

NJIT Research Newsletter

Issue: ORN-2017-40

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**. The Newsletter is posted on the NJIT Research Website <http://www.njit.edu/research/>.

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Grant Opportunity Alerts

Keywords and Areas Included in the Grant Opportunity Alert Section Below

NSF: Smart and Connected Communities (S&CC); National Robotics Initiative 2.0: Ubiquitous Collaborative Robots (NRI-2.0); Resource Implementations for Data Intensive Research in the Social, Behavioral and Economic Sciences (RIDIR); Training-based Workforce Development for Advanced Cyberinfrastructure (CyberTraining); Innovation Corps - National Innovation Network Teams Program (I-Corps™ Teams); Major Research Instrumentation Program: (MRI), Partnerships for Innovation (PFI); Research Coordination Networks in Undergraduate Biology Education (RCN-UBE); Campus Cyberinfrastructure (CC*)

NIH: Centers of Excellence for Translational Research (CETR) (U19); Research on Autism Spectrum Disorders (R21); NCMRR Early Career Research Award (R03); Ruth L. Kirschstein National Research Service Award (NRSA) Short-Term Institutional Research Training Grant (Parent T35); mHealth Tools for Individuals with Chronic Conditions to Promote Effective Patient-Provider Communication, Adherence to Treatment and Self-Management (R21); NIBIB Trailblazer Award for New and Early Stage Investigators (R21); NIMH Exploratory/Developmental Research Grant (R21); Bioengineering Research Grants (BRG) (R01); Translational Neural Devices (U44)

Department of Defense/US Army/DARPA/ONR: FY18 FOA for the Office of Naval Research (ONR) Navy and Marine Corps Science, Technology, Engineering & Mathematics (STEM), Education and Workforce Program; Research Interests at AFOSR

Department of Energy: Solar Desalination; State Energy Program 2017 Competitive Awards

NASA: Theoretical and Computational Astrophysics Networks

National Endowment of Humanities: Digital Humanities Advancement Grants

Elsa U. Pardee Foundation: Theoretical and Computational Astrophysics Networks

Klingenstein-Simons Neuroscience Fellowships: Fellowship Awards in the Neurosciences

Musculoskeletal Transplant Foundation: Extramural Research Grants

JDRF and the Helmsley Charitable Trust: Diabetes Innovation Challenge

Streamlyne Update: New How-to-do Videos

Internal Competition: National Science Foundation

NSF Limited Submission and Internal Competition Through College/School Deans

Grant Program: Partnerships for Innovation (PFI)

Agency: National Science Foundation NSF 18-511

RFP Website: <https://www.nsf.gov/pubs/2018/nsf18511/nsf18511.htm>

Brief Description: The NSF Partnerships for Innovation (PFI) Program within the Division of Industrial Innovation and Partnerships (IIP) offers researchers the opportunity to transform new knowledge into societal benefits through translational research and technology development efforts which catalyze partnerships to accelerate innovations that address significant societal needs.

PFI has six broad goals: (1) identifying and supporting Foundation-sponsored research and technologies that have the potential for accelerated commercialization; (2) supporting prior or current Foundation-sponsored researchers, institutions of higher education, and non-profit organizations that partner with an institution of higher education to undertake proof-of-concept work, including the development of technology prototypes that are derived from NSF-funded research and have potential market value; (3) promoting sustainable partnerships between Foundation-funded institutions, industry, and other organizations within academia and the private sector with the purpose of accelerating the transfer of technology; (4) developing multi-disciplinary innovation ecosystems which involve and are responsive to the specific needs of academia and industry; (5) catalyzing professional development activities, mentoring, and best practices in entrepreneurship and technology translation for faculty, students and researchers; and (6) expanding the participation of women and individuals from underrepresented groups in innovation, technology translation, and entrepreneurship.

This solicitation offers two broad tracks for proposals in pursuit of the six aforementioned goals.

The **Technology Translation (PFI-TT) track** offers an NSF-funded researcher the opportunity to advance his or her prior NSF-funded research results towards developing technological innovations with promising commercial potential and societal impact. Projects are supported to demonstrate proof-of-concept, prototype, or technology development and scale-up while exposing faculty and students (and engaging them in) in innovation and entrepreneurially-focused activities that could possibly lead to partnership opportunities, the creation of new intellectual property and technologically-driven commercialization outcomes that address societal needs. Potential pathways forward within the PFI-TT track could be broader collaborative activities and partnerships, technology licensing, technology spin-outs, and expanded entrepreneurial activity.

The **Research Partnerships (PFI-RP) track** provides an opportunity to support technology development activities through a multi-organization collaboration. NSF recognizes that interdisciplinary collaboration is often needed to achieve successful technology development. This proposal track supports a research consortium ecosystem focused on a clear project thrust. It allows for partnerships between academic researchers and a variety of third-party organizations (such as industry, non-academic research organizations, federal laboratories, public or non-profit technology transfer organizations, and/or other universities) to conduct applied research in highly collaborative, multidisciplinary teams, on problems typically beyond the reach of a single researcher. NSF currently supports numerous research consortia (e.g., Engineering Research Centers, Industry-University Cooperative Research Centers, Science and Technology Centers, Nanoscale Science and Engineering Centers, Materials Research Science and Engineering Centers, Centers for Chemical Innovation, and others). Such consortia could participate in PFI-RP

proposals. The goal of the RP track is to catalyze robust and synergistic partnerships and collaborations between government, academia, and other public and private entities to drive and accelerate the translation of federally-funded fundamental research results into innovations that, through technology development and commercialization, will have a significant economic and societal impact.

WEBINARS: Webinars will be held to answer questions about the solicitation. Registration will be available on the NSF Division of Industrial Innovation and Partnerships website (<https://www.nsf.gov/div/index.jsp?div=IIP>). Potential proposers and their partners are encouraged to attend.

Awards: Standard Grants; **Anticipated Funding Amount:** \$16,750,000

Letter of Intent: Not Required

Submission Deadline: February 01, 2018

Limit on Number of Proposals per Organization: 2. An organization may submit no more than two (2) proposals to this solicitation. This eligibility constraint will be strictly enforced. In the event that an organization exceeds this limit, the first two proposals received will be accepted, and the remainder will be returned without review. An organization will not receive more than one (1) award from this solicitation.

Internal Competition Deadline to College Dean's Office: December 1, 2017: Please submit up to 5 pages pre-proposal to your respective Dean by December 1, 2017 in the following format. College level reviews will be conducted by Deans to forward recommendations for up to 2 proposals to the Office of Research by December 7, 2017. The final selection will be announced by December 10, 2017. The pre-proposal should include title of the project, list of key investigators and collaborators with affiliations, Summary of the project with sections on Intellectual Merit and Broader Impact, budget summary. Please also include NSF style biographical sketch that is not included in the 5-page pre-proposal limit. The pre-proposals will be reviewed using the criterion mentioned in the RFP.

Grant Program: NSF National Science Foundation Research Traineeship (NRT) Program

Agency: National Science Foundation NSF 18-507

RFP Website: <https://www.nsf.gov/pubs/2018/nsf18507/nsf18507.htm>

Brief Description: The NSF Research Traineeship (NRT) program is designed to encourage the development and implementation of bold, new, and potentially transformative models for STEM graduate education training. The NRT program seeks proposals that explore ways for graduate students in research-based master's and doctoral degree programs to develop the skills, knowledge, and competencies needed to pursue a range of STEM careers.

The program is dedicated to effective training of STEM graduate students in high priority interdisciplinary research areas, through the use of a comprehensive traineeship model that is innovative, evidence-based, and aligned with changing workforce and research needs. For FY2018, proposals are requested in any interdisciplinary research theme of national priority, with special emphasis on two high priority areas: (1) Harnessing the Data Revolution (HDR) and (2) Innovations at the Nexus of Food, Energy, and Water Systems (INFEWS). HDR is expected to continue as a priority research area for FY2019 and FY2020 competitions, along with a new priority area to be announced in 2018.

The NRT program addresses workforce development, emphasizing broad participation, and institutional capacity building needs in graduate education. Strategic collaborations with the private sector, non-governmental organizations (NGOs), government agencies, national laboratories, field stations, teaching and learning centers, informal science centers, and academic

partners are encouraged. NRT especially welcomes proposals that will pair well with the efforts of NSF INCLUDES to develop STEM talent from all sectors and groups in our society (https://www.nsf.gov/news/special_reports/nsfincludes/index.jsp). Collaborations are encouraged between NRT proposals and existing NSF INCLUDES projects, provided the collaboration strengthens both projects.

Limited Number of Submission: 2: An eligible organization may participate in two proposals per competition. **Participation includes serving as a lead organization, non-lead organization, or subawardee on any proposal.** Organizations participating solely as evaluators on projects are excluded from this limitation. Proposals that exceed the institutional eligibility limit (beyond the first two submissions based on timestamp) will be returned without review regardless of the institution's role (lead organization, non-lead collaborative, or subawardee) in the returned proposal.

Limit on Number of Proposals per PI or Co-PI: 1: An individual may serve as Lead Principal Investigator (PI) or Co-PI on only one proposal submitted to the NRT program per annual competition. Proposals that exceed the PI/Co-PI eligibility limit (beyond the first submission based on timestamp), will be returned without review regardless of the individual's role (PI or co-PI) in the returned proposal.

Awards Range: Standard Grant; **Anticipated Funding Amount:** \$36,100,000

Letter of Intent: Submission of Letters of Intent is required. Please see the full text of this solicitation for further information.

Submission Deadline:

- **Letter of Intent Due Date(s) (required)** (due by 5 p.m. submitter's local time):

November 27, 2017 - December 06, 2017

November 26, 2018 - December 06, 2018

November 25, 2019 - December 06, 2019

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

February 06, 2018

February 06, 2019

February 06, 2020

Contact: Laura B. Regassa, telephone: (703) 292-2343, email: lregassa@nsf.gov

- Tara L. Smith, telephone: (703) 292-7239, email: tsmith@nsf.gov
- Stephen Mulkey, telephone: (703) 292-8954, email: smulkey@nsf.gov

Internal Competition Deadline to College Dean's Office: November 15, 2017: Please submit a pre-proposal for internal competition in the following format to your Dean. Dens are requested to forward the pre-proposals with their recommendations to the Office of Research for institutional review by November 19, 2017. The pre-proposal should include:

Section 1. Letter of Intent (NSF Format): Submit a one-page LOI through FastLane during the open submission window with the following information:

- The name and departmental affiliation of the Principal Investigator (PI).
- The name(s) and departmental affiliation(s) of the Co-PI(s) and others composing the Core Participants (maximum 10).
- The names(s) of any other (non-lead) participating institutions or organizations. If the sole contribution of the partner is evaluation, then designate as "*Evaluation: institutional or organizational name*"; evaluators are exempt from institutional eligibility limits (see section IV). If there are partnering institutions, then the LOI MUST include the appropriate mandatory statement at the end of the project synopsis (see Project Synopsis below).

- **Project Title:** The title must begin with “NRT-HDR:” or “NRT-INFEWS:” for projects targeting the Harnessing the Data Revolution or Nexus of Food, Energy, and Water Systems research areas, respectively. Titles for projects addressing another interdisciplinary theme of national importance must begin with “NRT:”. Any collaborative project with proposals from multiple institutions should begin with “Collaborative Research:”. For example, a collaborative proposal in INFEWS would have a title beginning “Collaborative Research: NRT-INFEWS:”
- **Project Synopsis** (up to 2500 text characters including required organizational statement): Provide a brief summary of the vision and goals of the proposed training program, including a brief description of the interdisciplinary research theme, the main training elements, the integration of the research and training, and the need for the program. Add the appropriate **required partner organization statement** at the end of the project synopsis. If the project has a partner institution that is not solely an evaluator, then the following text must appear at the end of the project synopsis: *"The participating institutions and organizations have agreed to partner on this NRT project. The NRT-eligible institutions have been informed by the lead organization that serving as a non-lead organization or subawardee on a proposal where the institution appears in the budget will count toward their institutional eligibility limit of two NRT proposals per annual competition."* NRT-eligible institutions are universities and colleges accredited in and having a campus located in the U.S. that award a research-based master’s degree and/or a doctoral degree in a STEM discipline supported by the National Science Foundation. If the project has no NRT-eligible partner institutions or if the only NRT-eligible institution solely has an evaluation role (and has been designated as such, see participating institution instructions above), then the following text is required at the end of the project synopsis: *"There are no NRT-eligible institutions partnering on this project outside of an evaluation role."*
- **Target Disciplines:** List up to 5 primary disciplinary areas contributing to the research focus.

Section 2. Tentative Budget Summary: Please provide itemized budget for the entire duration

Section 3. Biographical Sketch of the PI (NSF Format)

Recent Research Grant and Contract Awards

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

PI: Qing Liu (PI)

Department: Electrical and Computer Engineering

Grant/Contract Project Title: Software Defined Storage for End-to-End Data Transfer

Funding Agency: U.S. Department of Energy (ORNL)

Duration: 04/11/17-09/30/18

PI: Colette Santasieri (PI)

Department: Technology and Business Development

Grant/Contract Project Title: Technical Assistance to Brownfield Communities - US EPA Regions 5, 6, 7, 8

Funding Agency: U.S. Environmental Protection Agency

Duration: 02/20/17-01/31/18

PI: Bin Chen (PI)

Department: Center for Solar Terrestrial Research

Grant/Contract Project Title: Particle Energization in Solar Flares: Combining Observations from a Suite of NASA Missions with the Jansky Very Large Array

Funding Agency: NASA

Duration: 01/01/17-12/31/19

PI: Michael Ehrlich (PI)

Department: Martin Tuchman School of Management

Grant/Contract Project Title: Healthcare Management- Task Order 1

Funding Agency: NJII

Duration: 09/01/17-08/31/18

In the News...

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

The Big Questions in R&D: The Science, Technology, and Innovation exchange is a pilot program of the Basic Research Office, and is the first DoD-wide event of its kind. The program is a reflection of the office's commitment to enhance and broaden awareness of science within and sponsored by the Department. As the BRO director, Dr. Robin Staffin stated, "*These investments [in science and technology] are the cornerstone of our ability to meet future capability needs, and contribute to the technological dominance of our country.*"

By design, STIx is meant to showcase the innovative impacts that DoD's science and technology (S&T) programs have made by providing primary investigators, program managers, and students the platform to share these impacts with broad audiences. At its core, STIx allows the vast DoD investments and contributions to S&T to be illustrated in a way that promotes collaboration and emphasizes learning.

The inaugural STIx event was held in Crystal City, Virginia from 24-25 August 2017. The event consisted of a series of lightning talks based on the theme of "The Big Question". Specifically, the speakers delivered presentations that addressed one or more of the three subtopics:

- The *big question* that my research seeks to answer
- The *big question* that my technology addresses
- The *big question* of identifying, nurturing, recruiting, and/or retaining top STEM talent

More information is posted on the website <http://basicresearch.defense.gov/events/STIx/>

Research Data Sharing: The Association of American Universities and Association of Public and Land-grant Universities have jointly [issued a report](#) that "details steps federal agencies can take to facilitate public access to research data in a viable and sustainable manner that advances science in

the public interest while minimizing the administrative burden on agencies, universities, and researchers." In this era of open scholarship, greater access to research findings and data, especially when grounded in the FAIR principles (findable, accessible, interoperable, reusable), has proven to be an important way to accelerate scientific progress and advance innovation to better serve the public good. Although there is general agreement about the value of increased public access to data, ensuring such expanded access will require a significant culture shift at universities and among their faculty, thoughtful and carefully crafted new government policies and practices, and investment in the infrastructure required to make data publicly accessible. For more information on the recommendation process, please visit <https://www.aau.edu/sites/default/files/AAU-Files/Key-Issues/Intellectual-Property/Public-Open-Access/AAU-APLU-Public-Access-Working-Group-Report.pdf>

Engineering For Civil Infrastructure: NSF's ECI program "represents a new and integrated vision for fundamental research to underpin transformative innovations for the built environment that are resilient, economical, and adaptable to enhance national prosperity and societal benefits. In support of this vision, the ECI program replaces CMMI's Engineering for Natural Hazard (ENH), Geotechnical Engineering and Materials (GEM), and Structural and Architectural Engineering and Materials (SAEM) programs. ECI will also support research in construction engineering that is compatible with this vision." [Register for a Dec. 6 webinar.](#)

BRAIN Data Crunch: A solicitation from the National Institutes of Health seeks "new theories, computational models, and statistical tools to derive understanding of brain function from complex neuroscience data. Proposed tools could include the creation of new theories, ideas, and conceptual frameworks to organize/unify data and infer general principles of brain function; new computational models to develop testable hypotheses and design/drive experiments; and new mathematical and statistical methods to support or refute a stated hypothesis about brain function, and/or assist in detecting dynamical features and patterns in complex brain data." See other recent funding opportunity on the website <https://grants.nih.gov/grants/guide/rfa-files/RFA-EB-17-005.html>

GM Announces Autonomous Vehicle Plans, Will Have Fully Autonomous Robo-Taxis In US Cities In 2019: GM unveiled its vision for autonomous vehicles Thursday, telling investors it was planning to commercially launch fleets of fully autonomous robo-taxis in several dense urban environments in 2019. According to the article, GM is in competition with rivals such as Waymo and Uber, as tech companies and automakers race to gain "first-mover advantage" in the space, where robo-taxi services are seen "as the main use" of most autonomous vehicles. Reuters reports GM President Dan Amann said that the lifetime revenue generation of just a single autonomous vehicle may eventually be in the "several hundred thousands of dollars," far above the current revenue generation GM collects on sales of vehicles today. GM CFO Chuck Stevens further explained that a robo-taxi service could be "potentially bigger than our current core business, with better margins," as the company has "a path to take 40 percent of the cost out of ride services."

Webinar and Events

Event: EPA Grants.gov Workspace Training for Grant Applicants and Recipients

Sponsor: Grants.gov

When: December 4, 2017 from 2:00 PM to 3.30 PM

Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=243664&org=NSF

Brief Description: Beginning January 1, 2018 all grant applicants must use Workspace to submit applications through Grants.gov. EPA's Office of Grants and Debarment is hosting a [Grants.gov-led webinar session](#) that will provide training and a demonstration on Workspace. **No registration is required.** EPA will be recording the sessions for those who cannot attend and will post them on the training website listed below.

See <https://www.epa.gov/grants/epa-grantsgov-workspace-training-grant-applicants-and-recipients> for additional details about the webinar and for the latest information.

How to Register:

You do not need to register. If you wish to attend, just go to the following link a few minutes before the webinar starts: [Grants.gov Workspace Training and Demo](#). There is no call in number – audio will be broadcast through your computer speakers or headphones.

To join the webinar: To join the webinar, copy the URL into your browser or click on it to register <https://nsf.webex.com/nsf/j.php?MTID=mf24de1ad2b0ca73070c5c604f55c8c2a>

- Participant password: IRES2018!a
- Audio only participation is available via phone by dialing toll number 1-415-655-0002 and entering access code/meeting number: 749 241 010
- Note: To view real-time captions, open a separate browser page and go to <http://www.fedrcc.us/fedrcc/> The event confirmation number is 3448979.
- If you need reasonable/accessibility accommodations to participate, please contact us 10 days in advance of the event date for coordination.
- Participants can call Cisco WebEx Technical Support at -866-229-3239 for help with joining WebEx events.

Event: NSF Engineering for Civil Infrastructure Webinar

Sponsor: NSF

When: December 6, 2017 from 2:00 PM to 4.00 PM

Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=243644&org=NSF

Brief Description: This informational webinar will provide an overview presentation and answers to questions on the new National Science Foundation (NSF) program entitled "[Engineering for Civil Infrastructure \(ECI\)](#)," (NSF 17-073Y). The ECI program is a core research program within NSF's Directorate for Engineering, Division of Civil, Mechanical and Manufacturing Innovation (CMMI). The ECI program represents a new and integrated vision for fundamental research to underpin transformative innovations for the built environment that are resilient, economical, and adaptable to enhance national prosperity and societal benefits. In support of this vision, the ECI program replaces CMMI's Engineering for Natural Hazard (ENH), Geotechnical Engineering and Materials (GEM), and Structural and Architectural Engineering and Materials (SAEM) programs. ECI will also support research in construction engineering that is compatible with this vision.

To join the webinar: Registration is required for this webinar; interested participants must [register via WebEx](#). **The registration deadline is November 30, 2017.**

Event: Training-based Workforce Development for Advanced Cyberinfrastructure (CyberTraining) Webinar

Sponsor: NSF

When: December 12, 2017 from 2:00 PM to 3.00 PM

Website: https://www.nsf.gov/events/event_summ.jsp?cntn_id=243886&org=NSF

Brief Description: The overarching goals of this program are to (i) prepare, nurture, and grow the national scientific research workforce for *creating, utilizing, and supporting* advanced cyberinfrastructure (CI) that enables potentially transformative fundamental science and engineering research and contributes to the Nation's overall economic competitiveness and security; (ii) ensure *broad adoption* of CI tools, methods, and resources by the fundamental science and engineering research community to enable new modes of discovery; and (iii) integrate core literacy and discipline-appropriate advanced skills in advanced CI as well as computational and data science and engineering into the Nation's educational *curriculum/instructional material fabric* spanning undergraduate and graduate courses. This webinar will cover the solicitation and submission requirements. It will also cover the additional aspects in the revised solicitation and various directorates' priorities. There will be a question and answer session following the discussion.

To Join the webinar, please register at:

<https://nsf.webex.com/nsf/j.php?RGID=r953b7d14b0ff5a285bbf02914cce1f7b> by midnight

Monday December 11th. After your registration is accepted, you will receive an email with a URL to join the meeting. Please be sure to join a few minutes before the start of the webinar. This system does not establish a voice connection on your computer; instead, your acceptance message will have a toll-free phone number that you will be prompted to call after joining. Please note that this registration is a manual process; therefore, do not expect an immediate acceptance. In the event the number of requests exceeds the capacity, some requests may have to be denied.

Event: 3D Printing's Versatility Enables Medical Innovation

Sponsor: IEEE

When: December 19, 2017 from 1:00 PM to 2.00 PM

Website: <https://spectrum.ieee.org/webinar/3d-printings-versatility-enables-medical-innovation>

Brief Description: View this webinar to learn how 3D printing's versatility has paved the way for medical advancements by Cardiovascular Systems, Inc. (CSI). To help fight the battle against CAD and PAD, CSI works continuously to advance their devices and develop new innovations. Work that relies greatly on a wide scope of 3D printing applications. Hear from Jacob Draxler, Product Development Engineer at CSI, and Michael Gaisford, Director of Marketing – Medical Solutions at Stratasys as they discuss medical applications of Stratasys' PolyJet™ technology.

PRESENTERS:

Jacob Draxler, Product Development Engineer, Cardiovascular Systems, Inc.

Jacob Draxler is a Product Development Engineer with Cardiovascular Systems, Inc. (CSI). In this role, he works within the engineering team to aid development of new products as well as furthering the understanding of the unique mechanism of action that CSI's Orbital Atherectomy Device (OAD) employs for the treatment of both calcific Peripheral (PAD) and Coronary Artery Disease (CAD) through the use of anatomical 3D printed fixtures. He holds a Master's degree in Mechanical Engineering from the University of St. Thomas as well as Bachelor of Science degrees in Biology and Psychology from the University of Georgia.

Michael Gaisford, Director Marketing – Medical Solutions, Stratasys

Michael Gaisford is the Director of Marketing for Stratasys Medical Solutions. In this role, he oversees global marketing programs, collaborations with physicians and hospitals and medical application development. Michael brings over a decade of medical device and pharmaceutical industry experience, including roles in marketing and strategy with Boston Scientific, as a consultant with Health Advances, a boutique healthcare consulting firm, marketing at Genentech

and as a Strategy Associate at CVS/Pharmacy. He holds an M.B.A. from the Tuck School of Business at Dartmouth and a B.S. in Industrial Engineering from Stanford University.

To join the webinar: Register at the above URL

Grant Opportunities

National Science Foundation

Grant Program: Smart and Connected Communities (S&CC)

Agency: National Science Foundation NSF 18-520

RFP Website: <https://www.nsf.gov/pubs/2018/nsf18520/nsf18520.htm>

Brief Description: Communities in the United States (US) and around the world are entering a new era of transformation in which residents and their surrounding environments are increasingly connected through rapidly-changing intelligent technologies. This transformation offers great promise for improved wellbeing and prosperity, but poses significant challenges at the complex intersection of technology and society. The goal of the NSF Smart and Connected Communities (S&CC) program solicitation is to accelerate the creation of the scientific and engineering foundations that will enable smart and connected communities to bring about new levels of economic opportunity and growth, safety and security, health and wellness, and overall quality of life. This goal will be achieved through integrative research projects that pair advances in technological and social dimensions with meaningful community engagement.

For the purposes of this solicitation, communities are defined as having geographically-delineated boundaries—such as towns, cities, counties, neighborhoods, community districts, rural areas, and tribal regions—consisting of various populations, with the structure and ability to engage in meaningful ways with proposed research activities. A “smart and connected community” is, in turn, a community that synergistically integrates intelligent technologies with the natural and built environments, including infrastructure, to improve the social, economic, and environmental well-being of those who live, work, or travel within it.

A proposal for an S&CC Integrative Research Grants must include the following:

- Integrative research that addresses the technological and social dimensions of smart and connected communities;
- Meaningful community engagement that integrates community stakeholders within the project;
- A management plan that summarizes how the project will be managed across disciplines, institutions, and community entities; and
- An evaluation plan for assessing short-, medium-, and long-term impacts of the proposed activities.

S&CC is a cross-directorate program supported by NSF’s Directorates for Computer and Information Science and Engineering (CISE), Education and Human Resources (EHR), Engineering (ENG), Geosciences (GEO), and Social, Behavioral, and Economic Sciences (SBE). Awards may be requested for total budgets ranging from \$750,000 to \$3,000,000 for periods of up to four years.

Awards: Standard Grants; **Anticipated Funding Amount:** \$19,250,000

Letter of Intent: Required; January 30, 2018

Submission Deadline: February 28, 2018

Contacts: David Corman, Program Director, CISE/CNS, telephone: (703) 292-8754, email: dcorman@nsf.gov

- Radhakishan Baheti, Program Director, ENG/ECCS, telephone: (703) 292-8339, email: rbaheti@nsf.gov
 - Cynthia Chen, Program Director, ENG/CMMI, telephone: (703)292-2563, email: qchen@nsf.gov
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Grant Program: National Robotics Initiative 2.0: Ubiquitous Collaborative Robots (NRI-2.0)

Agency: National Science Foundation NSF 18-518

RFP Website: <https://www.nsf.gov/pubs/2018/nsf18518/nsf18518.htm>

Brief Description: The NRI-2.0 program builds upon the original National Robotics Initiative (NRI) program to support fundamental research in the United States that will accelerate the development and use of collaborative robots (co-robots) that work beside or cooperatively with people. The focus of the NRI-2.0 program is on **ubiquity**, which in this context means seamless integration of co-robots to assist humans in every aspect of life.

The program supports four main research thrusts that are envisioned to advance the goal of ubiquitous co-robots: **scalability**, **customizability**, **lowering barriers to entry**, and **societal impact**. Topics addressing **scalability** include how robots can collaborate effectively with multiple humans or other robots; how robots can perceive, plan, act, and learn in uncertain, real-world environments, especially in a distributed fashion; and how to facilitate large-scale, safe, robust and reliable operation of robots in complex environments. **Customizability** includes how to enable co-robots to adapt to specific tasks, environments, or people, with minimal modification to hardware and software; how robots can personalize their interactions with people; and how robots can communicate naturally with humans, both verbally and non-verbally. Topics in **lowering barriers to entry** include development of open-source co-robot hardware and software, as well as widely-accessible testbeds. Topics in **societal impact** include fundamental research to establish and infuse robotics into educational curricula, advance the robotics workforce through education pathways, and explore the social, economic, ethical, and legal implications of our future with ubiquitous collaborative robots. Collaboration between academic, industry, non-profit, and other organizations is encouraged to establish better linkages between fundamental science and engineering and technology development, deployment, and use.

The NRI-2.0 program is supported by multiple agencies of the federal government including the National Science Foundation (NSF), the U.S. Department of Agriculture (USDA), the U.S. Department of Energy (DOE), and the U.S. Department of Defense (DOD). Questions concerning a particular project's focus, direction and relevance to a participating funding organization should be addressed to that agency's point of contact, listed in section VIII of this solicitation.

Awards: Standard Grants; **Anticipated Funding Amount:** \$35,000,000

Foundational projects will range from \$250,000 to \$750,000 in total costs for up to three years. Integrative projects will range from \$500,000 to \$1,500,000 in total costs for up to four years.

Letter of Intent: Not Required

Submission Deadline: February 20, 2018

Contacts: Reid Simmons, CISE/IIS, telephone: (703) 292-4767, email: resimmon@nsf.gov

- Radhakishan Baheti, ENG/ECCS, telephone: (703) 292-8339, email: rbaheti@nsf.gov
 - Jordan M. Berg, ENG/CMMI, telephone: (703) 292-5365, email: jberg@nsf.gov
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Grant Program: Resource Implementations for Data Intensive Research in the Social, Behavioral and Economic Sciences (RIDIR)

Agency: National Science Foundation NSF 18-517

RFP Website: <https://www.nsf.gov/pubs/2018/nsf18517/nsf18517.htm>

Brief Description: As part of NSF's Harnessing the Data Revolution (HDR), the Directorate for Social, Behavioral and Economic Sciences (SBE) seeks to develop user-friendly large-scale next-generation data resources and relevant analytic techniques to advance fundamental research in SBE areas of study. Successful proposals will, within the financial resources provided by the award, construct such databases and/or relevant analytic techniques and produce a finished product that will enable new types of data-intensive research. The databases or techniques should have significant impacts, either across multiple fields or within broad disciplinary areas, by enabling new types of data-intensive research in the SBE sciences.

Awards: Standard Grants; **Anticipated Funding Amount:** \$4,500,000

Letter of Intent: Not Required

Submission Deadline: February 28, 2018

Contacts: John E. Yellen (SBE/BCS), telephone: (703) 292-8759, email: jyellen@nsf.gov

- William Badecker (SBE/BCS), telephone: (703) 292-5069, email: wbadecke@nsf.gov
 - Sara Kiesler (SBE/SES), telephone: (703) 292-8643, email: skiesler@nsf.gov
 - Joseph Whitmeyer (SBE/SES), telephone: (703) 292-7808, email: jwhitmey@nsf.gov
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Grant Program: Training-based Workforce Development for Advanced Cyberinfrastructure (CyberTraining)

Agency: National Science Foundation NSF 18-516

RFP Website: <https://www.nsf.gov/pubs/2018/nsf18516/nsf18516.htm>

Brief Description: The overarching goals of this program are to (i) prepare, nurture, and grow the national scientific research workforce for *creating, utilizing, and supporting* advanced cyberinfrastructure (CI) that enables potentially transformative fundamental science and engineering research and contributes to the Nation's overall economic competitiveness and security; (ii) ensure *broad adoption* of CI tools, methods, and resources by the fundamental science and engineering research community to enable new modes of discovery; and (iii) integrate core literacy and discipline-appropriate advanced skills in advanced CI as well as computational and data science and engineering into the Nation's educational *curriculum/instructional material fabric* spanning undergraduate and graduate courses. For the purpose of this solicitation, advanced CI is broadly defined as the set of resources, tools, and services for advanced computation, data handling, networking, and security that collectively enable potentially transformative fundamental research.

This solicitation calls for developing innovative, scalable training and education programs to address the emerging needs and unresolved bottlenecks in scientific and engineering research workforce development, from the postsecondary level to active researchers. The resultant training and education programs, spanning targeted, multidisciplinary communities, will lead to transformative changes in the state of workforce preparedness for advanced CI-enabled research in the short and long terms. As part of this investment, this solicitation seeks to broaden CI access and adoption by (i) increasing or deepening accessibility of methods and resources of advanced CI and of computational and data science and engineering by a wide range of *scientific disciplines and institutions* with lower levels of CI adoption to date; and (ii) harnessing the capabilities of larger segments of diverse underrepresented groups. Proposals from, and in partnership with, the aforementioned communities are especially encouraged.

Prospective principal investigators (PIs) are ***strongly encouraged*** to engage all relevant stakeholders, to the extent possible within the budget, by forging alliances and forming backbones

for *collective impact*; this is particularly necessary in order to inform forward-looking curriculum/instructional material development for the Nation's science and engineering workforce. At a minimum, each project shall have a board of expert advisors or a network of funded/unfunded collaborators representative of stakeholder communities to periodically scrutinize and help refine the curriculum/instructional material and project methods, and to inform professional associations and non-governmental organizations responsible for curriculum, accreditation, and professional examination.

The CyberTraining program is led by the Office of Advanced Cyberinfrastructure (OAC) in the Directorate for Computer and Information Science and Engineering (CISE) and has participation from several directorates and divisions as described in Section II – Program Description, *Programmatic Areas of Interest*. Not all directorates/divisions are participating at the same level and some have specific research and education priorities. The appropriate contact for the CyberTraining program in any directorate/division is the Cognizant Program Officer (PO) for the respective directorate/division/office/program listed.

All projects must advance CI training and education goals for CI-enabled fundamental research as described in the full text of this solicitation, in addition to addressing specific domain needs. Prospective PIs are ***strongly encouraged*** to contact the Cognizant Program Officers in CISE/OAC ***and*** in the participating directorate/division(s) relevant to the proposal to ascertain whether the focus and budget of the proposed activities are appropriate for this solicitation. Such consultations should be completed at least one month in advance of the submission deadline. PIs should include the names of the Cognizant Program Officers consulted in their Project Summaries as described in Section V.A – Proposal Preparation Instructions. The intent of the CyberTraining program is to stimulate co-funding between OAC and one or more domain directorates/divisions. (For this purpose, divisions of CISE other than OAC are considered "domain divisions.") To ensure relevance to community needs and to facilitate adoption, those proposals of interest to one or more domain divisions ***must*** include at least one PI/co-PI with expertise relevant to the targeted research discipline. All proposals shall include at least one PI/co-PI with expertise relevant to OAC.

Awards: Standard Grants; **Anticipated Funding Amount:** \$3,500,000

Letter of Intent: Not Required

Submission Deadline: February 14, 2018

Contacts: Sushil K. Prasad, CISE/OAC, telephone: (703) 292-5059, email: sprasad@nsf.gov

- Almadena Y. Chtchelkanova, CISE/CCF, telephone: (703) 292-8910, email: achtchel@nsf.gov
- Fen Zhao, CISE/CNS, telephone: (703) 292-7344, email: fzhao@nsf.gov

Grant Program: Innovation Corps - National Innovation Network Teams Program (I-Corps™ Teams)

Agency: National Science Foundation NSF 18-515

RFP Website: <https://www.nsf.gov/pubs/2018/nsf18515/nsf18515.htm>

Brief Description: The National Science Foundation (NSF) seeks to develop and nurture a national innovation ecosystem that builds upon fundamental research to guide the output to facilitate the application of scientific discoveries closer to the development of technologies, products and processes that benefit society.

In order to maintain, strengthen and grow a national innovation ecosystem, NSF has established the Innovation Corps - National Innovation Network Teams Program (I-Corps Teams). The NSF I-Corps Teams Program purpose is to identify NSF-funded researchers who will receive additional

support in the form of entrepreneurial education, mentoring and funding to accelerate innovation that can attract subsequent third-party funding.

The purpose of the NSF I-Corps Teams grant is to give the project team access to resources to help determine the readiness to transition technology developed by previously-funded or currently funded NSF projects. The outcomes of I-Corps Teams projects will be threefold: 1) a clear go /or no go decision regarding viability of products and services, 2) should the decision be to move the effort forward, a transition plan for those projects to move forward, and 3) a definition of a compelling technology demonstration for potential partners.

A webinar will be held monthly to answer questions about this program. Details will be posted on the I-Corps website (see https://www.nsf.gov/news/special_reports/i-corps/program.jsp) as they become available.

Awards: Standard Grants; **Anticipated Funding Amount:** \$12,750,000

Letter of Intent: Not Required

Submission Deadline: Proposals Accepted Anytime

Contacts: Steven Konsek, telephone: (703) 292-7021, email: skonsek@nsf.gov

- Cindy WalkerPeach, telephone: 703 292-8437, email: crwalker@nsf.gov

Grant Program: NSF Major Research Instrumentation Program: (MRI)

Agency: National Science Foundation NSF 18-513

RFP Website: <https://www.nsf.gov/pubs/2018/nsf18513/nsf18513.htm>

Brief Description: The Major Research Instrumentation (MRI) Program serves to increase access to multi-user scientific and engineering instrumentation for research and research training in our Nation's institutions of higher education and not-for-profit scientific/engineering research organizations. An MRI award supports the acquisition or development of a multi-user research instrument that is, in general, too costly and/or not appropriate for support through other NSF programs.

MRI provides support to acquire critical research instrumentation without which advances in fundamental science and engineering research may not otherwise occur. MRI also provides support to develop next-generation research instruments that open new opportunities to advance the frontiers in science and engineering research. Additionally, an MRI award is expected to enhance research training of students who will become the next generation of instrument users, designers and builders.

An MRI proposal may request up to \$4 million for either acquisition or development of a research instrument. Beginning with the FY 2018 competition, each performing organization may submit in revised "Tracks" as defined below, *with no more than two submissions in Track 1 and no more than one submission in Track 2.*

- Track 1: Track 1 MRI proposals are those that request funds from NSF greater than or equal to \$100,000¹ and less than \$1,000,000.
- Track 2: Track 2 MRI proposals are those that request funds from NSF greater than or equal to \$1,000,000 up to and including \$4,000,000.

Consistent with the America COMPETES Act of 2007 (Public Law 110-69), cost sharing of precisely 30% of the total project cost is required for Ph.D.-granting institutions of higher education and for non-degree-granting organizations. Non-Ph.D.-granting institutions of higher education are exempt from the cost-sharing requirement and cannot include it. National Science Board policy prohibits voluntary committed cost sharing.

Please see the solicitation text for organizational definitions used by the MRI program.

The MRI Program especially seeks broad representation of PIs in its award portfolio, including women, underrepresented minorities and persons with disabilities. Since demographic diversity may be greater among early-career researchers the MRI program also encourages proposals with early-career PIs and proposals that benefit early-career researchers.

Limited Number of Submission: Three (3) as described below. Potential PIs are advised to contact their institutional office of research regarding processes used to select proposals for submission.

The MRI program requires that an MRI-eligible organization may, as a performing organization, submit or be included as a significantly funded³ subawardee in no more than three MRI proposals. Beginning with this competition, each performing organization is now limited to a maximum of three proposals in *revised* "Tracks" as defined below, with no more than two submissions in Track 1 and no more than one submission in Track 2. Any MRI proposal may request support for either the acquisition or development of a research instrument. Within their submission limit, NSF strongly encourages organizations to submit proposals for innovative development projects.

Any MRI proposal may request support for either the acquisition or development of a research instrument.

- Track 1: Track 1 MRI proposals are those that request funds from NSF greater than or equal to \$100,000¹ and less than \$1,000,000.
- Track 2: Track 2 MRI proposals are those that request funds from NSF greater than or equal to \$1,000,000 up to and including \$4,000,000.

Note: The 30% cost-sharing requirement applies to only the portion of the total project cost budgeted to non-exempt organizations, including those participating through subawards. When required, cost-sharing must be precisely 30%. Cost sharing is required for Ph.D.-granting institutions of higher education and for non-degree-granting organizations. Non-Ph.D.-granting institutions of higher education are exempt from cost-sharing and cannot provide it. National Science Board policy is that voluntary committed cost sharing is prohibited. See section V.B. for specific information on cost-sharing calculations and the solicitation text for definitions of organizational types used for the MRI program.

Awards Range: \$100,000-\$4 million

Letter of Intent: Not Required

Submission Deadline: January 29, 2018 - February 05, 2018

Internal Competition Deadline to College Dean's Office: November 15, 2017: Please submit up to 5 pages pre-proposal white paper to your respective Dean by November 15, 2017 (extended; please see page 4 of the Newsletter issue ORN-37 for details about the internal submission).

Grant Program: Partnerships for Innovation (PFI)

Agency: National Science Foundation NSF 18-511

RFP Website: <https://www.nsf.gov/pubs/2018/nsf18511/nsf18511.htm>

Brief Description: The NSF Partnerships for Innovation (PFI) Program within the Division of Industrial Innovation and Partnerships (IIP) offers researchers the opportunity to transform new knowledge into societal benefits through translational research and technology development efforts which catalyze partnerships to accelerate innovations that address significant societal needs.

PFI has six broad goals: (1) identifying and supporting Foundation-sponsored research and technologies that have the potential for accelerated commercialization; (2) supporting prior or current Foundation-sponsored researchers, institutions of higher education, and non-profit

organizations that partner with an institution of higher education to undertake proof-of-concept work, including the development of technology prototypes that are derived from NSF-funded research and have potential market value; (3) promoting sustainable partnerships between Foundation-funded institutions, industry, and other organizations within academia and the private sector with the purpose of accelerating the transfer of technology; (4) developing multi-disciplinary innovation ecosystems which involve and are responsive to the specific needs of academia and industry; (5) catalyzing professional development activities, mentoring, and best practices in entrepreneurship and technology translation for faculty, students and researchers; and (6) expanding the participation of women and individuals from underrepresented groups in innovation, technology translation, and entrepreneurship.

This solicitation offers two broad tracks for proposals in pursuit of the six aforementioned goals.

The **Technology Translation (PFI-TT) track** offers an NSF-funded researcher the opportunity to advance his or her prior NSF-funded research results towards developing technological innovations with promising commercial potential and societal impact. Projects are supported to demonstrate proof-of-concept, prototype, or technology development and scale-up while exposing faculty and students (and engaging them in) in innovation and entrepreneurially-focused activities that could possibly lead to partnership opportunities, the creation of new intellectual property and technologically-driven commercialization outcomes that address societal needs. Potential pathways forward within the PFI-TT track could be broader collaborative activities and partnerships, technology licensing, technology spin-outs, and expanded entrepreneurial activity.

The **Research Partnerships (PFI-RP) track** provides an opportunity to support technology development activities through a multi-organization collaboration. NSF recognizes that interdisciplinary collaboration is often needed to achieve successful technology development. This proposal track supports a research consortium ecosystem focused on a clear project thrust. It allows for partnerships between academic researchers and a variety of third-party organizations (such as industry, non-academic research organizations, federal laboratories, public or non-profit technology transfer organizations, and/or other universities) to conduct applied research in highly collaborative, multidisciplinary teams, on problems typically beyond the reach of a single researcher. NSF currently supports numerous research consortia (e.g., Engineering Research Centers, Industry-University Cooperative Research Centers, Science and Technology Centers, Nanoscale Science and Engineering Centers, Materials Research Science and Engineering Centers, Centers for Chemical Innovation, and others). Such consortia could participate in PFI-RP proposals. The goal of the RP track is to catalyze robust and synergistic partnerships and collaborations between government, academia, and other public and private entities to drive and accelerate the translation of federally-funded fundamental research results into innovations that, through technology development and commercialization, will have a significant economic and societal impact.

WEBINARS: Webinars will be held to answer questions about the solicitation. Registration will be available on the NSF Division of Industrial Innovation and Partnerships website (<https://www.nsf.gov/div/index.jsp?div=IIP>). Potential proposers and their partners are encouraged to attend.

Awards: Standard Grants; **Anticipated Funding Amount:** \$16,750,000

Letter of Intent: Not Required

Submission Deadline: February 01, 2018

Limit on Number of Proposals per Organization: 2. An organization may submit no more than two (2) proposals to this solicitation. This eligibility constraint will be strictly enforced. In the event that an organization exceeds this limit, the first two proposals received will be accepted,

and the remainder will be returned without review. An organization will not receive more than one (1) award from this solicitation.

Internal Competition Deadline to College Dean's Office: December 1, 2017: Please submit up to 5 pages pre-proposal to your respective Dean by December 1, 2017 in the following format. College level reviews will be conducted by Deans to forward recommendations for up to 2 proposals to the Office of Research by December 7, 2017. The final selection will be announced by December 10, 2017. The pre-proposal should include title of the project, list of key investigators and collaborators with affiliations, Summary of the project with sections on Intellectual Merit and Broader Impact, budget summary. Please also include NSF style biographical sketch that is not included in the 5-page pre-proposal limit. The pre-proposals will be reviewed using the criterion mentioned in the RFP.

Contacts: Prakash G. Balan, telephone: (703) 292-5341, email: pbalan@nsf.gov

- Jesus V. Soriano, telephone: (703) 292-7795, email: jsoriano@nsf.gov

Grant Program: Research Coordination Networks in Undergraduate Biology Education (RCN-UBE)

Agency: National Science Foundation NSF 18-510

RFP Website: <https://www.nsf.gov/pubs/2018/nsf18510/nsf18510.htm>

Brief Description: The goal of the RCN program is to advance a field or create new directions in research or education by supporting groups of investigators to communicate and coordinate their research, training, and educational activities across disciplinary, organizational, geographic, and international boundaries. The RCN-UBE program originated as a unique RCN track to “catalyze positive changes in biology undergraduate education” ([NSF 08-035](#)) and is now supported by the collaborative efforts of the Directorate for Biological Sciences (BIO) and the Directorate for Education and Human Resources (EHR). It has been responsive to the national movement to revolutionize undergraduate learning and teaching in the biological sciences as described in the “Vision and Change in Undergraduate Biology Education” report. The RCN-UBE program seeks to improve undergraduate biology in different areas by leveraging the power of a collaborative network. The theme or focus of an RCN-UBE proposal can be on any topic likely to advance the goal of enhancing undergraduate biology education. Collectively, the program has contributed to developing and disseminating educational research resources and modules, to forging of new collaborations, and to sharing of best practices and ideas for scalability and sustainability of activities. These efforts have involved a large cadre of faculty, students, and other stakeholders. Proposed networking activities directed to the RCN-UBE program should focus on a theme to give coherence to the collaboration.

In accord with other RCNs, the RCN-UBE provides opportunities to foster new collaborations (including international partnerships), to address interdisciplinary topics, to explore innovative ideas for implementing novel networking strategies, to explore collaborative technologies, and to develop community standards. RCN-UBE awards do not support existing networks or the activities of established collaborations. RCN awards do not support primary research.

Note: Because it addresses undergraduate biology education, the RCN-UBE track is offered in alignment with the NSF-wide undergraduate STEM education initiative, Improving Undergraduate STEM Education (IUSE). More information about IUSE can be found in the Program Description section of this solicitation. Depending on the scope and nature of the project, investigators should consider applying to IUSE or RCN-UBE.

Awards: Standard Grants; **Anticipated Funding Amount:** \$2,500,000

Letter of Intent: Not Required

Submission Deadline: January 30, 2018

Contacts: William J. Hoese, telephone: (703) 292-8638, email: whoese@nsf.gov

- Charles Sullivan, telephone: (703) 292-2260, email: csulliva@nsf.gov
-

Grant Program: Campus Cyberinfrastructure (CC*)

Agency: National Science Foundation NSF 18-508

RFP Website: <https://www.nsf.gov/pubs/2018/nsf18508/nsf18508.htm>

Brief Description: The Campus Cyberinfrastructure (CC*) program invests in coordinated campus-level networking improvements, innovation, integration, and engineering for science applications and distributed research projects. Learning and workforce development (LWD) in cyberinfrastructure is explicitly addressed in the program. Science-driven requirements are the primary motivation for any proposed activity.

CC* awards will be supported in four program areas:

1. Data Driven Networking Infrastructure for the Campus and Researcher awards will be supported at up to \$500,000 total for up to 2 years;
2. Network Design and Implementation for Small Institutions awards will be supported at up to \$750,000 total for up to 2 years;
3. Network Integration and Applied Innovation awards will be supported at up to \$1,000,000 total for up to 2 years; and
4. Network Performance Engineering and Outreach awards will be supported at up to \$3,500,000 total for up to 4 years.

Awards: Standard Grants; **Anticipated Funding Amount:** \$17,000,000

Funding will span the following four areas:

1. Data Driven Networking Infrastructure for the Campus and Researcher awards will be supported at up to \$500,000 total for up to 2 years;
2. Network Design and Implementation for Small Institutions awards will be supported at up to \$750,000 total for up to 2 years;
3. Network Integration and Applied Innovation awards will be supported at up to \$1,000,000 total for up to 2 years; and
4. Network Performance Engineering and Outreach awards will be supported at up to \$3,500,000 total for up to 4 years.

Letter of Intent: Not Required

Submission Deadline: January 30, 2018

Contacts: Kevin Thompson, OAC Program Director, telephone: (703) 292-4220, email: kthompso@nsf.gov

- Anita Nikolich, OAC Program Director, telephone: (703) 292-4551, email: anikolic@nsf.gov
 - Jack Brassil, CNS Program Director, telephone: (703) 292-8950, email: jbrassil@nsf.gov
-

Grant Program: NSF National Science Foundation Research Traineeship (NRT) Program

Agency: National Science Foundation NSF 18-507

RFP Website: <https://www.nsf.gov/pubs/2018/nsf18507/nsf18507.htm>

Brief Description: The NSF Research Traineeship (NRT) program is designed to encourage the development and implementation of bold, new, and potentially transformative models for STEM graduate education training. The NRT program seeks proposals that explore ways for graduate students in research-based master's and doctoral degree programs to develop the skills, knowledge, and competencies needed to pursue a range of STEM careers.

The program is dedicated to effective training of STEM graduate students in high priority interdisciplinary research areas, through the use of a comprehensive traineeship model that is innovative, evidence-based, and aligned with changing workforce and research needs. For FY2018, proposals are requested in any interdisciplinary research theme of national priority, with special emphasis on two high priority areas: (1) Harnessing the Data Revolution (HDR) and (2) Innovations at the Nexus of Food, Energy, and Water Systems (INFEWS). HDR is expected to continue as a priority research area for FY2019 and FY2020 competitions, along with a new priority area to be announced in 2018.

The NRT program addresses workforce development, emphasizing broad participation, and institutional capacity building needs in graduate education. Strategic collaborations with the private sector, non-governmental organizations (NGOs), government agencies, national laboratories, field stations, teaching and learning centers, informal science centers, and academic partners are encouraged. NRT especially welcomes proposals that will pair well with the efforts of NSF INCLUDES to develop STEM talent from all sectors and groups in our society (https://www.nsf.gov/news/special_reports/nsfincludes/index.jsp). Collaborations are encouraged between NRT proposals and existing NSF INCLUDES projects, provided the collaboration strengthens both projects.

Limited Number of Submission: 2: An eligible organization may participate in two proposals per competition. **Participation includes serving as a lead organization, non-lead organization, or subawardee on any proposal.** Organizations participating solely as evaluators on projects are excluded from this limitation. Proposals that exceed the institutional eligibility limit (beyond the first two submissions based on timestamp) will be returned without review regardless of the institution's role (lead organization, non-lead collaborative, or subawardee) in the returned proposal.

Limit on Number of Proposals per PI or Co-PI: 1: An individual may serve as Lead Principal Investigator (PI) or Co-PI on only one proposal submitted to the NRT program per annual competition. Proposals that exceed the PI/Co-PI eligibility limit (beyond the first submission based on timestamp), will be returned without review regardless of the individual's role (PI or co-PI) in the returned proposal.

Awards Range: Standard Grant; **Anticipated Funding Amount:** \$36,100,000

Letter of Intent: Submission of Letters of Intent is required. Please see the full text of this solicitation for further information.

Submission Deadline: Letter of Intent Due Date(s) (required) (due by 5 p.m. submitter's local time): November 27, 2017 - December 06, 2017

- **Full Proposal Deadline(s)** (due by 5 p.m. submitter's local time): February 06, 2018

Contact: Laura B. Regassa, telephone: (703) 292-2343, email: lregassa@nsf.gov

- Tara L. Smith, telephone: (703) 292-7239, email: tsmith@nsf.gov
- Stephen Mulkey, telephone: (703) 292-8954, email: smulkey@nsf.gov

Internal Competition Deadline to College Dean's Office: November 15, 2017: Please see above section for details.

National Institutes of Health

Grant Program: Centers of Excellence for Translational Research (CETR) (U19 Clinical Trial Not Allowed)

Agency: National Institutes of Health RFA-AI-17-042

RFP Website: <https://grants.nih.gov/grants/guide/rfa-files/RFA-AI-17-042.html>

Brief Description: The objective of this FOA is to continue a program of multi-project translational research Centers focused on advancing discovery, preclinical development, production, licensure and/or use of new or improved countermeasures (therapeutics, immunotherapeutics, vaccines, vaccine technologies, and medical diagnostics) or related technologies specific to select NIAID Emerging Infectious Diseases/Pathogens. NIAID encourages Centers focused on development of medical countermeasures that are effective against a variety of pathogens and toxins, technologies that can be widely applied to improve classes of products, and platforms that can reduce the time and cost of creating new products.

Each Center will be organized around a Center-selected theme (Center theme) that addresses development and/or use of a targeted countermeasure or technology. NIAID anticipates considerable variety among Center themes and objectives, which can range from the development of single or multiple countermeasures targeting a specific group of listed pathogens/toxins to the development of new technologies or platforms that target a wide array of pathogens/toxins. Translational activities are anticipated to range from very early discovery-based efforts to late-stage preclinical development with industrial participation. Additionally, each Center will consider and address anticipated regulatory barriers for the targeted countermeasure or technology, particularly for new classes of medical countermeasures for which there are no precedents for FDA approval.

Examples of translational Center themes include, but are not limited to, the following areas:

- New or improved therapeutic(s) against antimicrobial-resistant pathogens.
- Development of a multivalent (e.g. broadly cross-protective or "universal") vaccine.
- Host-targeted interventions as therapeutics.
- Development of broad-spectrum countermeasures against taxonomically-related viruses.
- New or improved vaccine technologies or production platforms.
- Development of a broad-spectrum countermeasure technology.
- Co-development of a new therapeutic and associated diagnostic.

Awards: Application budgets are limited to \$5 million for FY2019 direct costs and need to reflect the actual needs of the proposed project.

Letter of Intent: February 28, 2018

Deadline: March 30, 2018, by 5:00 PM local time of applicant organization. All [types of non-AIDS applications](#) allowed for this funding opportunity announcement are due on this date.

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.

Grant Program: Research on Autism Spectrum Disorders (R21-Clinical Trial Optional)

Agency: National Institutes of Health PA-18-400

[PA-18-401](#), R01 Research Project Grant

[PA-18-399](#), R03 Small Research Grant

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PA-18-400.html>

Brief Description: Autism Spectrum Disorders share a cluster of impairments in social communication, as well as the presence of stereotyped behavior, interests, or activities. These complex disorders are usually of lifelong duration and affect multiple aspects of development, learning, and adaptation at home and in the community, thus representing a pressing public health need. The etiologies of these disorders are not yet understood, but may include a combination of genetic and environmental influences.

Basic research into the pathophysiology of ASD, including research on brain mechanisms and genetics, is of special interest. Also of high priority are clinical and applied investigations that may lead to the development of new treatments and interventions.

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

Letter of Intent: Not Required.

Deadline: [Standard dates](#) apply, by 5:00 PM local time of applicant organization. All [types of non-AIDS applications](#) allowed for this funding opportunity announcement are due on these dates.

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.

Grant Program: NCMRR Early Career Research Award (R03 Clinical Trial Optional)

Agency: National Institutes of Health PA-18-211

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-18-211.html>

Brief Description: The NCMRR Early Career Research (ECR) Award is different from other NIH R03 programs, including the Parent Announcement. It is restricted to clinical and basic scientists who are in the early stages of their independent career in rehabilitation research. The research should be focused on one or more of the areas within the biomedical and behavioral mission of NCMRR: pathophysiology and management of chronically injured nervous and musculoskeletal systems; repair and recovery of motor and cognitive function; functional plasticity, adaptation, and windows of opportunity for rehabilitation interventions; rehabilitative strategies involving pharmaceutical, stimulation, neuroengineering approaches, exercise, motor training, and behavioral modifications; pediatric rehabilitation; secondary conditions associated with chronic disabilities; improved diagnosis, assessment, and outcome measures; and development of orthotics, prosthetics, and other assistive technologies and devices. The expected outcome from projects funded under this mechanism is the acquisition of necessary preliminary data for a subsequent research project grant (R01) application.

The proposed project may or may not be hypothesis-driven since the goal is to collect the necessary preliminary data sufficient to apply for an R01 grant. The project may aid in the formulation of hypotheses and may be milestone-driven or descriptive in scope. Given that the goal is to collect preliminary data, R03 projects may be less immediately impactful or significant compared to the typical R01. It is not an expectation that this R03 project will likely "move the field forward" at this stage.

Awards: The combined budget for direct costs for the entire project period may not exceed \$200,000. No more than \$100,000 in direct costs may be requested in any sing.

Letter of Intent: Not Required

Deadline: March 30, 2018, March 29, 2019, by 5:00 PM local time of applicant organization. All [types of non-AIDS applications](#) allowed for this funding opportunity announcement are due on these dates.

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

Grant Program: Ruth L. Kirschstein National Research Service Award (NRSA) Short-Term Institutional Research Training Grant (Parent T35)

Agency: National Institutes of Health PA-18-404

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PA-18-404.html>

Brief Description: The objective of the Ruth L. Kirschstein National Research Service Award Short-Term Institutional Research Training Grant (T35) program is to develop and/or enhance research training opportunities for health professional students and for graduate students in the physical or quantitative sciences interested in careers in biomedical, behavioral, and clinical research that are relevant to the NIH mission. The T35 program provides short-term support for a period of at least 8, but no more than 12, weeks in a grant year for full-time training experiences under the supervision of experienced researchers. Trainees are exposed to individuals with active research careers and learn about further research training opportunities and research career options. The training program should be of sufficient depth to enable selected trainees, upon completion of the program, to have a thorough exposure to the principles underlying the conduct of biomedical research. The proposed institutional research training program may complement other ongoing research training and career development programs at the applicant institution, but the proposed program must be clearly distinct from related programs currently receiving Federal support.

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

Letter of Intent: Not Required

Deadline: [Standard dates](#) apply, by 5:00 PM local time of applicant organization. All [types of non-AIDS applications](#) allowed for this funding opportunity announcement are due on these dates.

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.

Grant Program: mHealth Tools for Individuals with Chronic Conditions to Promote Effective Patient-Provider Communication, Adherence to Treatment and Self-Management (R21 Clinical Trial Optional)

Agency: National Institutes of Health PA-18-389

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PA-18-389.html>

Brief Description: The mission of the National Institute of Biomedical Imaging and Bioengineering (NIBIB) is to improve health by leading the development and accelerating the application of biomedical technologies. NIBIB is committed to integrating engineering with the physical and life sciences to advance basic research and medical care. One way that this is achieved is through the support of research and development of new biomedical imaging and bioengineering tools and technologies to improve the prevention, detection, treatment, and monitoring of disease. NIBIB scientific program areas that are appropriate for this funding opportunity can be found at: <http://www.nibib.nih.gov/Research/ProgramAreas>. NIBIB supports research from early stage technology development through first-in-human demonstrations and/or early feasibility clinical studies. NOTE: Under this FOA, NIBIB supports applications proposing early-stage clinical trials through Phase I, first-in-human, safety, feasibility or other small clinical trials that inform early-stage technology development. NIBIB will not support applications proposing Phase II, III, IV or pivotal clinical trials or trials in which the primary outcome is efficacy, effectiveness or a post-market concern. Applicants are strongly encouraged to contact NIBIB Program staff <https://www.nibib.nih.gov/research-funding> for guidance in advance of submitting an application that includes human subjects research to ensure their proposed project is in compliance with new NIH human subjects research and clinical trials policies (supports).

Research Objectives

For NINR this FOA encourages research for individuals with chronic diseases. Research topics of interest are to:

- Develop, test, and compare effective strategies that incorporate mHealth tools to improve patient-provider communications
- Develop, test, and compare mHealth tools for improved adherence to treatment
- Develop, test and compare mHealth tools for effective self-management
- Develop, test, and/or compare technologies that incorporate interventions for adherence and self-management strategies
- Develop, test, and/or compare mHealth technologies or tools in underserved populations

For NIBIB, topics of particular interest are to:

- Develop and test integrated, portable imaging technologies for monitoring health and as part of point-of-care diagnosis and treatment
- Develop and test tools to enhance the visualization and psychophysical understanding of complicated health information on mobile devices with the local cultural context
- Develop and test decision support systems to provide guidance and a framework for shared decision-making with medical professionals based on best available evidence
- Develop and test networked, citizen-driven approaches to engaging and retaining people in improving their health
- Develop technology that incorporates telemetry and remote access in the acquisition, analysis and monitoring of biomedical data
- Develop software and hardware tools for telehealth technology and studies that have broad applications or are in specific focus areas.

The evolution and vitality of the biomedical sciences require a constant infusion of new ideas, techniques, and points of view. These may differ substantially from current thinking or practice and may not yet be supported by substantial preliminary data. By using the R21 mechanism, the NIH seeks to foster the introduction of novel scientific ideas, model systems, tools, agents, targets, and technologies that have the potential to substantially advance biomedical research.

Awards: Direct costs are limited to \$275,000 over a two-year period, with no more than \$200,000 in direct costs allowed in any single year.

Letter of Intent: Not Required

Deadline: [Standard dates](#) apply, by 5:00 PM local time of applicant organization. All [types of non-AIDS applications](#) allowed for this funding opportunity announcement are due on these dates.

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.

Grant Program: NIBIB Trailblazer Award for New and Early Stage Investigators (R21 Clinical Trial Optional)

Agency: National Institutes of Health PA-18-207

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PA-18-350.html>

Brief Description: The rapid evolution and vitality of the biomedical sciences benefits from the contributions and creativity of investigators in the early stages of their careers, and a continuous infusion of new ideas, techniques, and perspectives from other fields. This Trailblazer Award is an opportunity for New and Early Stage Investigators to pursue research programs of high interest to the NIBIB at the interface of engineering and/or the physical sciences with the life and/or

behavioral sciences. This Funding Opportunity Announcement (FOA) employs an R21 Exploratory/Developmental Research Grant mechanism enhanced to provide \$400,000 in direct costs over three years, allowing sufficient time and resources to pursue a new or emerging research program. With the goal of increasing the diversity of the NIBIB-supported research community, NIBIB encourages applications from investigators that are underrepresented in the biomedical, behavioral or clinical research workforce (see data at <http://www.nsf.gov/statistics/showpub.cfm?TopID=2&SubID=27> and the most recent report on [Women, Minorities, and Persons with Disabilities in Science and Engineering](#)). Such individuals include women, those from underrepresented racial and ethnic groups, those with disabilities, and those from disadvantaged backgrounds. All applicants to this FOA must meet the NIH definition of New or Early Stage Investigator (https://grants.nih.gov/policy/new_investigators/index.htm).

The application of principles and techniques from engineering and the quantitative sciences such as physics, mathematics, chemistry and computer sciences is providing innovative technologies and novel methods to accelerate the pace of biomedical research, producing new understanding of disease mechanisms and translating these new discoveries to improve human health. The Trailblazer Award seeks to catalyze the development of transdisciplinary research approaches with the potential to open new areas of biomedical investigation. A Trailblazer project may be exploratory, developmental, proof of concept or have high risk-high impact goals. Importantly, the proposed research for this FOA may be technology design-directed and may or may not be hypothesis-driven. In the context of this FOA, innovation encompasses approaches to address well-defined, unmet biomedical research needs through the development of new methods, ideas, or technologies; early steps along the path toward delivery of a new capability or method; and the integration of existing components in a previously unproven format. High-impact projects will have the potential to transform our understanding or practice by applying an innovative approach to an appropriate biomedical challenge to generate informative and impactful data or craft a solution to a significant problem. For projects supported by a Trailblazer Award, successful results should provide a solid foundation for further research under other funding mechanisms, such as the R01. All areas of research important to the mission of the NIBIB are appropriate for the Trailblazer FOA (<https://www.nibib.nih.gov/research-funding>).

Awards: Application budgets may not exceed \$400,000 direct costs over a maximum three-year funding period. No more than \$200,000 may be requested in any single year.

Letter of Intent: Not Required

Deadline: [Standard dates](#) apply, by 5:00 PM local time of applicant organization. All [types of non-AIDS applications](#) allowed for this funding opportunity announcement are due on these dates.

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.

Grant Program: NIMH Exploratory/Developmental Research Grant (R21 Clinical Trial Not Allowed)

Agency: National Institutes of Health PA-18-350

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PA-18-350.html>

Brief Description: The NIMH Exploratory/Developmental Grant program supports exploratory and high-risk research projects that fall within the NIMH mission by providing support for the early and conceptual stages of these projects. These studies may involve considerable risk but may lead to a breakthrough or the development of novel techniques, agents, methods, measures, models, strategies, or to the generation of pilot or feasibility data. The preliminary work from

these studies could lead to a major impact on biomedical, behavioral, or clinical mental health research, or on the delivery of mental health care. The evolution and vitality of the biomedical, behavioral, clinical and implementation sciences require a constant infusion of new ideas, techniques, and perspectives. These may differ substantially from current thinking or practice and may not yet be supported by substantial preliminary data.

Areas of scientific emphasis for this FOA reflect areas of priority as detailed in the [NIMH Strategic Plan](#) and the [NIMH Strategic Research Priorities](#).

Specific research priorities are listed as follows.

[Division of Neuroscience and Basic Behavioral Science \(DNBBS\)](#): Supports research programs in basic neuroscience, genetics, resource and technology development, and drug discovery.

DNBBS high priority research areas include but are not limited to the following topics:

- Discover novel mechanisms of nervous system development (across genes, proteins, cells and circuitry) and signaling properties that underlie the emergence of cognition, emotion, and social behavior.
- Develop and use innovative strategies, including genome-wide and comparative approaches, to discover genes and gene regulatory mechanisms underlying brain function, cognition, emotion, and social behavior.
- Develop and apply innovative biological, biophysical or cell-based assays for interrogating novel biological targets or processes relevant to mental disorders.
- Discover cellular and molecular mechanisms whereby hormones and immune molecules modulate signaling in brain circuits relevant to emotion regulation, cognition, and social behavior.
- Identify novel therapeutic targets, ligands to modify targets, and neuroimaging tools to advance innovative treatment development for mental illnesses.
- Develop innovative preclinical assays and neurobiological measures of fundamental processes relevant to emotional and cognitive disorders.
- Develop new and use existing physiological and computational models to understand the biological functions of genes, gene products, cells, and brain circuits in health and atypical mental function.
- Develop and empirically evaluate computational and theoretical models that address plasticity of brain circuits during development impacting cognitive, affective, and social behaviors.
- Extend analyses of key determinants of cognitive, affective, and social processes across levels of analysis between genomic, molecular, cellular, circuits to behavior.
- Apply biologically-grounded theory- and data-driven computational models to understand the functions of genes, gene products, cells, and brain circuits in mental functions and complex behaviors.
- Identify, at a genome-wide level, genetic variants that increase risk for mental disorders and related traits in diverse populations from the US and around the world.
- Develop integrative and comparative approaches for understanding the biology of molecular and cellular networks implicated in mental disorders by genome-scale human genetics.
- Identify biological markers (e.g., genetic, proteomic, imaging) in experimental (model) systems and in humans that could be further validated as methods for diagnosing and/or detecting risk/vulnerability, onset, progress, and/or severity of mental disorders.

Awards: Direct costs are limited to \$275,000 over a two-year period, with no more than \$200,000 in direct costs allowed in any single year.

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

Deadline: [Standard dates](#) apply, by 5:00 PM local time of applicant organization. All [types of non-AIDS applications](#) allowed for this funding opportunity announcement are due on these dates.

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.

Grant Program: Bioengineering Research Grants (BRG) (R01 Clinical Trial Optional)

Agency: National Institutes of Health PAR-18-206

RFP Website: <https://grants.nih.gov/grants/guide/pa-files/PAR-18-206.html>

Brief Description: Many major biomedical research problems are best addressed with a multidisciplinary approach that bridges the life and physical sciences. Principles and techniques in quantitative sciences such as physics, mathematics, chemistry, computer sciences, and engineering are increasingly applied to good effect in biomedical research. Bioengineering approaches integrate principles from diverse technical and biomedical fields, and the resulting multi-disciplinary research provides new understanding, innovative technologies, and new products that improve basic knowledge, human health, and quality of life. This FOA seeks to encourage collaborations of quantitative and physical scientists with biomedical researchers to catalyze the development of innovative bioengineering approaches to the solution of important problems in biomedical research, clinical investigations, and medical practice.

Significant projects may include, but are not limited to: validation and translation of promising tools for prevention, monitoring or intervention; development of quantitative, predictive models of complex biological systems; integration and optimization of technologies that significantly increase sensitivity, specificity, positive predictive value, negative predictive value, efficiency, or throughput of measurements to address unsolved biological or medical questions; or engineering and testing of delivery systems, tissues, therapeutics, implants, and prosthetics that may improve treatment and healthcare.

Innovation in this biomedical engineering FOA has a broad definition that includes development of new methods, ideas, or tools, integration of existing components into new combinations that deliver greater capabilities, new efficiencies, and/or greater effects. Overall impact of these advances may include reducing disparities in care, promoting wellness and independent living, increasing access to and utility of technologies to improve quality of life, reducing cost and complexity of procedures, and increasing throughput, sensitivity and specificity of diagnostic tests.

A project should clearly serve the mission of one or more of the NIH Institutes or Centers participating in this FOA. Investigators are encouraged to contact the designated [Scientific/Research contacts](#) for individual institute focus areas that will be supported. Applicants who seek to establish proof-of-concept are encouraged to respond to the Exploratory Bioengineering Research Grant (EBRG) FOA [<https://grants.nih.gov/grants/guide/pa-files/PA-1-286.html>]. Large team projects with a specific goal that can be addressed in 5-10 years are encouraged to respond to the Bioengineering Research Partnership (BRP) FOA [<https://grants.nih.gov/grants/guide/pa-files/PAR-18-208.html>].

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

Letter of Intent: Not Required

Deadline: [Standard dates](#) apply, by 5:00 PM local time of applicant organization. All [types of non-AIDS applications](#) allowed for this funding opportunity announcement are due on these dates. 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.

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

Agency: National Institutes of Health RFA-NS-18-012

RFP Website: <https://grants.nih.gov/grants/guide/rfa-files/RFA-NS-18-012.html>

Brief Description: This funding opportunity will utilize a Small Business Innovation Research (SBIR) U44 cooperative agreement to support the translation of devices on the verge of clinical trial. The translational device activities, including translational bench/*in vitro*, and small and large animal studies to support regulatory approval of a small clinical trial, are expected to lead to submission of an Investigational Device Exemption (IDE) to the U.S. Food and Drug Administration (FDA) or Institutional Review Board (IRB) application for a Non-Significant Risk (NSR) study. This cooperative agreement will also support the subsequent small clinical trial (e.g., Early Feasibility Study -

<https://www.fda.gov/downloads/medicaldevices/deviceregulationandguidance/guidancedocuments/ucm279103>, small clinical trial or experience to support a marketing application, or small clinical trial to inform final device design). It is expected the immediate next steps following completion of the small clinical trial supported under this cooperative agreement will be:

- a marketing application if only a small clinical trial or experience is needed to demonstrate the device is safe and effective;
- a larger clinical trial that will lead to a marketing application; or
- device design decisions made based on the information and data collected.

As applicants must have comprehensive supporting data, innovation and impact will in part be judged on presenting a credible path towards U.S. regulatory submission/IRB approval at the end of the SBIR Phase I project period, and on the potential to advance the care of patients by addressing an unmet clinical need.

All projects will be Fast-Track applications and have two phases. SBIR Phase I will support translational device activities leading to submission of an IDE to the FDA, or an IRB application for an NSR study. The duration of SBIR Phase I will depend on the maturity of the project at entry. 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. SBIR Phase II will support a small clinical trial, as described above.

The SBIR U44 cooperative agreement mechanism is milestone-driven and involves significant input from NIH program staff regarding project and milestone planning, monitoring of research progress, and go/no-go decision-making. NIH staff may also provide assistance to academic investigators in familiarizing them with the device development process and the criteria needed to advance therapeutic and diagnostic leads to the clinic. The expectations of the program are in line with those of industry in regards to advancing devices through the developmental pipeline. As such, an inherent risk of attrition is possible within this program.

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: 30 days prior to the receipt date

Deadline: February 21, 2018; June 21, 2018; October 22, 2018; February 21, 2019; June 21, 2019; October 21, 2019; February 21, 2020; June 22, 2020; and October 21, 2020 , by 5:00 PM local time of applicant organization.

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.

Department of Defense/US Army/DARPA/ONR

Grant Program: FY18 Funding Opportunity Announcement (FOA) for the Office of Naval Research (ONR) Navy and Marine Corps Science, Technology, Engineering & Mathematics (STEM), Education and Workforce Program

Agency: Department of the Navy ONR – N00014-18-S-F003

Website: <file:///Users/atamdhawan/Downloads/N00014-18-S-F003.pdf>

Brief Description: The ONR seeks a broad range of applications for augmenting existing or developing innovative solutions that directly maintain, or cultivate a diverse, world-class STEM workforce in order to maintain the U.S. Navy and Marine Corps' technological superiority. The goal of any proposed effort must provide solutions that will establish and maintain pathways of diverse U.S. citizens who are interested in uniformed or civilian DoN (or Navy and Marine Corps) STEM workforce opportunities.

As the capacity of the DoN Science and Technology (S&T) workforce is interconnected with the basic research enterprise and STEM education system, ONR recognizes the need to support efforts that can jointly improve STEM student outcomes and align educational efforts with Naval S&T current and future workforce needs. This announcement explicitly encourages projects that improve the capacity of education systems and communities to create impactful STEM educational experiences for students and workers. Submissions are encouraged to consider including active learning approaches and incorporating 21st century skill development. Projects must aim to increase student and worker engagement in STEM and enhance people with needed Naval STEM capabilities. ONR encourages applications to utilize current STEM educational research for informing project design and advancing our understanding of how and why people choose STEM careers and opportunities of naval relevance. While this announcement is relevant for any stage of the STEM educational system, funding efforts will be targeted primarily toward projects addressing the below communities or any combination of these communities:

- Secondary education communities;
- Post-Secondary communities;
- Informal science communities;
- Current naval STEM workforce communities.

Project scope may range in size and complexity. Projects that are already established with prior funding sources or have established stakeholders are especially encouraged to consider the following scope areas:

- Develop and implement exploratory pilot projects that seek to create new educational experiences within educational and training communities.
- Develop larger cohesive STEM education and training activities that strengthen the capacity of regional communities and stakeholders to improve STEM education and training.
- Establish meetings of stakeholders that must seek to connect relevant people and organizations to explicitly develop broader projects for impacting entire communities.

Awards: Under this STEM FOA competition, ONR intends to award approximately twenty-five (25) awards for an estimated total value of \$6,250,000, subject to the availability of funds. Each individual award will be up to a maximum of \$250,000 per year, with one-year (1) option periods, for up to three (3) years. Option years will be funded incrementally based on applicant

performance and adherence to established execution benchmarks. Applications for larger amounts will be considered on a case-by-case basis.

Proposal Deadline: White Paper Inquiries and Questions 20 July 2018 (Friday) White Papers must be received between 2 April 2018 (Monday) with a deadline of 31 July 2018 (Tuesday) at 5:00 PM Eastern Time Application Inquiries and Questions 18 September 2018 (Tuesday) Applications must be received no later than 28 September 2018 (Friday) at 11:59 PM Eastern Time

Contact Information: Questions about technical nature and/or funding should be submitted to: Dr. Michael Simpson Director of Education and Workforce Office of Naval Research 875 North Randolph Street Arlington VA 22203-1995 Email: onr_stem@navy.mil

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

Agency: Department of Defense AFOSR – BAA-AFRL-AFOSR-2016-0007

Website:

<https://www.fbo.gov/index?s=opportunity&mode=form&id=d8bfeaf2e38a1e4aeb9908190fc2e0f2&tab=core&cvview=1>

Brief Description: AFOSR plans, coordinates, and executes the Air Force Research Laboratory's (AFRL) basic research program in response to technical guidance from AFRL and requirements of the Air Force. Additionally, the office fosters, supports, and conducts research within Air Force, university, and industry laboratories; and ensures transition of research results to support U.S. Air Force needs. The focus of AFOSR is on research areas that offer significant and comprehensive benefits to our national war fighting and peacekeeping capabilities. These areas are organized and managed in two scientific Departments: Engineering and Information Science (RTA) and Physical and Biological Sciences (RTB).

The Air Force Office of Scientific Research, hereafter generally referred to as "we, us, our, or AFOSR," manages the basic research investment for the U.S. Air Force. As a part of the Air Force Research Laboratory (AFRL), our technical experts discover, shape, and champion research within the Air Force Research Laboratory, universities, and industry laboratories to ensure the transition of research results to support U.S. Air Force needs. Using a carefully balanced research portfolio, our research managers seek to foster revolutionary scientific breakthroughs enabling the Air Force and U.S. industry to produce world-class, militarily significant, and commercially valuable products.

To accomplish this task, we solicit proposals for basic research through this general Broad Agency Announcement outlining the U.S. Air Force Defense Research Sciences Program. We invite unclassified proposals that do not contain proprietary information for research in many broad areas. We expect to fund only fundamental research. Our research areas of interest are described in detail in section A. Program Description.

We anticipate many awards in the form of grants, cooperative agreements, or contracts. We reserve the right to select and fund for award all, some, part, or none of the proposals received. There is no guarantee of an award. Please review the entire announcement for full details.

Awards: Funding available: \$80,000,000

Proposal Deadline: This announcement remains open until superseded. We review and evaluate proposals as they are received. You may submit proposals at any time; however, some specific topic instructions may recommend submission by specific dates that align with funding expectations. Funding is limited. We commit the bulk of our funding by the fall of each year.

Contact Information: Daniel Smith Procurement Analyst Phone 703-588-8494
[Business Office Email](#)

Grant Program: DoD Medical Simulation and Information Sciences, Toward A Next-Generation Trauma Care Capability: Foundational Research for Autonomous, Unmanned, and Robotics Development of Medical Technologies (FORWARD) Award

Agency: Department of Defense Dept. of the Army - USAMRAA W81XWH-17-MSISRP-FOR

Website: <http://cdmrp.army.mil/>

Brief Description: The MSISRP FORwARD Award mechanism is being offered for the first time in FY17. This mechanism supports basic research to increase knowledge/understanding through discovery and hypothesis generation, and should focus on providing basic fundamental knowledge that will inform and enable the future development of novel autonomous and/or robotic medical systems to care for wounded soldiers/patients through breakthrough, exploratory research. The objective of the FY17 MSISRP FORwARD Award is focused on addressing the following Topic Areas: 1. Autonomous and Unmanned Medical Capability – Identify novel ideas, approaches and research towards the conceptualization of autonomous and unmanned technologies for next-generation, high-quality medical capabilities with limited or absent medical care personnel, or personnel with limited skills. Research novel concepts, plausible approaches and advanced concept designs using biologically inspired cognitive computing models, machine learning, artificial intelligence, soft robotic semi-autonomous/autonomous resuscitation concepts and advanced applications of information sciences among other innovative, exploratory research towards advancing the state-of-the-art in delivery of forward resuscitative care at the point of injury. 2. Medical Robotics Research – Identify novel ideas, approaches and research towards the conceptualization of medical robotics and real-time tele-presence capabilities exploring the limits of machine perception for tele-robotic semi-autonomous and autonomous trauma care within remote and dispersed geographic settings. This could include exploratory research in semi-autonomous robotic surgery to improve the safety profile and efficacy of tele-surgical procedures and outcomes using hard robotics in challenging situations (e.g., combat casualties on the multi-domain battlefield or mass casualty situations) and remote or austere geographic locations, among other innovative, exploratory research aims and novel concepts.

Awards: Funding available: \$2,600,000

Proposal Deadline: February 05, 2018

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

Department of Energy

Grant Program: Solar Desalination

Agency: Department of Energy [DE-FOA-0001778](#)

Website: <https://eere-exchange.energy.gov/Default.aspx?Search=DE-FOA-0001778&SearchType=>

Brief Description: The U.S. Department of Energy (DOE) seeks to fund applied scientific research that develops novel technologies or concepts using solar thermal energy to assist in the desalination process, which will reduce the levelized cost of water (LCOW) through reducing the levelized cost of heat (LCOH), increasing the energy efficiency for thermal desalination processes, and reducing the overall capital and integration costs for solar thermal desalination. Applications

for thermal desalination include municipality water production, agriculture, industrial processes, and produced waters from the oil and gas industry. This funding opportunity announcement (FOA), intends to support the research, development, and demonstration (RD&D) of technologies that have the potential to integrate solar thermal technologies into desalination processes, develop novel low temperature solar concentrators and storage, consider novel and innovative thermal desalination technologies, or show how solar thermal energy can be implemented into current or upcoming desalination methods. As part of the SunShot Initiative, this applied research and development program is intended to demonstrate new concepts in either solar thermal or thermal desalination technologies, or the combination therein. These developments should lead to subsequent system integration, engineering scale-up, and eventual commercial production for water purification applications.

The eXCHANGE system is currently designed to enforce hard deadlines for Concept Paper and Full Application submissions. The APPLY and SUBMIT buttons automatically disable at the defined submission deadlines. The intention of this design is to consistently enforce a standard deadline for all applicants.

Applicants that experience issues with submissions PRIOR to the FOA Deadline: In the event that an Applicant experiences technical difficulties with a submission, the Applicant should contact the eXCHANGE helpdesk for assistance (exchangehelp@hq.doe.gov). The eXCHANGE helpdesk and/or the EERE eXCHANGE System Administrators will assist the Applicant in resolving all issues.

Applicants that experience issues with submissions that result in a late submission: In the event that an Applicant experiences technical difficulties with a submission that results in a late submission, the Applicant should contact the eXCHANGE helpdesk for assistance (exchangehelp@hq.doe.gov). The eXCHANGE helpdesk and/or EERE eXCHANGE System Administrators will assist the Applicant in resolving all issues (including finalizing the submission on behalf of and with the Applicant's concurrence). DOE will only accept late applications when the Applicant has a) encountered technical difficulties beyond their control; b) has contacted the helpdesk for assistance; and c) has submitted the application through eXCHANGE within 24 hours of the FOA's posted deadline.

Submission Deadline:

- Concept Paper Submission Deadline: 12/4/2017 5:00 PM ET
- Full Application Submission Deadline: 3/16/2018 5:00 PM ET

Contact Information: EERE-ExchangeSupport@Hq.Doe.Gov

Grant Program: FOA: State Energy Program 2017 Competitive Awards

Agency: Department of Energy DE-FOA-0001644

Website: <https://eere-exchange.energy.gov/#Foald039aab9e-c42b-4a8a-bf67-85af26b0f2f6>

Brief Description: Limited to State Energy Offices (defined as the 50 states, the District of Columbia and five territories). The Office of Energy Efficiency and Renewable Energy's (EERE) State Energy Program (SEP) seeks applications to advance policies, programs, and market strategies that advance affordable and reliable energy to promote economic growth and energy security for the nation. This competitive Funding Opportunity Announcement (FOA) allows States (which includes the District of Columbia and five territories) to compete for funding designed to meet SEP's goals to enhance energy security, advance state-led energy initiatives, and maximize the benefits of decreasing energy waste. Specifically, this FOA includes three Areas of Interest: State Energy Planning, Innovative Opportunities for Energy Efficiency and Renewable Energy (EE/RE) Practices, and Technical Assistance to Advance SEP Formula Grant EE/RE Activities.

Submission Deadline: January 11, 2018. Applicants are encouraged to transmit applications well before the deadline. APPLICATIONS RECEIVED AFTER THE DEADLINE WILL NOT BE CONSIDERED FOR AWARD. (Please read the FOA instructions for information on how to apply.)
Contact Information: SEPCompetitive2017@ee.doe.gov

NASA

Grant Program: Theoretical and Computational Astrophysics Networks

Agency: NASA NNH17ZDA001N-TCAN

Website:

<https://nspires.nasaprs.com/external/solicitations/summary.do?solid=%7BA79C092D-3BF3-AE54-DA3A-2E962CA950D7%7D&path=open&method=init>

Brief Description: The New Worlds, New Horizons report of the Astro2010 Decadal Survey observed that key challenges in theoretical astrophysics "are of a scale and complexity that require sustained, multi-institutional collaborations" but that there was "no mechanism to support these coordinated efforts at the needed level in the U.S." To address these issues, the Theoretical and Computational Astrophysics Networks (TCAN) program was established with the following goals: • To support coordinated efforts in fundamental theory and computational techniques in order to make groundbreaking advances in astrophysics; • To strengthen theoretical and computational astrophysics in the U.S. by uniting researchers in collaborative networks that cross institutional and geographical divides; and, • To advance the training of the future workforce of theoretical and computational scientists. In ROSES-2017, NASA solicits proposals for new TCAN networks. The period of performance for TCAN investigations will be three years. The TCAN program will support research networks with three or more nodes at distinct institutions. A network is a combination of nodes and connections. A node is a group of researchers at an existing institution, along with the local resources (e.g., computational, educational, communications) that sustain them. A connection is a significant exchange of expertise or capabilities between nodes (e.g., exchange of personnel, web-based training, sharing of access to resources). Multiple connections between nodes, that enable an integrated and focused collaborative effort, constitute a network.

Awards: \$1M to \$1.5M

Notice of Intent: December 7, 2017

Proposal Deadline: January 25, 2018

Contact: Keith B. MacGregor Astrophysics Division Science Mission Directorate NASA Headquarters Washington, DC 20546-0001 Telephone: (202) 358-2463 Email: keith.b.macgregor@nasa.gov

National Endowment of Humanities

Grant Program: Digital Humanities Advancement Grants

Agency: National Endowment of Humanities

Website: <https://www.neh.gov/grants/odh/digital-humanities-advancement-grants>

Brief Description: Digital Humanities Advancement Grants (DHAG) support digital projects throughout their lifecycles, from early start-up phases through implementation and long-term sustainability. Experimentation, reuse, and extensibility are hallmarks of this grant category, leading to innovative work that can scale to enhance research, teaching, and public programming

in the humanities. This program is offered twice per year. Proposals are welcome for digital initiatives in any area of the humanities.

Through a special partnership, the Institute of Museum and Library Services (IMLS) anticipates providing additional funding to this program to encourage innovative collaborations between museum or library professionals and humanities professionals to advance preservation of, access to, use of, and engagement with digital collections and services. Through this partnership, IMLS and NEH may jointly fund some DHAG projects that involve collaborations with museums and/or libraries.

Awards: Level I awards (from \$10,000 to \$50,000) are small grants designed to fund exploratory sessions, workshops, early alpha-level prototypes, and initial planning. In addition to early planning towards an experimental prototype, Level I proposals can identify a problem or research question, explore a research agenda, or discover appropriate methodologies or technologies for both new projects and projects in need of substantive revision or recovery. Outcomes for Level I projects would likely include reports, position papers, and plans for subsequent steps and future research or development. Level I projects may also fund meetings, workshops, or reports addressing specific topics related to the impact of technology on the humanities. Proposals should include specific plans for broad dissemination of project outcomes.

Level II awards (from \$50,001 to \$100,000) are larger grants that can be used for more fullyformed projects that have completed an initial planning phase. Level II proposals should therefore include a more articulated plan of work leading to concrete and tangible outcomes, such as working prototypes; detailed plans for upgrading existing or defunct projects in need of substantive revision, enhancement, or recovery; test beds; or demonstration projects. Digital Humanities Advancement Grants at both Level I and Level II stages support full-time or part-time activities for periods up to eighteen months.

Level III awards (from \$100,001 to \$325,000 for up to three years) support implementation and scaling-up of already established projects. All projects must already have completed a startup phase prior to application. The earlier phase of the project could have been supported previously by NEH or by another funding source. (Please see the instructions for the narrative component of the application below, in particular beneath the “History of the project” bullet.) Level III projects must submit both data management and sustainability plans, and all projects are expected to fulfill the obligations outlined in these plans.

Proposal Deadline:

Until January 16, 2018: Contact Office of Digital Humanities program officers (at odh@neh.gov) with questions and for advice (optional)

December 5, 2017: Submit draft application by this date (optional)

December 19, 2017: Create or verify your institution’s Entity record at the System for Award Management by this date

January 2, 2018: Register your institution (or verify its registration) with Grants.gov by this date

January 16, 2018: Submit application through Grants.gov by this date

April-May 2018: peer review panels take place

July 2018: meeting of the National Council on the Humanities, followed by funding decisions

August 2018: applicants are notified of the funding decisions

September 2018: institutional grants administrators and project directors of successful applications receive award documents by e-mail

September 2018: successful applicants begin work on their projects

Contact: Contact the Office of Digital Humanities (ODH) via e-mail at odh@neh.gov. Applicants wishing to speak to a staff member by telephone should provide in an e-mail message a telephone

number and a preferred time to call. Applicants who are deaf or hard of hearing can contact NEH via Federal Relay (TTY users) at 800-877-8399.

ELSA U. PARDEE FOUNDATION

Grant Program: Theoretical and Computational Astrophysics Networks

Agency: Elsa U. Pardee Foundation

Website: <http://www.pardeefoundation.org/grants.aspx>

Brief Description: The Elsa U. Pardee Foundation funds research to investigators in United States non-profit institutions proposing research directed toward identifying new treatments or cures for cancer. The Foundation particularly encourages grant applications for a one year period which will allow establishment of capabilities of new cancer researchers, or new cancer approaches by established cancer researchers. It is anticipated that this early stage funding by the Foundation may lead to subsequent and expanded support using government agency funding. Project relevance to cancer detection, treatment, or cure should be clearly identified. By design, there are no limits set on the grant amount that can be requested. It must be reasonably and clearly supported by the scope of the project outlined in the application. Applications requesting more than 15% overhead are usually not considered. Papers verifying nonprofit status and relevant human subject and experimental animal treatment approvals from the recipient institution will be requested prior to project initiation. A final report summarizing financial expenditure and research achievement is required.

Proposal Deadline:

Application Deadline Final Review

December 31 May

April 30 September

August 31 December

Contact: Eric Blitz, Associate Director for Development, Corporate and Foundation Relations at eric.blitz@njit.edu

Klingenstein-Simons Neuroscience Fellowships

Grant Program: The Klingenstein-Simons Fellowship Awards in the Neurosciences

Agency: Klingenstein-Simons Neuroscience Fellowships

Website: <http://www.klingfund.org/description.php>

Brief Description: The Klingenstein-Simons Fellowship Awards in the Neurosciences supports, in the early stages of their careers, young investigators engaged in basic or clinical research that may lead to a better understanding of neurological and psychiatric disorders. The Klingenstein Fund and the Simons Foundation recognize that to accomplish this goal it is necessary to encourage a variety of new approaches. Several areas within the neurosciences are of particular interest:

Cellular and molecular neuroscience—Studies of the mechanisms of neuronal excitability and development, and of the genetic basis of behavior.

Neural systems—Studies of the integrative function of the nervous system.

Translational research—Studies designed to improve the prevention, diagnosis, treatment and our understanding of the causes of neurological and psychiatric disorders.

The candidate must and be within 4 years of completing postdoctoral training and the start of his/her tenure track appointment (between July 1, 2014 and July 1, 2018).

Proposal Deadline: February 15, 2018

Contact: Eric Blitz, Associate Director for Development, Corporate and Foundation Relations at eric.blitz@njit.edu

Musculoskeletal Transplant Foundation – Extramural Research Grants

Grant Program: Extramural Research Grant

Agency: Musculoskeletal Transplant Foundation – Extramural Research Grants

Website: <https://www.mtfbiologics.org/who-we-serve/donors-community/researchers>

Brief Description: The objective of this grant is to support translational and basic science research that will assist with moving discoveries to the clinic. Proposed studies should focus on novel research in the fields of allograft transplantation, and/or allograft science, novel uses of allografts, allograft-derived materials or biologic and/or musculoskeletal reconstruction. Studies can be in the fields of orthopaedics, spine, wound care, adipose, the use of placental tissues or novel areas for use of allografts.

Awards: Grants will be offered at up to \$100,000 per year (inclusive of indirect costs and salaries and wages) and a maximum of 3 years.

Proposal Deadline: February 1, 2018

Contact: Eric Blitz, Associate Director for Development, Corporate and Foundation Relations at eric.blitz@njit.edu

JDRF and the Helmsley Charitable Trust

Grant Program: Diabetes Innovation Challenge

Agency: JDRF and the Helmsley Charitable Trust

Website: <https://diabetes.innovationchallenge.com/skild2/diabetes/loginPage.action>

Brief Description: The [Diabetes Innovation Challenge](https://diabetes.innovationchallenge.com/skild2/diabetes/loginPage.action) is seeking:

- **Automated Insulin Devices** and related components including glucose sensing, insulin delivery systems, and cellular therapy delivery technologies
- **Diagnostics** such as tests for research and screening; early diagnosis and prevention; autoantibodies, C- peptide, or other markers such as beta cell death and risk of diabetic complications
- **Therapeutics** like smart insulins, glucagons, immune-modulating therapies, beta cell regeneration, and treatments for diabetic complications
- **Technology Design/Disease Management.** For example, new approaches to using information and communication technologies to support diabetes management

Awards: The Diabetes Innovation Challenge will award \$250,000 in cash and in-kind prizes for the winning innovations.

Proposal Deadline: January 31, 2018

Contact: Eric Blitz, Associate Director for Development, Corporate and Foundation Relations at eric.blitz@njit.edu

Streamlyne Update

It has been very exciting to introduce Streamlyne as the new tool for Grant Management. Streamlyne is simplifying the pre-award proposal submission processes promoting shared information technology (IT), and improving the timeliness of grant close out. Currently Streamlyne system has been customized in the following areas:

- Download the package with all forms – there are still some exceptions to this as the federal government continues to change some of the standard forms.
- Validation error prior to submission – this allows to review the package for errors
- Work Flow approval transparent to all users
- Budget forms customized to NSF and/or S2S
- Sub-award budgets easily download – this will allow better management of the award

New “How to Do” videos have been posted on the research website <http://www5.njit.edu/research/streamlyne/>. These videos show step-by-step process on the following tasks:

- ◆ [How to Begin Proposal Submission in Streamlyne](#)
- ◆ [How to Input Proposal Budget](#)
- ◆ [How to Process Approvals](#)
- ◆ [How to Upload Proposal Attachments](#)
- ◆ [How to Search for a Proposal that is in Route](#)
- ◆ [Difference Between "Prime Sponsor Code" and "Sponsor Code"](#)
- ◆ [How to Select an RR Budget, RR Sub-award or Modular Budget](#)
- ◆ [How to Add a Student/Summary](#)
- ◆ [Participant Support Categories](#)
- ◆ [Supplies Specific Category Materials](#)
- ◆ [How to Create a Modular Budget](#)

Also, the following links may be helpful:

- ◆ [Streamlyne Benefits for Proposal Submission and Grant Management](#)
- ◆ [Grants.gov Presentation on Online Proposal Submission Systems](#)
- ◆ [Streamlyne Newsletter V2017.1](#)
- ◆ [Streamlyne FAQs](#)

Faculty and staff having any questions on proposal submission, may contact their college representatives, and also follow up with **Justin Samolewicz, Associate Director (Pre Award)** 973-596-3145; justin.m.samolewicz@njit.edu; and **Eric Hetherington, Director, Sponsored Research Programs Administration** 973-596-3631; eric.d.hetherington@njit.edu. The college representatives to help PIs on proposal submissions are

John McCarthy, NCE Director of Research; (973) 596-3247; john.p.mccarthy@njit.edu

Cristo Leon, CSLA Director of Research; (973) 596-6426; cristo.e.yanezleon@njit.edu

Sean Andrews, YWCC Director of Research; sean.t.andrews@njit.edu

Iris Pantoja, CoAD and MTSM Project Manager; 973-596-4483; irp3@njit.edu
