 2022 Discretionary Funding Request: For complete information on the President’s FY 2022 discretionary funding request, please visit: <https://www.whitehouse.gov/omb/FY-2022-Discretionary-Request/>. President’s FY 2022 budget includes:

U.S. Department of Education

- **Topline:** \$102.8 billion, a \$29.8 billion, or 41%, increase over the FY21 level.

U.S. Department of Health and Human Services

- **Topline:** \$131.7 billion, a \$25 billion or 23.5% increase from the FY21 level.
- **National Institutes of Health:** \$51 billion, a \$9 billion increase over FY21
 - **New Advanced Research Projects Agency for Health (ARPA-H):** \$6.5 billion to launch ARPA-H. With an initial focus on cancer and other diseases such as diabetes and Alzheimer’s, this major investment in Federal research and development would drive transformational innovation in health research and speed application and implementation of health breakthroughs.
- **Help End the Opioid Epidemic:** \$10.7 billion, an increase of \$3.9 billion over the FY21 level, to support research, prevention, treatment, and recovery support services, with targeted investments to support populations with unique needs, including Native Americans, older Americans, and rural populations.

U.S. Department of Commerce

- **Topline:** \$11.4 billion, a \$2.5 billion or 28% increase from the FY21
- **National Oceanic and Atmospheric Administration:** \$6.9 billion, a \$1.4 billion increase over FY21. Specifically, \$800 million to expand investments in climate research, support regional and

local decision-making with climate data and tools, and improve community resilience to climate change.

- **National Institute of Standards and Technology:** \$916 million, a \$128 million increase from FY21, for scientific and technological research in climate-resilient building codes, computing, cybersecurity, and artificial intelligence, quantum information science, biotechnology, and advanced manufacturing, and to establish prize competitions to pursue key technology goals to benefit all Americans

U.S. Department of Energy (DOE)

- **Topline:** \$46.1 billion, a \$4.3 billion or 10.2% increase from FY21
- **Office of Science:** \$7.4 billion, an increase of more than \$400 million over the FY21 level, to better understand the changing climate; identify and develop novel materials and concepts for clean energy technologies of the future; advance artificial intelligence and computing to enhance prediction and decision making across numerous environmental and scientific challenges; and support the National Laboratory network with cutting-edge scientific facilities.
- **Spurs Innovation in Clean Energy Technologies:** \$8 billion, an increase of at least 27% over FY21, in technology such as advanced nuclear energy technologies, electric vehicles, green hydrogen, and even innovative approaches to air conditioning and refrigeration.
- **Drives Breakthrough Solutions in Climate Innovation and Clean Energy:** \$1 billion to create a new Advanced Research Projects Agency for Climate and invest in the existing Advanced Research Projects Agency-Energy of which \$700 million is funding through DOE.

National Science Foundation (NSF)

- **Topline:** \$10.2 billion, a \$1.7 billion or 20% increase over the FY21 level
- **New Directorate for Technology, Innovation, and Partnerships:** The Directorate would work with programs across the Agency and with other existing Federal and non-Federal entities to expedite technology development in emerging areas that are crucial for U.S. technological leadership, including artificial intelligence, high performance computing, disaster response and resilience, quantum information systems, robotics, advanced communications technologies, biotechnology, and cybersecurity.
- **Enhances Fundamental Research and Development:** \$9.4 billion, an increase of \$1.6 billion above the FY21 level, to support research across the spectrum of science, engineering, and technology, including biological sciences, computer and information sciences, engineering, geosciences, math and physical sciences, social, behavioral, and economic sciences, and education.
- **Advances Climate Science and Sustainability Research:** \$1.2 billion for climate and clean energy related research, an increase of \$500 million above the FY21 level. NSF would fund a broad portfolio of research related to climate science and clean energy, including research on atmospheric composition, water and carbon cycles, modeling climate systems, renewable energy technologies, materials sciences, and social, behavioral, and economic research on human responses to climate change.

Biden Pitches Expanded Federal Research Investments to Keep U.S. Competitive: President Joe Biden repeated prior [commitments](#) and expanded on his broad agenda that involves investing heavily in America’s research and technology landscape during his first formal address to Congress on Wednesday night. The administration’s recently proposed [American Jobs Plan](#) includes the biggest increase in nondefense research and development on record, he noted.

“We will see more technological change in the next 10 years than we saw in the last 50—that’s how rapidly artificial intelligence and so much more is changing. And we’re falling behind in that competition with the rest of the world,” Biden said. “Decades ago, we used to invest 2% of our [gross domestic product

in America] on research and development. Today, we spend less than 1%. China and other countries are closing in fast. We have to develop and dominate the products and technologies of the future: advanced batteries, biotechnology, computer chips and clean energy.”

Under [that plan](#), billions of dollars would be put toward basic research, federally focused innovation and increasingly critical technologies. Calling it “a blue-collar blueprint to build America,” Biden said the proposal would produce jobs to grow America’s economy and upgrade its transportation and communications infrastructure. “It creates jobs connecting every American with high-speed internet, including 35% of rural Americans who still don’t have it,” he noted, adding, “this will help our kids and businesses succeed in a 21st-century economy.”

“Our grids are vulnerable to storms, hacks and catastrophic failures—with tragic results as we saw in Texas and elsewhere during winter storms,” Biden said. The U.S. will additionally work with like-minded allies in these efforts. He noted that, “no one nation can deal with all the crises of our time—from terrorism to nuclear proliferation to mass migration, cybersecurity, climate change—and as we’re experiencing now, pandemics.” Just as the Pentagon launched the Defense Advanced Research Projects Agency to develop breakthroughs to enhance America’s national security, which “led to the internet and GPS and so much more,” Biden said the National Institutes of Health should create a similar Advanced Research Projects Agency for [health](#). That hub would develop health breakthroughs to prevent and detect diseases like Alzheimer’s, diabetes and cancer. More information is posted on the [NextGov website](#).

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[Webinar and Events](#)

Event: MCB Virtual Office Hour: Faculty Early-Career Development program (CAREER)

Sponsor: NSF

When: May 12, 2021, 2.00 PM – 3.00 PM

Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=302662&org=NSF

Brief Description: Please join us for our Virtual Office Hour to learn about ongoing and new opportunities at the National Science Foundation and the Division of Molecular and Cellular Biosciences (MCB)! This Office Hour will be Wednesday, May 12 from 2-3pm EST, where we will discuss “Faculty Early-Career Development program (CAREER)” followed by an open Q&A session. Questions should also be broad and of potential interest to others.

To Join the Webinar: Please register [here](#). Join us remotely to listen and learn! For alerts on future MCB Virtual Office Hours and access to past Office Hours, please subscribe to the [MCB Blog](#).

Event: DMS Virtual Office Hours

Sponsor: NSF

When: May 14, 2021, 1.00 PM – 2.00 PM

Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=302627&org=NSF

Brief Description: The Division of Mathematical Sciences (DMS) is hosting virtual office hours to share information about NSF’s current operations and to provide guidance to the mathematical sciences community. All members of the mathematical sciences research community interested in the work of DMS are welcome to attend.

Virtual office hours are held at roughly monthly intervals; topics vary. The event will be in the form of a webinar, starting with a brief presentation of selected current topics, with DMS program directors available to answer questions from the community.

To Join the Webinar: Participants should register (and may do so in advance) at the web page

https://nsf.zoomgov.com/webinar/register/WN_UiPeugTbT8ahHhCY1trAUA

Event: NSF CAREER Program Webinars

Sponsor: NSF

When: May 14, 2021; 1:00 PM - 3:00 PM; May 20, 2021; 1:00 PM - 3:00 PM

Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=302474&org=NSF

Brief Description: NSF is providing information on the [NSF Faculty Early Career Development \(CAREER\) program solicitation NSF 20-525](#) at webinars on Friday, May 14, and Thursday, May 20, 2021, starting at 1:00 pm Eastern time each day.

The NSF-wide CAREER program supports early-career faculty who have the potential to serve as academic role models in research and education and to lead advances in the mission of their department or organization. Activities pursued by early-career faculty should build a firm foundation for a lifetime of leadership in integrating education and research.

Both webinars will include a briefing on the CAREER program and key solicitation requirements followed by a question and answer session. Prior to the webinar, you can submit questions to [NSF CAREER Webinar Questions](#).

Please review the CAREER program [solicitation](#) and [FAQs](#) before the webinar.

To Join the Webinar: Register in advance for the webinar at https://nsf.zoomgov.com/webinar/register/WN_CdBfoDo9QqCEV2h3roKiGQ

- Meeting ID: 161 946 8470
- Passcode: 176334

Event: NSF CAREER Proposal Submission Logistics Webinar

Sponsor: NSF

When: May 19, 2021; 3:00 PM - 4:00 PM

Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=302641&org=NSF

Brief Description: Representatives from NSF's Division of Information Systems will provide system-related information to assist proposers to submit proposals in response to the [NSF Faculty Early Career Development \(CAREER\) program solicitation NSF 20-525](#) at a technical webinar on Wednesday, May 19 at 3:00 pm Eastern time.

To Join the Webinar: Please register in advance for this webinar: https://nsf.zoomgov.com/webinar/register/WN_WihOFuDfQ9uOtdAGxNP1xg

Event: International funding opportunity: Recovery, Renewal and Resilience in a Post-Pandemic World

Sponsor: NSF

When: May 27, 2021; 12:00 PM - 2:00 PM

Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=302665&org=NSF

Brief Description: Recovery, Renewal and Resilience in a Post-Pandemic World is a new international funding opportunity supporting social, behavioral and economic science research on the impacts of the COVID-19 pandemic. Organized through the Trans-Atlantic Platform, the endeavor is a partnership between the U.S. National Science Foundation's Directorate for Social, Behavioral and Economic Sciences and scientific funding agencies in 11 other countries.

An informational webinar will be held on May 27 from noon – 2 p.m. EDT.

Researchers, administrative staff and others in the social, behavioral and economic sciences community are encouraged to attend. Featured speakers include NSF Assistant Director Arthur Lupia, head of the Social, Behavioral and Economic Sciences Directorate, NSF senior advisor Deborah Olster and NSF program director Kwabena Gyimah-Brempong.

Attendees will have an opportunity to ask questions during a live Q&A session.

- **Registration is required.** See [webinar registration page](#).
- **Real-time captions will be available during the meeting.** See [webinar captions page](#).
- If you require additional reasonable accommodations, please contact nfsbemtgsupport@nsf.gov by May 25.
- A video will be available after the event for those unable to attend the live presentations.

To Join the Webinar: For full program details, see [Trans-Atlantic Platform Recovery, Renewal, and Resilience in a Post-Pandemic World \(T-AP RRR\)](#).

Event: NSF Virtual Grants Conference

Sponsor: NSF

When: June 7, 2021 1:00 PM to June 11, 2021 4:00 PM

Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=302504&org=NSF

Brief Description: Join the National Science Foundation for the [Spring 2021 NSF Virtual Grants Conference](#), to be held during the week of **June 7-11, 2021**.

Just like the in-person grants conferences, the NSF Virtual Grants Conference is a must, especially for new faculty, researchers and administrators.

Highlights include:

- New programs and initiatives
- NSF Directorate sessions
- Future directions and strategies for national science policy
- Proposal preparation
- NSF's merit review process
- Conflict of interest policies

The conference is designed to give new faculty, researchers, and administrators key insights into a wide range of current issues at NSF. NSF program officers will provide up-to-date information about specific funding opportunities and answer attendee questions.

To Join the Webinar: Register in advance at <https://nsfpolicyoutreach.com/spring-21-virtual-conf/> on or after May 5, 2021.

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[Grant Opportunities](#)

[National Science Foundation](#)

Grant Program: NSF Program on Fairness in Artificial Intelligence in Collaboration with Amazon (FAI)

Agency: National Science Foundation NSF 21-585

RFP Website: <https://www.nsf.gov/pubs/2021/nsf21585/nsf21585.htm>

Brief Description: NSF has long supported transformative research in artificial intelligence (AI) and machine learning (ML). The resulting innovations offer new levels of economic opportunity and growth, safety and security, and health and wellness, intended to be shared across all segments of society. Broad societal acceptance of large-scale deployments of AI systems rely critically on their trustworthiness which, in turn, depends on the ability to assess and demonstrate the fairness (including broad accessibility and utility), transparency, explainability, impartiality, inclusivity, and accountability of such systems. For example, the behavior of algorithms for face recognition, speech, and language, especially when

integrated into decision support systems applied across different segments of society, would benefit from new foundational research in fairness of AI systems.

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.

Advancing AI is a highly interdisciplinary endeavor drawing on fields such as computer science, information science, engineering, statistics, mathematics, cognitive science, psychology, sociology, decision science, and economics. Considerations of practice, often derived from the social, behavioral, and economic sciences, can inform new directions for computational science to better realize the benefits of algorithmic and data fairness. As such, NSF and Amazon expect these varied perspectives to be critical for the study of fairness in AI. NSF's ability to bring together multiple scientific disciplines uniquely positions the agency in this collaboration, while building AI that is fair and unbiased is an important aspect of Amazon's AI initiatives. This program supports the conduct of fundamental computer science research into theories, techniques, and methodologies that go well beyond today's capabilities and are motivated by challenges and requirements in real systems.

Awards: Standard Grant or Continuing Grant; Anticipated Funding Amount: \$7,600,000

Award Size: \$600,000 up to a maximum of \$1,000,000 for periods of up to 3 years.

Letters of Intent: Not Required

Full Proposal Submission Deadline: August 03, 2021

Contacts: Todd Leen, Program Director, CISE/IIS, telephone: (703) 292-8930, email: tleen@nsf.gov

- Sylvia Spengler, Program Director, CISE/IIS, telephone: (703) 292-8930, email: sspengle@nsf.gov
- Steven Breckler, Program Director, SBE/BCS, telephone: (703) 292-7369, email: sbreckle@nsf.gov

Grant Program: Geoinformatics (GI)

Agency: National Science Foundation NSF 21-583

RFP Website: <https://www.nsf.gov/pubs/2021/nsf21583/nsf21583.htm>

Brief Description: The Division of Earth Sciences (EAR) will consider proposals for the development of cyberinfrastructure (CI) for the Earth Sciences (Geoinformatics). EAR-supported geoinformatics opportunities will fit into three tracks: Catalytic Track, Facility Track, and Sustainability Track. These tracks broadly support the lifecycle of geoinformatics resource development, from pilots (Catalytic) to broad implementation (Facility) to sunseting and long-term sustainability (Sustainability).

The **GI Catalytic Track** will support pilot geoinformatics development efforts that are intended to serve Earth Science research.

The **GI Facility Track** will support awards for implementation and operation of a cyberinfrastructure resource relied upon by one or more Earth Science communities to address science questions.

The **GI Sustainability Track** will support development and implementation of sustainable funding models to preserve data and software products of value to Earth Science research.

Awards: Standard Grant or Continuing Grant or Cooperative Agreement; Anticipated Funding Amount: \$5,300,000 annually, pending the availability of funds.

Letters of Intent: Not Required

Full Proposal Submission Deadline: August 16, 2021

Contacts: Raleigh Martin, telephone: (703) 292-7199, email: ramartin@nsf.gov

Grant Program: Resilient & Intelligent NextG Systems (RINGS)

Agency: National Science Foundation NSF 21-581

RFP Website: <https://www.nsf.gov/pubs/2021/nsf21581/nsf21581.htm>

Brief Description: The RINGS program seeks to accelerate research in areas that will potentially have significant impact on emerging Next Generation (NextG) wireless and mobile communication, networking, sensing, and computing systems, along with global-scale services, with a focus on greatly improving the resiliency of such networked systems among other performance metrics. Modern communication devices, systems, and networks are expected to support a broad range of critical and essential services, incorporating computation, coordination, and intelligent decision making. Resiliency of such systems, which subsumes security, adaptability, and autonomy, will be a key driving factor for future NextG network systems. Resiliency in both design and operations ensures robust network and computing capabilities that exhibit graceful performance- and service-degradation with rapid adaptability under even extreme operating scenarios. The RINGS program seeks innovations to enhance both resiliency as well as performance across the various aspects of NextG communications, networking and computing systems. This program seeks to go beyond the current research portfolio within the individual participating directorates by simultaneously emphasizing gains in resiliency (through security, adaptability and/or autonomy) across all layers of the networking protocol and computation stacks as well as in throughput, latency, and connection density.

In this program, NSF is partnering with the Office of the Under Secretary of Defense for Research and Engineering (OUSD R&E), the National Institute of Standards and Technology (NIST) and a number of industry partners shown above. This program seeks to fund collaborative team research that transcends the traditional boundaries of individual disciplines to achieve the program goals.

Awards: Continuing Grant; Anticipated Funding Amount: \$37,500,000 to \$40,000,000

Letters of Intent: Prospective PIs are encouraged to send a one-page concept paper to EHRRacequityPD@nsf.gov in advance of submitting a proposal.

Full Proposal Submission Deadline: July 29, 2021

Contacts: Alexander Sprintson, CISE/CNS, telephone: (703) 292-8950, email: asprints@nsf.gov

- Murat Torlak, CISE/CNS, telephone: (703) 292-7748, email: mtorlak@nsf.gov
 - Mohammad Ali, ENG/ECCS, telephone: (703) 292-4632, email: moali@nsf.gov
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Grant Program: Improving Undergraduate STEM Education: Education and Human Resources (IUSE: EHR)

Agency: National Science Foundation NSF 21-579

RFP Website: <https://www.nsf.gov/pubs/2021/nsf21579/nsf21579.htm>

Brief Description: The National Science Foundation (NSF) plays a leadership role in developing and implementing efforts to enhance and improve STEM education in the United States. Through the NSF *Improving Undergraduate STEM Education* (IUSE) initiative, the agency continues to make a substantial commitment to the highest caliber undergraduate STEM education through a Foundation-wide framework of investments. The IUSE: EHR is a core NSF STEM education program that seeks to promote novel, creative, and transformative approaches to generating and using new knowledge about STEM teaching and learning to improve STEM education for undergraduate students. The program is open to application from all institutions of higher education and associated organizations. NSF places high value on educating students to be leaders and innovators in emerging and rapidly changing STEM fields as well

as educating a scientifically literate public. In pursuit of this goal, IUSE: EHR supports projects that seek to bring recent advances in STEM knowledge into undergraduate education, that adapt, improve, and incorporate evidence-based practices into STEM teaching and learning, and that lay the groundwork for institutional improvement in STEM education. In addition to innovative work at the frontier of STEM education, this program also encourages replication of research studies at different types of institutions and with different student bodies to produce deeper knowledge about the effectiveness and transferability of findings.

IUSE: EHR also seeks to support projects that have high potential for broader societal impacts, including improved diversity of students and instructors participating in STEM education, professional development for instructors to ensure adoption of new and effective pedagogical techniques that meet the changing needs of students, and projects that promote institutional partnerships for collaborative research and development. IUSE: EHR especially welcomes proposals that will pair well with the efforts of NSF INCLUDES (https://www.nsf.gov/news/special_reports/nsfincludes/index.jsp) to develop STEM talent from all sectors and groups in our society.

For all the above objectives, the National Science Foundation invests primarily in evidence-based and knowledge-generating approaches to understand and improve STEM learning and learning environments, improve the diversity of STEM students and majors, and prepare STEM majors for the workforce. In addition to contributing to STEM education in the host institution(s), proposals should have the promise of adding more broadly to our understanding of effective teaching and learning practices.

The IUSE: EHR program features two tracks: (1) Engaged Student Learning and (2) Institutional and Community Transformation. Several levels of scope, scale, and funding are available within each track, as summarized in Table 1.

Table 1: Overview of Engaged Student Learning and Institutional and Community Transformation tracks, levels, and deadlines

Track	Level	Deadlines
Engaged Student Learning	Level 1: up to \$300,000 for up to three years	July 21, 2021 January 19, 2022 3 rd Wednesday in January and July thereafter
	Level 2: \$300,001 - \$600,000 for up to three years	July 21, 2021 3 rd Wednesday in July thereafter
	Level 3: \$600,001 - \$2 million for up to five years	July 21, 2021 3 rd Wednesday in July thereafter
Institutional and Community Transformation	Capacity-Building: \$150K (single institution) or \$300K (multiple institutions) for up to two years	July 21, 2021 January 19, 2022 3 rd Wednesday in January and July thereafter
	Level 1: up to \$300,000 for up to three years	July 21, 2021 January 19, 2022 3 rd Wednesday in January and July thereafter
	Level 2: \$300,001 - \$2 million (single institution) or \$3 million (multiple institutions and research centers) for up to five years	July 21, 2021 3 rd Wednesday in July thereafter

Awards: Standard Grant or Continuing Grant; Anticipated Funding Amount: \$63,000,000

Letters of Intent: Not Required

Full Proposal Submission Deadline: July 21, 2021

Contacts: Ellen Carpenter, telephone: (703) 292-5104, email: elcarpen@nsf.gov

- Keith A. Sverdrup, telephone: (703) 292-4671, email: ksverdru@nsf.gov
- John Jackman, telephone: (703) 292-4816, email: jjackman@nsf.gov

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National Institutes of Health

Grant Program: Research Program Award (R35 Clinical Trial Optional)

Agency: National Institutes of Health RFA-NS-21-020

RFP Website: <https://grants.nih.gov/grants/guide/rfa-files/RFA-NS-21-020.html>

Brief Description: The NINDS RPA aims to support the NINDS-related research of an investigator's laboratory or research group for a sustained period. The award is intended to increase funding stability, reduce the time investigators spend writing grant applications, and facilitate a more flexible research environment. This should allow for increased time for investigators to be directly involved in the research in their laboratories, fostering more creative and/or long-term research goals, enabling more engagement with students and postdoctorates, and assuring a high level of rigor and attention to experimental design – all of which contribute to advancing the [mission of NINDS](#).

Because the RPA is intended to support most, if not all, of the NINDS-related research in an investigator's laboratory, investigators receiving an RPA must relinquish their other NINDS research grants, with a limited number of exceptions, see below. PD/PIs can retain non-overlapping grant support from other NIH ICs, provided they maintain the required level of effort on the RPA (see below). The grant awards that PDs/PIs receive from leading or participating in NINDS multiple-PD/PI research grants, program project grants, and/or Center grants will also be incorporated into the RPA, but the investigator will be expected to continue the collaboration with support from RPA.

By replacing all or most of an investigator's NINDS funding, the RPA should support research that is the major focus of the investigator's laboratory or research group. Therefore, the PD/PI must devote at least 6 person months (i.e., the equivalent of 50% effort on a full-year appointment, 66.67% on a 9-month appointment, or 100% on a 6-month appointment) to the RPA throughout the duration of the award. Applications from PD/PIs committing less than the required amount will not be accepted. When applicable, PDs/PIs will be expected to renegotiate their time and effort on other non-NINDS awards to accommodate the level of effort required by the RPA.

When considering an RPA application, investigators should balance this funding paradigm against the benefits of the RPA, which include:

- Funding stability for up to eight years. The initial budget period will be five years, with an additional three years granted contingent upon an administrative review (see Duration, below);
- Support for an investigator's other currently-funded NINDS research grants will in effect be extended through the RPA, without requiring submission of separate renewal applications;
- Reduced administrative burden and relief from the constant pressure to write multiple grant applications and manage multiple grant awards.
- Increased flexibility to pursue new ideas and scientific opportunities as they arise since the award does not require specific aims and is not predicated on completing specific, pre-defined research objectives.

Eligibility: Eligibility to apply through this FOA is limited to individuals who have been funded continuously as PD/PI in each of the past five consecutive years at the time of application submission.

Awards: The budget for the RPA will be set at a fixed level that is generally commensurate with the PD/PIs funding over the prior four years. No RPA budget will exceed \$750K direct costs (DC) per year, and no RPA will be awarded for less than \$350K direct cost (DC) per year.

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

Proposal Submission Deadline: July 13, 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.

Contact: Alisa Schaefer, Ph.D.; National Institute of Neurological Disorders and Stroke (NINDS); Telephone: 301-496-9248; E-mail: alisa.schaefer@nih.gov

Grant Program: NHLBI Emerging Investigator Award (EIA) (R35 Clinical Trial Optional)

Agency: National Institutes of Health RFA-HL-23-005

RFP Website: <https://grants.nih.gov/grants/guide/rfa-files/RFA-HL-23-005.html>

Companion Funding Opportunity: [RFA-HL-23-004](#) , [R35](#) Outstanding Investigator Award

Brief Description: The purpose of the NHLBI Emerging Investigator Award (EIA) is to promote scientific productivity and innovation by providing long-term support and increased flexibility to experienced Program Directors/Principal Investigators (PD/PIs) who are currently PD/PIs on at least two NHLBI R01-equivalent awards, of which one must be an NHLBI-funded NIH [Early Stage Investigator](#) R01 award, and whose outstanding record of research demonstrate their ability to make major contributions to heart, lung, blood and sleep (HLBS) research. The EIA is intended to support a research program, rather than a research project, by providing the primary and most likely sole source of NHLBI funding.

The EIA will support the research program of NHLBI-funded investigators for up to seven years. The EIA will provide investigators increased freedom to conduct research that breaks new ground or extends previous discoveries in new directions. It will also allow PD/PIs to take greater risks and to pursue research that requires a longer timeframe. Research supported by the EIA must be within the scope of the [NHLBI mission](#).

Applicants are strongly encouraged to review the [NHLBI R35 Program Frequently Asked Questions \(FAQs\)](#) and consult with the appropriate scientific research contacts.

Overview

This FOA is intended for established investigators who have the potential to conduct outstanding, innovative research. For this reason, eligibility is limited. Please refer to [Section III. Eligibility Information](#) for specific details.

It is anticipated that the NHLBI EIA will:

- Provide a stable funding environment, thereby improving productivity and facilitating ambitious, creative research;
- Accelerate scientific innovation by enabling flexibility in pursuing new research directions as they arise, since PD/PIs will not be bound to specific aims proposed in advance of the studies;
- Reduce the time researchers spend writing grant applications and managing multiple grant awards, thereby allowing more time to be devoted to conducting research;
- Facilitate PD/PIs' commitment to research through increased stability of funding; and
- Enable PD/PIs to devote more time and energy to mentoring junior scientists and providing scientific service.

An EIA is intended to be the primary, and in most cases, sole support for all of the NHLBI-related research conducted by an investigator. Research supported through the EIA must be related to HLBS research as

described within the scope of the [NHLBI mission](#). Within these bounds, investigators will have the freedom to explore new avenues of inquiry that arise during the course of their research. Work involving the addition of human subjects, vertebrate animals, stem cells, select agents, or a new foreign component requires prior approval of NHLBI according to existing policies and procedures.

Awards: Applications may request up to \$700,000 direct costs per year. Investigators are encouraged to request what is well-justified for their research program.

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

Proposal Submission Deadline: February 15, 2022

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

Applicants are encouraged to apply early to allow adequate time to make any corrections to errors found in the application during the submission process by the due date.

Contact: Division of Cardiovascular Sciences; Narasimhan Danthi, Ph.D.; Telephone: 301-451-5170
Email: ndanthi@nhlbi.nih.gov

Grant Program: BRAIN Initiative: Development and Validation of Novel Tools to Probe Cell-Specific and Circuit-Specific Processes in the Brain (R01 Clinical Trial Not Allowed)

Agency: National Institutes of Health RFA-MH-21-175

RFP Website: <https://grants.nih.gov/grants/guide/rfa-files/RFA-MH-21-175.html>

Brief Description: This Funding Opportunity Announcement (FOA) is designed to support development and validation of novel tools to facilitate the detailed analysis of cells and circuits and provide insights into the neural circuitry and structure underlying complex behaviors. The human brain consists of an estimated one hundred billion neurons and more than one trillion supporting glial cells that are uniquely organized to confer the extraordinary computational activities of the brain. Cell types are categorized by their anatomical position, neurotransmitter content, dendritic and axonal connections, receptor profile, gene expression profile, and distinct electrical properties. Although the human brain has long been the focus of numerous studies with major achievements made along the way, many specific details about the brain remain to be discovered, such as cell types and connections that are responsible for rapid information processing. Defining cellular and circuit-level function is dependent on detailed knowledge about the components and structure of the circuit. Such knowledge, in turn, is fundamental to understanding how these features underlie cognition and behavior, which should aid in the development of targeted cell-type and circuit-specific therapeutics to treat brain disorders. Improved technology is needed to obtain this knowledge.

This FOA solicits applications to develop next-generation, innovative technologies to define and target specific cell types in the brain. Of particular interest are first-in-class and/or cross-cutting non-invasive or minimally invasive techniques that permit repeated measurements from cells over time in a non-destructive manner. Tools/technologies relevant for this initiative are expected to be transformative, either through the development of novel tools that may be high-risk or through major advances in current approaches that break through technical barriers and will significantly improve current capabilities. An emphasis of the BRAIN initiative is the development of novel tools to study the brain, and here we highlight the need for innovative approaches to bridge experimental scales. Studies that are able to explore molecular and cellular mechanisms of neural activity permitting improved precision and sensitivity in the analysis of micro-and macro-circuits are strongly encouraged. Progress in understanding how the activity of the brain translates to complex behaviors will be facilitated by non-invasive approaches for both monitoring and manipulating neural activity in awake, behaving organisms.

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

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

Proposal Submission Deadline: October 08, 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.

Contact: Douglas S. Kim, Ph.D.; National Institute of Mental Health (NIMH); Telephone: 301-827-6463
Email: douglas.kim@nih.gov

Grant Program: NIH Director's Early Independence Awards (DP5 Clinical Trial Optional)

Agency: National Institutes of Health RFA-RM-21-018

RFP Website: <https://grants.nih.gov/grants/guide/rfa-files/RFA-RM-21-018.html>

Brief Description: The [NIH Director's Early Independence Award](#) provides an opportunity for exceptional junior scientists to accelerate their entry into an independent research career by forgoing the traditional post-doctoral training period. Though most newly graduated doctoral-level researchers would benefit from post-doctoral training, a small number of outstanding junior investigators are capable of launching directly into an independent research career. The Early Independence Award is intended for these select junior investigators who have already established a record of scientific innovation and research productivity and have demonstrated unusual scientific vision and maturity; typical post-doctoral training would unnecessarily delay their entry into independent research. The NIH Director's Early Independence Award also provides an opportunity for institutions to invigorate their research programs by bringing in fresh scientific perspectives of the awardees they host.

In order to support the most innovative and impactful research, the NIH recognizes the need to foster a diverse research workforce across the nation. Applications to this award program should reflect the full diversity of potential PDs/PIs, applicant institutions, and research areas relevant to the broad mission of NIH. Talented researchers from diverse backgrounds (see [NOT-OD-20-031](#)), including individuals from underrepresented racial and ethnic groups, individuals with disabilities, individuals from disadvantaged backgrounds, and women, are strongly encouraged to work with their institutions to develop applications for this Funding Opportunity Announcement.

Applications are welcome in all research areas broadly relevant to the mission of NIH. These areas include, but are not limited to, the behavioral, medical, natural, social, applied, and formal sciences. Research may be basic, translational, or clinical. The primary requirements are that the research be highly innovative and have the potential for unusually broad impact.

The NIH Director's Early Independence Award is part of the [High-Risk, High-Reward Research program](#) funded through the [NIH Common Fund](#), which supports cross-cutting programs that are expected to have exceptionally high impact. All Common Fund initiatives invite investigators to develop bold, innovative, and often risky approaches to address problems that may seem intractable or to seize new opportunities that offer the potential for rapid progress.

To be eligible, investigators, at the time of application, must have received their most recent doctoral degree or completed clinical training within the previous fifteen months or expect to do so within the following twelve months. To be consistent with the updated [NIH definition of Early Stage Investigators](#), eligible clinical training includes clinical residency and clinical fellowship. For full eligibility requirements, see [Section III. Eligibility Information](#).

Awards: Awards will be for up to \$250,000 in direct costs per year, plus applicable Facilities and Administrative (F&A) costs.

Letter of Intent: August 3, 2021

Proposal Submission Deadline: September 03, 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.

Contact: Becky Miller, Ph.D.; Office of the Director (OD); Telephone: 301-594-9979

Email: earlyindependence@od.nih.gov

Grant Program: Translational Neural Devices (U44 Clinical Trial Optional)

Agency: National Institutes of Health RFA-NS-21-022

RFP Website: <https://grants.nih.gov/grants/guide/rfa-files/RFA-NS-21-022.html>

Brief Description: This FOA supports non-clinical testing to enable IRB and/or FDA approval needed to conduct a small clinical study, and the subsequent study itself (e.g., Early Feasibility Study - <https://www.fda.gov/downloads/medicaldevices/deviceregulationandguidance/guidancedocuments/ucm279103>). All projects will be Fast-Track applications and have two phases. SBIR Phase I will support non-clinical translational device activities to obtain an IDE and IRB approval for an SR clinical study, or to obtain IRB approval for an NSR clinical study. The duration of SBIR Phase I will depend on the maturity of the project at entry. Phase II will support a small clinical study and can last up to three years, however, the total project period (including both phases) must not exceed five years. Projects for which only a clinical phase is proposed are outside of the scope of this funding opportunity. Only those SBIR Phase I projects that have met specific criteria (see below) will be eligible for transition to SBIR Phase II after NIH administrative review. Furthermore, ethical considerations are intrinsic to the responsible conduct of neuroscience research and the translation of neuroscience advances (scientific and technological) into clinical practice.

Awards: Applicants should rarely exceed \$1,000,000 in total costs per year during the SBIR Phase I and \$1,500,000 in total costs per year during the SBIR Phase II.

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

Proposal Submission Deadline: July 1, 2021; October 20, 2021; February 18, 2022

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

Applicants are encouraged to apply early to allow adequate time to make any corrections to errors found in the application during the submission process by the due date.

Contact: Eric Hudak, Ph.D.; National Institute of Neurological Disorders and Stroke (NINDS); Telephone: 301-496-1779; Email: NINDS-Devices@nih.gov

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

Grant Program: ONR Global Research Opportunity: Global-X Challenge

Agency: Department of Defense Office of Naval Research N00014-21-S-SN10

Website: <https://www.grants.gov/web/grants/view-opportunity.html?oppId=333307>

Brief Description: This notice announces the 2021 ONR Global-X Challenge and describes new funding to be awarded under the authority of N00014-21-S-B001, Long Range Broad Agency Announcement for Navy and Marine Corps Science and Technology which can be found at the following link: <https://www.onr.navy.mil/work-with-us/funding-opportunities/announcements>.

ONR Global expects to have up to a total of \$500,000 available for the initial nine-month period of performance for grants awarded under the 2021 Global-X Challenge. Additional funding may be possible for an additional nine month optional research effort, following successful concept demonstration. Total grant award values, including the initial and additional optional research period, will not exceed \$1,000,000. ONR Global may award one grant or multiple grants, addressing a single challenge area or multiple grants addressing each of the three challenge areas described in this special notice below. The number of grants and amounts of funding for each grant will depend on proposals submitted. ONR Global expects successfully demonstrated concepts will attract additional funding from other sources for potential follow-on accelerated research efforts under a separate agile acquisition mechanism; however, this does not imply the promise of additional funding. The purpose of this announcement is to focus the attention of the international scientific community on (1) the challenge areas of interest; (2) a Global-X Challenge Kick-off Webinar on 29 April 2021 at 0700 hours EDT; and (3) the planned timetable for the submission of white papers and full proposals.

Awards: Multiple awards.

Letter of Intent: Please see below.

Proposal Deadline: White Paper Submission Date 28 May 2021 23:59 Eastern Daylight Time (EDT)
Notification of White Paper Valuation* 11 June 2021 17:00 EDT Full Proposal Submission 9 July 2021 23:59 EDT

Contact Information: Dr. Charles Eddy, ONR Global Science Director, charles.r.eddy12.civ@mail.mil

Grant Program: Minerva Research Initiative

Agency: Department of Defense WHS-AD-FOA-21-01

Website: <https://www.grants.gov/web/grants/view-opportunity.html?oppId=333371>

Brief Description: The Office of the Secretary of Defense (OSD) is interested in receiving proposals for the Minerva Research Initiative (<http://minerva.defense.gov>), a university-led defense social science program seeking fundamental understanding of the social and cultural forces shaping U.S. strategic interests globally. OSD is particularly interested in projects that align with and support the National Defense Strategy, found at: <https://www.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf>

The Minerva Research Initiative (Minerva) emphasizes questions of strategic importance to U.S. national security policy. It seeks to increase the Department's intellectual capital in the social sciences and improve its ability to address future challenges and build bridges between the Department and the social science community. Minerva brings together universities and other research institutions around the world and supports multidisciplinary and cross-institutional projects addressing specific interest areas determined by the Department of Defense. The Minerva program aims to promote research in specific areas of social science and to promote a candid and constructive relationship between DoD and the social science academic community.

The Minerva Research Initiative competition is for research related to nine (9) topics listed below. Innovative white papers and proposals related to these research areas are highly encouraged. Detailed descriptions of the interest areas—which are intended to provide a frame of reference and are not meant to be restrictive—can be found in Section IX, “Minerva Topics.” Topic 1: Social Implications of Environmental Change Topic 2: Resource Competition, Social Cohesion, and Strategic Climate Resilience Topic 3: Security Risks in Ungoverned, Semi-Governed, and Differently-Governed Spaces Topic 4: Analysis of Foreign Influence Operations in Cross-Cultural Perspective Topic 5: Community Studies on Online and Offline Influence Topic 6: Computational Social Science Research on Difficult-to-Access Environments Topic 7: Social and Cultural Implications of Artificial Intelligence Topic 8: Humans and Outer Space Topic 9: Management and Information in the Defense Environment

Awards: Multiple awards; Estimated Total Program Funding: \$15,000,000

Letter of Intent: White paper due on June 23, 2021 3:00 PM ET

Proposal Deadline: September 29, 2021 3:00 PM ET

Contact Information: Christina L Gess Grantor Phone 703-545-1880 [Contract Specialist WHSAD](#)

Grant Program: Air Force Fiscal Year 2022 Young Investigator Research Program (YIP)

Agency: Department of Defense Air Force Office of Scientific Research FOA-AFRL-AFOSR-2021-0006

Website: <https://community.apan.org/wg/afosr/w/researchareas/12792/young-investigator-program-yip/>

Brief Description: The Fiscal Year 2022 Air Force Young Investigator Research Program (YIP) intends to support young in career scientists and engineers who have received Ph.D. or equivalent degrees by 1 April 2015 or later showing exceptional ability and promise for conducting basic research. The program objective is to foster creative basic research in science and engineering; enhance early career development of outstanding young investigators; and increase opportunities for the young investigator to recognize the Air Force mission and related challenges in science and engineering.

Awards: Multiple awards. Award Ceiling: \$450,000.

Letter of Intent: Please see below.

Proposal Deadline:

Pre-Solicitation YIP questions due	30 Apr 2021
Pre-Solicitation YIP answers posted	14 May 2021
White Paper submissions due	31 May 2021
White Paper PO responses due	14 Jun 2021
Full Proposals due	12 Jul 2021

Contact Information: Ellen M. Robinson, AFOSR; Email: afosryip@us.af.mil

Grant Program: Biological Technologies

Agency: Department of Defense DARPA - Biological Technologies Office HR001121S0025

Website: <https://beta.sam.gov/opp/dfe93a5637fc419a8ea392ee949f9c79/view>

Brief Description: The mission of BTO is to foster, demonstrate, and transition breakthrough research, discoveries, and applications that integrate biology, engineering, computer science, mathematics, and the physical sciences. BTO's research investment portfolio includes combating pandemic disease, innovative physiological interventions, human performance and warfighter readiness, and deep exploration of changing ecologies and environments for improving U.S. capabilities and resilience. BTO's programs operate across a wide range of scales, from individual cells to the warfighter to global ecosystems. BTO responds to the urgent and long-term needs of the Department of Defense (DoD) and addresses national security priorities.

Awards: Multiple awards.

Letter of Intent: Please see below.

Proposal Deadline: Proposal Abstract Due Date and Time: Abstracts may be submitted on a rolling basis until 4:00 PM ET, April 20, 2022 o Full Proposal Due Date and Time: Proposals may be submitted on a rolling basis until 4:00 PM ET, April 20, 2022

Contact Information: The BAA Coordinator for this effort may be reached at:
BTOBAA2021@darpa.mil

Grant Program: CENTER OF EXCELLENCE (COE): Brain-Derived Neuromorphic Computing with Intelligent Materials

Agency: Department of Defense Air Force Office of Scientific Research FOA-AFRL-AFOSR-2021-0005

Website: <https://www.grants.gov/web/grants/view-opportunity.html?oppId=332883>

Brief Description: This Center of Excellence is anticipated to extend the research interests of AFRL in the topical area of neuromorphic computing and provide opportunities for a new generation of US scientists and engineers to address United States Space Force (USSF) and United States Air Force (USAF) research needs. This is a special FOA because it explicitly calls for (a) research in the highpriority Air Force interest areas of neuroscience, neuromorphic computing, and nanomaterials; and (b) education of students within the US in vital technology areas with opportunities for potential recruitment of US nationals for employment at AFRL. In conjunction with AFRL, AFOSR invites proposals for research in the areas described in detail below. The schedule for this announcement is given in Section B, Federal Award Information. This research effort will consist of multidisciplinary teams of researchers with the skills needed to address the relevant research challenges necessary to meet the program's goals. Multiinvestigator teaming is encouraged. Multi-university teams are allowed. Under no circumstances will the Government help to create teams.

Awards: Multiple awards. Up to \$1,000,000 per year funding.

Letter of Intent: Please see below.

Proposal Deadline: A Proposer's Day will be held virtually on 03 May 2021 for the purpose of facilitating teaming among prospective proposers. The Government is not responsible for and will not assist with team creation. Advance registration is required at <https://community.afosr.org/wg/afosr/w/researchareas/29659/2021-afrl-center-of-excellence-in-brain-derived-neuromorphic-computing-with-intelligent-materials-proposer-s-day/>. If requesting a 5-minute slot for an "elevator pitch" presentation to all attendees, you must register by 28 April 2021. Slots will be reserved on a first-come, first-served basis. Proposer's Day presentations are intended for soliciting teaming relationships, are not a prerequisite for responding to this FOA, and will not influence white paper or proposal evaluations. Presenters' slides will be made publicly accessible at the registration website following the event.

Pre-proposal inquiries and questions must be received in writing by electronic mail not later than 07 May 2021 at 11:59 PM Eastern Daylight Time (EDT) to be considered. White papers must be submitted electronically at <https://community.afosr.org/wg/afosr/p/submitawhitepaper> by 01 June 2021 at 11:59 PM Eastern Daylight Time to be considered.

Proposals must be received electronically through Grants.gov by 16 August 2021 at 11:59 PM Eastern Daylight Time to be considered.

Contact Information: DR. HAL S. GREENWALD, AFOSR/RTA; Cognitive & Computational Neuroscience; Telephone: (703) 588-8441; Email: hal.greenwald@us.af.mil

Grant Program: Defense Manufacturing Communities Support Program

Agency: Department of Defense OLDCC-21-F-0001

Website: <https://oldcc.gov/Defense-Manufacturing-Community-Support-Program>

Brief Description: The DMCSP is designed to support long-term community investments that strengthen national security innovation and expand the capabilities of the defense manufacturing industrial

ecosystem. The Defense Manufacturing Community Support Program (DMCSP) is authorized under Section 846 of Public Law 115-232. The program was developed in collaboration with the Office of the Deputy Assistant Secretary of Defense for Industrial Policy and the Office of the Under Secretary of Defense for Research and Engineering.

The Office of Local Defense Community Cooperation will hold a pre-proposal webinar on **April 23rd and April 26th at 2 p.m. EDT (11 a.m. PDT)**, to review the goals and objectives of the Federal Funding Opportunity and answer questions from interested respondents.

- To participate in the April 23rd webinar, click [here](#).
- To participate in the April 26th webinar, click [here](#).

Awards: Department of Defense announced the award of six (6) grants totaling \$25,000,000.

Letter of Intent: Please see below.

Proposal Deadline: Complete proposals must be submitted through Grants.gov by **5 p.m. PDT on June 15, 2021**.

Contact Information: Michael Gilroy, michael.p.gilroy3.civ@mail.mil

Grant Program: 2021 ERDC Broad Agency Announcement

Agency: Department of Defense US Army ERDC W912HZ-21-BAA-01

Website: <https://www.grants.gov/web/grants/view-opportunity.html?oppId=332617>

Brief Description: The U.S. Army Engineer Research and Development Center (ERDC) includes the Coastal and Hydraulics Lab (CHL), the Geotechnical and Structures Lab (GSL), the Reachback Operations Center (UROC), the Environmental Lab (EL) and the Information Technology Lab (ITL) in Vicksburg, Mississippi, the Cold Regions Research and Engineering Lab (CRREL) in Hanover, New Hampshire, the Construction Engineering Research Lab (CERL) in Champaign, Illinois, and the Geospatial Research Laboratory (GRL) in Alexandria, Virginia. The ERDC is responsible for conducting research in the broad fields of hydraulics, dredging, coastal engineering, instrumentation, oceanography, remote sensing, geotechnical engineering, earthquake engineering, soil effects, vehicle mobility, self-contained munitions, military engineering, geophysics, pavements, protective structures, aquatic plants, water quality, dredged material, treatment of hazardous waste, wetlands, physical/mechanical/ chemical properties of snow and other frozen precipitation, infrastructure and environmental issues for installations, computer science, telecommunications management, energy, facilities maintenance, materials and structures, engineering processes, environmental processes, land and heritage conservation, and ecological processes. This research is conducted by Government personnel and by contract with educational institutions, non-profit organizations and private industries.

The BAA shall only be used when meaningful proposals with varying technical/scientific approaches can be reasonably anticipated. “Basic Research” is defined as research directed toward increasing knowledge in science with the primary aim being a fuller knowledge or understanding of the subject under study, rather than any practical application of that knowledge. “Applied Research” is the effort that normally follows basic research, but may not be severable from the related basic research; attempts to determine and exploit the potential of scientific discoveries or improvements in technology, materials, processes, methods, devices, or techniques; and attempts to advance the state-of-the-art.

Awards: Multiple awards. DARPA is limiting funding for TA2 awards to \$1,450,000 for the entire 18 months of Phase 1 and \$1,500,000 for the entire 18 months of Phase 2. Funding guidance is not provided for TA1.

Letter of Intent: A pre-proposal is required. Please see the BAA for details.

Proposal Deadline: The closing date for the BAA is Feb 28, 2022.

Contact Information: For contractual questions concerning proposals to CHL, EL, GRL, GSL, ITL, and UROC contact the following: ERDC-BAA@usace.army.mil and Reginald J. Bryant at 601-634-

7166 or Reginald.J.Bryant@usace.army.mil or Anitra Wilson at Anitra.D.Wilson@usace.army.mil. For contractual questions concerning proposals to CERL contact: Andrea Thomas at 217-373-6746 or Andrea.J.Thomas@usace.army.mil.

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Department of Transportation

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

Agency: Department of Transportation 693JJ318NF5227-2021

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

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

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

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: Soil Science Collaborative Research Proposals

Agency: Department of Agriculture USDA-NRCS-NHQ-SOILS-21-NOFO0001107

Website: <https://www.grants.gov/web/grants/view-opportunity.html?oppId=332881>

Brief Description: The Natural Resources Conservation Service (NRCS), an agency under the United States Department of Agriculture (USDA), is announcing the potential availability of funding for agreements for the purposes of:

- Promoting research collaboration between the NRCS Soil and Plant Science Division (SPSD) and university cooperators on significant national issues;
- Providing technology transfer and training for NRCS staff;
- Assisting in training of students in soil science and related fields.

Proposals must be for projects based in the United States and its territories and possessions and focus on the priorities described in Section A of this notice. Research proposals are sought. NRCS anticipates that the amount available for support of this program in FY 2021 will be up to \$1,000,000.00. Eligibility is

limited to institutions of higher education in the Cooperative Ecosystem Studies Unit (CESU) network (<http://www.cesu.psu.edu/>).

Awards: Up to \$250,000; Anticipated Available Funding: \$1,000,000.

Proposal Deadline: June 25, 2021

Contact Information: Aileen Anderson Grants Management Specialist Phone 3152215884

[For questions related to application content.](#)

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: EDA University Center Competition - CRO

Agency: U.S. Department of Commerce EDA-CHI-TA-CRO-2021-2006893

Website: <https://www.eda.gov/programs/university-centers/>

Brief Description: EDA recognizes that institutions of higher education are critical players in the development of vibrant economic ecosystems. Universities are sources of significant economic development assets—such as faculty, staff, students, research and proof of concept centers, laboratories, and high-speed broadband networks—that can support regional economic growth.

The purpose of EDA’s University Center program is to enable institutions of higher education and consortia of institutions of higher education to establish and operate University Centers (UCs) specifically focused on leveraging university assets to build regional economic ecosystems that support innovation and high-growth entrepreneurship, resiliency and inclusiveness. By responding to the economic development needs of their regions, University Center programs are demand-driven by nature. Historically, UCs have been leaders in promoting and facilitating economic development in their regions. They have been among the first to recognize emerging technical assistance needs. As early as FY 1980, EDA-funded UCs responded to the needs of small- and medium-sized manufacturers and processors for technology transfer and commercialization assistance. More recently, some UCs have been providing resources and guidance on how to create a digitally inclusive economy while others are working with stakeholders in their regions to address economic impacts from the closure of major plants.

Awards: Project funding up to \$200,000. Anticipated available funding: \$1,400,000

Letter of Intent: Contact the program director.

Proposal Deadline: June 4, 2021

Contact Information: www.eda.gov/contact

Grant Program: NOAA Science Collaboration Program

Agency: U.S. Department of Commerce National Oceanic and Atmospheric Administration (NOAA) NOAA-OAR-CPO-2021-2006797

Website: <https://www.grants.gov/web/grants/view-opportunity.html?oppId=332046>

Brief Description: The NOAA Science Collaboration Program (NSCP) supports research, programs, projects and other activities related to NOAA’s mission, primarily through collaborations among scientists and professionals in areas of mutual interest across the full spectrum of NOAA sciences. This includes the support of undergraduate, graduate, and postdoctoral researchers and scientists with expertise in NOAA-related sciences. It is expected that some of the scientists will collaborate onsite at NOAA facilities and laboratories. Through this funding opportunity, NOAA is also interested in supporting complementary Earth systems research and modeling efforts, social science and interdisciplinary research efforts which can serve as a catalyst for collaborations between NOAA professionals and scientists supported through this program.

Awards: Total Anticipated Funding: \$50,000,000 to \$75,000,000 for the five-year period.

Letter of Intent: Contact the program director.

Proposal Deadline: May 10, 2021

Contact Information: Ms. Kendra R. Hammond 301-734-1223 [Work](#)

Grant Program: Measurement Science and Engineering (MSE) Research Grant Programs

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

Website: <https://www.grants.gov/web/grants/view-opportunity.html?oppId=331121>

Brief Description: NIST is soliciting applications for financial assistance for Fiscal Year 2021 (FY21) within the following NIST grant programs:

- (1) the Associate Director for Innovation and Industry Services (ADIIS);
- (2) the Associate Director for Laboratory Programs (ADLP);
- (3) the Communications Technology Laboratory (CTL);
- (4) the Engineering Laboratory (EL);
- (5) Fire Research (FR);
- (6) the Information Technology Laboratory (ITL);
- (7) the International and Academic Affairs Office (IAAO);
- (8) the Material Measurement Laboratory (MML);
- (9) the NIST Center for Neutron Research (NCNR);
- (10) the Physical Measurement Laboratory (PML);
- (11) the Special Programs Office (SPO); and
- (12) the Standards Coordination Office (SCO).

Awards: Various; Grants or cooperative agreements

Letter of Intent: Contact the program director.

Proposal Deadline: Applications will be accepted and considered on a rolling basis as they are received.

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

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: Applications can be submitted on a rolling basis starting from the publication date of this Broad Agency Announcement up to 11:59:59 p.m., Eastern Daylight Time on September 30, 2023.

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

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[EPA](#)

Grant Program: Early Career: Measurement and Monitoring Methods for Air Toxics and Contaminants of Emerging Concern in the Atmosphere

Agency: Environmental Protection Agency EPA-G2021-STAR-C2

Website: <https://www.grants.gov/web/grants/view-opportunity.html?oppId=332406>

Brief Description: The U.S. Environmental Protection Agency (EPA), as part of its Science to Achieve Results (STAR) program, is seeking applications proposing research to advance air measurement and monitoring methods for air toxics and contaminants of emerging concern in the atmosphere. Specifically, this RFA seeks research that will provide: 1. advancements in measurement techniques for real time, continuous measurements of concentrations with minimum detection limits below background concentrations or health risk-based thresholds; and 2. advancements in stationary or mobile near source measurement methods for quantifying emission rates of fugitive emissions.

Award: Grant or cooperative agreement up to \$800,000. Anticipated Funding Amount: Approximately \$2.4 million total for all awards

Submission Deadline: Solicitation Closing Date: June 2, 2021, 11:59:59 pm Eastern Time

Contact: Technical Contact: Serena Chung; phone: 202-564-6069; email: chung.serena@epa.gov

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[Department of Energy](#)

Grant Program: Quantum Horizons: QIS Research and Innovation for Nuclear Science

Agency: Department of Energy - Office of Science DE-FOA-0002514

Website: <https://www.grants.gov/web/grants/view-opportunity.html?oppId=333320>

Brief Description: The DOE SC program in Nuclear Physics (NP) hereby announces its interest in receiving interdisciplinary applications for open scientific research on Quantum Computing (QC) and Quantum Information Science and Technology (QIST) with a clear line of sight to enable discoveries to explore and understand all forms of nuclear matter, including some that no longer exist. From the hot dense soup of quarks and gluons in the first microseconds after the Big Bang, through the formation of protons and neutrons beginning the evolution of the chemical elements, to the awesome power of supernovae, the physics of nuclei is fundamental to our understanding of the universe.

Quantum Horizons: QIS Research and Innovation for Nuclear Science is a new initiative to identify, prioritize, and coordinate emerging opportunities in both fundamental research and use-inspired challenges at the interface of NP and QIST. NP's Quantum Horizons program emphasizes the science-first approach and is informed by the results of NP community research workshops "Opportunities for Nuclear Physics & Quantum Information Science" [3] and "Quantum Computing for Theoretical Nuclear Physics" [4] and the "National Strategic Overview for Quantum Information Science" [5], the Interagency Working Group on Quantum Information Science [6] and the Nuclear Physics and Quantum Information Science report by the Nuclear Science Advisory Committee (NSAC).

Awards: It is anticipated that approximately \$10,000,000 may be available over the entire period for all awards made under this FOA, subject to availability of funds. Within this amount, up to \$5,000,000 may be available in FY 2021 to support awards under this FOA.

Letter of Intent: Submission Deadline for Letters of Intent: May 21, 2021, at 5:00 PM Eastern Time A Letter of Intent is encouraged Letter of Intent Response Date May 26, 2021, at 5:00 PM Eastern Time

Submission Deadline: Submission Deadline for Applications: June 18, 2021, at 5:00 PM Eastern Time

Contact: Dr. Gulshan Rai Program Manager 301-903-4702; gulshan.rai@science.doe.gov

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

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

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

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

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

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

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

Letter of Intent: Not Required

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

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

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[NASA](#)

Grant Program: Early Stage Innovations (ESI)

Agency: NASA 80HQTR21NOA01-21ESI-B2

Website: <https://nspires.nasaprs.com/external/solicitations/summary.do?solId=%7BC6DCCA8A-494B-FBE5-8503-8A969034C818%7D&path=&method=init>

Brief Description: This Appendix seeks proposals on specific space technologies that are currently at low Technology Readiness Levels (TRL). Investment in innovative low-TRL research increases knowledge and capabilities in response to new questions and requirements, stimulates innovation, and allows more creative solutions to problems constrained by schedule and budget. Moreover, it is investment in fundamental research activities that has historically benefited the Nation on a broader basis, generating new industries and spin-off applications.

This Appendix seeks proposals to develop unique, disruptive, or transformational space technologies that have the potential to lead to dramatic improvements at the system level — performance, weight, cost, reliability, operational simplicity, or other figures of merit associated with space flight hardware or missions. The projected impact at the system level must be substantial and clearly identified. Although system-level demonstrations are likely not possible or expected under an ESI award, meaningful TRL advancement is required. This Appendix does not seek literature searches, survey activities or incremental enhancements to the current state of the art (SOA).

Topic 1 – Advanced Materials for High-Voltage Power Transmission on the Moon

Topic 2 – Development of Quantum Communication Technologies

Topic 4 – Supersonic Retropropulsion Wind Tunnel Data Analysis

Topic 5 – Advanced Heat Rejection Technologies for Space-Flight Radiators

Awards: NASA plans to make approximately 10 awards - across all topics -

Notice of Intent: Notices of Intent Due: May 26, 2021

Proposal Deadline: Proposals Due: June 28, 2021

Contact: Claudia Meyer Space Technology Research Grants Program Executive hq-esi-call@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: Heliophysics Mission Concept Studies

Agency: NASA NNH21ZDA001N-HMCS

Website: <https://nspires.nasaprs.com/external/solicitations/summary.do?solId=%7B39554337-ED9A-7C4F-EC92-DCB9DC510DDE%7D&path=&method=init>

Brief Description: The Heliophysics Mission Concept Studies (HMCS) program will fund six-month-long mission concept studies that are part of community preparation for the next Solar and Space Physics Decadal Survey. These studies will be conducted by the proposal team, using mission design capabilities included in the proposal, and will result in a final mission concept report delivered to NASA. Additionally, NASA will support awardees submitting and briefing the mission concept to the Decadal Survey Committee ("the Committee" see Section 2.2). Should NASA choose to develop a mission that flows from any selected mission concept study, the responsibility for that mission will be assigned by NASA; there is no expectation that the mission concept study team or participating organizations will necessarily participate in the eventual mission development.

Awards: It is expected that there will be approximately \$2.5 M available to support new mission concept studies selected through this program element.

Notice of Intent: Notices of intent are due April 23, 2021

Proposal Deadline: May 28, 2021

Contact: Jared Leisner Heliophysics Division Science Mission Directorate NASA Headquarters Washington, DC 20546-0001 Telephone: (202) 358-2016 Email: jared.s.leisner@nasa.gov

Grant Program: ROSES 2021: Living With a Star Science

Agency: NASA NNH21ZDA001N-LWS

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

Brief Description: The Living With a Star (LWS) Program emphasizes the science necessary to understand those aspects of the Sun and Earth's space environment that affect life and society. The ultimate goal of the LWS Program is to provide a scientific understanding of the system that leads to predictive capability of the space environment conditions at Earth, other planetary systems, and in the interplanetary medium. Every year the LWS Program solicits Focused Science Topics (FSTs) that address some part of this goal.

This goal poses two great challenges for the LWS program. First, the program seeks to address large-scale problems that cross discipline and technique boundaries (e.g., data analysis, theory, modeling, etc.); and second, the program will identify how this new understanding has a direct impact on life and society. Over time, the Targeted Investigations have provided advances in scientific understanding that address these challenges.

Awards: TBD

Notice of Intent: Please see below

Proposal Deadline: Step-1 proposals are due September 8, 2021, and Step-2 proposals are due 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

Grant Program: New (Early Career) Investigator Program in Earth Science: not solicited in ROSES-21

Agency: NASA NNH21ZDA001N-NIP

Website: <https://nspires.nasaprs.com/external/solicitations/summary.do?sollId=%7BC31820ED-A589-B008-7448-1014FCA16C49%7D&path=&method=init>

Brief Description: The New (Early Career) Investigator Program in Earth science is designed to support outstanding scientific research and career development of scientists and engineers at the early stage of their professional careers. The program welcomes innovative research initiatives and seeks to cultivate diverse scientific leadership in Earth system science. The Earth Science Division (ESD) places particular emphasis on the investigators' ability to promote and increase the use of space-based remote sensing through the proposed research. Proposals with objectives connected to needs identified in most recent Decadal Survey Thriving on our Changing Planet: A Decadal Strategy for Earth Observation from Space are welcomed. The program supports all aspects of scientific and technological research aimed to advance NASA's mission in Earth system science (See the Science Plan at <http://science.nasa.gov/about-us/science-strategy/>). In research and analysis, the focus areas are: • Carbon Cycle and Ecosystems, • Climate Variability and Change, • Water and Energy Cycle, • Atmospheric Composition, • Weather, and • Earth Surface and Interior

Awards: TBD

Notice of Intent: Please see below

Proposal Deadline: This program is NOT soliciting proposals this year. The 'close date' of 02/14/2022 advertised above is not a proposal due date; NSPIRES requires that a specific close date be given. Please see the program element document above for details.

Contact: Allison Leidner Earth Science Division Science Mission Directorate NASA Headquarters Washington, DC 20546-0001 Telephone: 202-358-0855 Email: Allison.K.Leidner@nasa.gov

Grant Program: Earth Science Applications: Health and Air Quality

Agency: NASA NNH21ZDA001N-HAQ

Website: <https://nspires.nasaprs.com/external/solicitations/summary.do?sollId=%7B78D66990-C241-F2F9-5A15-BC02AD87C40D%7D&path=&method=init>

Brief Description: The ESD Applied Sciences Program promotes efforts to discover and demonstrate innovative and practical uses of Earth observations. The Program funds applied science research and applications projects to enable near-term uses of Earth observations, formulate new applications, integrate Earth observations and related products in practitioners' decision-making, and transition the applications. The projects are carried out in partnership with public- and private-sector organizations to achieve sustained use and sustained benefits from the Earth observations. For more information visit the Applied Sciences Program website at <http://AppliedSciences.NASA.gov/>. The Program supports projects that develop and demonstrate improvements to decision-making from the use of an array of Earth observations and related products. The Program considers that Earth observations broadly include a range of products and capabilities, including Earth-observing satellite measurements (NASA in-orbit and planned satellites, as well as foreign, commercial, and other U.S. Government satellites), outputs and predictive capabilities

from Earth science models, algorithms, visualizations, knowledge about the Earth system, and other geospatial products. Hereinafter, this set is referred to collectively as "Earth observations".

Awards: \$3M total per year; Expected Range of Award per project: \$250-350K per year

Notice of Intent: Please see below

Proposal Deadline: June 18, 2021

Contact: John Haynes Applied Sciences Program Earth Science Division Science Mission Directorate
NASA Headquarters Washington, DC 20546-0001 Telephone: (202) 358-4665 Email:

jhaynes@nasa.gov

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National Endowment of Humanities

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

Grant Program: Digital Projects for the Public

Agency: National Endowment for the Humanities 20210609-MD-MN-MT

Website: <https://www.neh.gov/grants/public/digital-projects-the-public>

Brief Description: The Digital Projects for the Public program supports projects that interpret and analyze humanities content in primarily digital platforms and formats, such as websites, mobile applications and tours, interactive touch screens and kiosks, games, and virtual environments. All projects should demonstrate the potential to attract a broad, general, nonspecialist audience, either online or in person at venues such as museums, libraries, or other cultural institutions. Applicants may also choose to identify particular communities and groups, including students, to whom a project may have particular appeal. A recorded webinar for prospective applicants will be posted on this page by April 16, 2021.

Award: Maximum award amount \$30,000 (Discovery grants); \$100,000 (Prototyping grants); \$400,000 (Production grants)

Proposal Deadline: Optional Draft due May 5, 2021; Application due June 9, 2021

Contact: Contact the Division of Public Programs Team; 202-606-8269; publicpgms@neh.gov

Grant Program: Humanities Initiatives

Agency: National Endowment for the Humanities 20210520-AA-AB-AC-AD-AE

Website: <https://www.neh.gov/grants/preservation/research-and-development>

Brief Description: The National Endowment for the Humanities (NEH) Division of Education Programs is accepting applications for the five Humanities Initiatives programs: Humanities Initiatives at Colleges and Universities, Humanities Initiatives at Hispanic-Serving Institutions, Humanities Initiatives at Historically Black Colleges and Universities, Humanities Initiatives at Tribal Colleges and Universities, and Humanities Initiatives at Community Colleges. The purpose of these programs is to strengthen the teaching and study of the humanities at institutions of higher education by developing new humanities programs, resources (including those in digital format), or courses, or by enhancing existing ones.

Award: Maximum award amount: \$150,000 per award; Available funding: \$3,000,000

Proposal Deadline: May 21, 2021

Contact: Division of Education Programs National Endowment for the Humanities 400 Seventh Street, SW Washington, DC 20506 202-606-2324 hi@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.
- Innovation in natural gas and other associated technologies
- 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: **How can I add another investigator or my research ambassador to my proposal in order to help on budget preparation and edit proposal details?**

Answer: Select the “Permissions” link from the left hand side of the main proposal screen in any proposal development document. From the Permissions screen you will be able to search for the person you wish to add and grant them a specific level of permission (aggregator, budget creator, viewer). After you select the appropriate person, click “Add” and they will be added to your proposal.

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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