

NJIT Research Newsletter

Issue: ORN-2015-41

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NJIT Research Newsletter includes *Grant Opportunity Alerts*, recent awards, and announcements of research related seminars, webinars and special events. The Newsletter is posted on the NJIT Research Website <http://www.njit.edu/research/>

Recent Research Grant and Contract Awards

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

PI: Farzan Nadim (PI)

Department: Biological Sciences

Grant/Contract Project Title: Regulation of Neuronal Oscillations by Synaptic Dynamics

Funding Agency: NIH

Duration: 12/01/15-11/30/16

PI: Zoi-Heleni Michalopoulou (PI)

Department: Mathematical Sciences

Grant/Contract Project Title: Efficient inversion in ocean acoustics with iterative, sequential, and analytical methods

Funding Agency: US Navy/ONR

Duration: 01/01/16-12/31/16

Events and Announcements

Event: Fall 2015 NSF Grants Conference Presentations

Website: <https://www.signup4.net/public/ap.aspx?EID=NATI644E&OID=162>

Abstract: Presentations and other documents for the Fall 2015 NSF Grants Conference are now posted as they become available. Please click on the following links to view and/or download individual presentations/documents. The presentation material provides description of the changes in policies related to proposal submission and grant management. Summary of the proposed changes was included in the Newsletter ORN-2015-37 posted on the research website <http://www.njit.edu/research/>. A summary of the changes effective January 1, 2016 is provided in the next section. The complete information is available on the NSF Website: <http://www.nsf.gov/pubs/policydocs/pappguide/nsf16001/sigchanges.jsp>

Event: 2016 NSF NRT Information Webinar

Host: NSF

When: November 9, 2015 1:00 AM to December 9, 2016 11:45 PM

Website: http://www.nsf.gov/events/event_summ.jsp?cntn_id=134466&org=NSF

Brief Description: The NSF Research Traineeship program (NRT) prerecorded informational videos to provide an overview of the NRT program and describe the key similarities and differences of the two tracks. The aim of these webinars was to give potential principal investigators information on program announcement [16-503](#) by emphasizing several key features and requirements of each track.

Event: ADVANCE IT and IT-Catalyst pre-proposal Technical Assistance Webinars

Host: NSF

When: September 10, 2015 1:00 PM to January 21, 2016 1:00 PM

Website: http://www.nsf.gov/events/event_summ.jsp?cntn_id=137009&org=NSF

Brief Description: The ADVANCE program office held webinars in June 2015 one on the ADVANCE Institutional Transformation track and the IT-Catalyst track described in the [ADVANCE solicitation 14-573](#).

You can download a MP4 recording of the webinars or the power point slides from the above website. Please be sure to review the solicitation for official guidelines and information on preparing and submitting proposals.

**Special Announcement on NSF Proposal Preparation
Update and Significant Changes and Clarifications to the PAPPG**

NSF Website: <http://www.nsf.gov/pubs/policydocs/pappguide/nsf16001/sigchanges.jsp>

Section E, NSF Organizations, has been revised to reflect the current responsibilities of the organizations that are normally of most direct interest to the NSF proposer and awardee community.

Significant Changes to the PAPPG Part I: *Grant Proposal Guide (GPG)*

Chapter I.F, When to Submit Proposals, has been updated to remove the ability to use other than 5 p.m. submitter's local time in solicitations. Failure to submit by 5 p.m. submitter's local time will result in the proposal not being accepted.

Chapter I.G.2, How to Submit Proposals, has been revised to reflect that an Authorized Organizational Representative (AOR) must provide the proposal certifications concurrently with submission of the proposal. This change is consistent with the process used in Grants.gov. In addition, proposal file updates and revised budgets (Chapter III.C and D, respectively) must be signed and submitted by an AOR and only an AOR can perform a withdrawal function on behalf of a proposing organization (Chapter IV.A).

Chapter II.C.1.d, Proposal Certifications, has been supplemented with a new certification regarding Dual Use Research of Concern.

Chapter II.C.1.e, Collaborators & Other Affiliations Information, is a new single-copy document that requires each senior project personnel to provide information regarding collaborators and other affiliations. This information used to be provided as part of the Biographical Sketch. The new format no longer requires proposers to identify the total number of collaborators and other affiliations when providing this information.

Chapter II.C.2.f, Biographical Sketch(es), has been supplemented to inform proposers that they may use third-party solutions to develop their biographical sketch, however, the information they submit must be compliant with NSF proposal preparation requirements. In addition, it is no longer allowable for the biographical sketches of all senior personnel to be grouped together in a single PDF file. Biographical sketches must now be uploaded separately for each individual identified on the proposal as senior personnel. Biographical sketches for Other Personnel and for Equipment proposals (Chapter II.C.2.f(ii) and (iii) respectively), however, should be uploaded as a single PDF file in the Other Supplementary Documents section of the proposal.

Chapter II.C.2.h, Current and Pending Support, has been revised to reflect that all current project support should be listed in this section of the proposal, including internal funds allocated toward specific projects. It is no longer allowable for the current and pending support of all senior personnel to be grouped together in a single PDF file. Current and pending support must now be uploaded separately for each individual identified on the proposal as senior personnel.

Chapter II.D.14, Dual Use Research of Concern (DURC), is an entirely new section and serves, in conjunction with coverage in the *Award & Administration Guide*, as NSF's implementation of the US Government Policy for Institutional Oversight of Life Sciences Dual Use Research of Concern.

Clarifications and Other Changes to the GPG

Chapter I.G.4, NSF ID, has been updated to specify that each individual user of NSF systems should not have more than one NSF ID.

Chapter II.B.2, Format of the Proposal, has been revised to show that solicitations no longer may specify different type size, margin, or spacing requirements. All NSF funding opportunities will follow the formatting instructions contained in this section of the GPG.

Chapter II.C.1, Single-Copy Documents, has been changed to reflect that, since proposers submit the Information about PIs/PDs and co-PIs/co-PDs as part of the PI profile in FastLane, it has been deleted from the list of single-copy documents. Also, when submitting a list of suggested reviewers, PIs should include the email address and institutional affiliation of persons they believe are well qualified to review the proposal.

Chapter II.C.2.a(4)(h), Cover Sheet, contains guidance on the procedure to follow if the specific location of an international conference is not known at the time of proposal submission. A parallel change has been made to Chapter II.C.2.j.

Chapter II.C.2.b, Project Summary, has been modified to remind proposers that only Project Summaries that use special characters may be uploaded in the Supplementary Documents section. Such Project Summaries must contain separate headings for Overview, Intellectual Merit and Broader Impacts or the proposal will be returned without review.

Chapter II.C.2.d(iii), Results from Prior NSF Support, has been revised to reflect that the information must be provided for any PI or co-PI that has received NSF funding with a start date in the past five years (including any current funding and no-cost extensions). Information also has been added on which types of NSF awards must be reported on in this section of the proposal.

Chapter II.C.2.g(i)(b), Salaries and Wages, has been updated to parallel the language in 2 CFR § 200.413 on administrative and clerical salaries and wages.

Chapter II.C.2.g(v), Participant Support, has been supplemented with information on the types of costs that may be proposed and under what scenarios they are allowable.

Chapter II.C.2.g(vi)(f), Visa Costs, has been removed now that the Uniform Guidance contains coverage on this topic.

Chapter II.C.2.j, Special Information and Supplementary Documentation, now specifies the format that must be used for letters of collaboration.

Chapter II.D.5.b, Collaborative Proposals, reminds proposers that should a collaborative proposal from multiple organizations be awarded, both the lead and non-lead organizations are required to submit separate annual and final project reports.

Chapter II.D.7, Proposals Involving Vertebrate Animals, contains updated guidance on the information that must be provided in the Project Description for projects that involve use of vertebrate animals and the procedure to follow if IACUC approval has not been obtained prior to submission. For some types of vertebrate animals (e.g. non-human primates), additional review may be required.

Chapter II.D.9, Conference Proposals, has been supplemented to include information on the types of costs that may be proposed for conferences and under what scenarios they are allowable.

Exhibit II-1, Proposal Preparation Checklist, has been updated to reflect the changes made to the GPG and NSF's electronic systems and streamlined to emphasize the most relevant items. Proposers are strongly encouraged to conduct an administrative review prior to submission, to ensure that proposals comply with the instructions in the GPG and/or the program solicitation, in the format specified.

Chapter III.E, Funding Recommendation, coverage on award abstracts and titles has been updated for consistency with NSF notices to the community on transparency and accountability.

Chapter III.F, NSF's Risk Management Framework and the Decision to Award or Decline Proposals, has been supplemented with language regarding NSF's implementation of the Federal Awardee Performance and Integrity Information System. The risk-based framework cumulative threshold has increased from \$200,000 to \$225,000 for proposers who have not received NSF funding in the last five years.

Significant Changes to the PAPPG Part II, Award and Administration Guide (AAG)

Chapter I.D.3.c(ii)(c), NSF Awards, has been revised to reflect that requests for NSF-approved extensions submitted after the grant end date must include justification for why they were not submitted earlier.

Chapter II.A.2, Grantee Notifications to NSF and Requests for NSF Approval, has been revised to state that, with the exception of significant changes in methods or procedures and significant changes, delays or events of unusual interest, all notifications and requests must be electronically signed and submitted by the AOR via use of NSF's electronic systems.

Chapter II.D, Technical Reporting Requirements, has been revised to state that, in the case of annual project reports, the reports should be submitted no later than 90 days prior to the end of the current budget period. For final project reports and project outcomes reports for the general public, reports should be submitted no later than 120 days following expiration of the grant. Grants will be financially closed out on the first day of each month for all awards with end dates of 120 or more days prior to the financial closeout day. Parallel changes have been made to section II.C.3 with regard to annual and final cost sharing reports.

Chapter III.E, Award Financial Reporting Requirements – Final Disbursement Reporting, Consolidated Listing of Program- and Cost-Related Grantee Notifications to, and Requests for Approval from, the National Science Foundation, has been revised to reflect that grantees must liquidate all obligations incurred under their awards not later than 120 calendar days after the award end date and that NSF will financially close awards 120 days after the award end date.

Chapter VI.B.5, Life Sciences Dual Use Research of Concern (DURC), is an entirely new section and serves, in conjunction with coverage in the GPG, as NSF's implementation of the US Government Policy for Institutional Oversight of Life Sciences Dual Use Research of Concern.

Chapter VI.D.2.c, Public Access to Copyrighted Material, is an entirely new section which provides information on NSF's Public Access Policy. This policy also is referenced in Chapter VI.E.1 on publication and distribution of grant materials.

Clarifications and Other Changes to the AAG

Chapter II.B.2.e and 3, Changes in Project Direction or Management, has been updated to reflect that, when a grant is being transferred, if funding is requested to support a postdoctoral

researcher, a mentoring plan must be provided and the PI must report on the mentoring activities in their NSF project reports. The same procedures must be followed if a request to subaward, transfer or contract out part of an NSF award includes funding to support a postdoctoral researcher and the original proposal did not include a mentoring plan.

Chapter III.D.3, Interest Earned on Advance Payments, has been updated with guidance that implements the applicable portions of 2 CFR § 200.305 on interest income.

Chapter V.A, Basic Considerations, has been supplemented with language noting that NSF policies which have a post-award requirement are implemented in the grant terms and conditions.

Chapter V.B.2, Administrative and Clerical Salaries & Wages Policy, is a new section that articulates when direct charging of these costs may be appropriate, in accordance with 2 CFR § 200.413.

Chapter V.D, Indirect Costs, has updated the language on predetermined rates in order to conform to the coverage in the Uniform Guidance. In addition, it discusses under what circumstances NSF may elect to set award specific rates.

Chapter V.F.4, Passports and Visas, has been revised to refer to the Uniform Guidance for coverage on visa costs.

Chapter VII.A.2, Suspension and Termination, has been supplemented with language regarding NSF's implementation of the Federal Awardee Performance and Integrity Information System.

Chapter VII.B.3, Informal Resolution of Grant Administration Disputes, contains revised procedures to be followed when a grantee disagrees with or disputes a post-award decision made by an NSF Grants and Agreements Officer.

**Special Announcement on
New steps to enhance transparency and accountability at NSF**

NSF Website: <http://www.nsf.gov/pubs/2015/in137/in137.pdf>

Effective December 26, 2014, NSF's updated *Proposal and Award Policies and Procedures Guide (PAPPG)* (NSF 15-1) includes the following statement about award abstracts: "Should a proposal be recommended for award, the PI (Principal Investigator) may be contacted by the NSF Program Officer for assistance in preparation of the public award abstract and its title. An NSF award abstract, with its title, is an NSF document that describes the project and justifies the expenditure of Federal funds."

While our update to the PAPPG clarifies the possible role of the PI in helping NSF prepare award abstracts, NSF would like to share the Foundation's guidelines about NSF award abstracts with the science, engineering and education communities to help improve communication about the nature of the award to the public.

The NSF public award abstract consists of both a nontechnical and technical component. The nontechnical component of the NSF award abstract must:

- explain the project's significance and importance; and
- serve as a public justification for NSF funding by articulating how the project serves the national interest, as stated by NSF's mission: to promote the progress of science; to advance the national health, prosperity and welfare; or to secure the national defense.

By sharing these guidelines, NSF is clarifying the nature of requested assistance from PIs in this valuable effort in helping the agency adhere to its newly established guidelines. This

collaborative effort also helps foster stronger public communication about the value of federal investments in fundamental research.

To learn more about NSF's transparency and accountability efforts, visit <http://www.nsf.gov/od/transparency/transparency.jsp>.

Grant Opportunity Alerts

Keywords and Areas Included in Grant Opportunity Alerts:

NSF: Algorithms in the Field (AitF); EarthCube; Graduate Research Internship Program (GRIP)

NIH: Revision Applications for Validation of Mobile/Wireless Health Tools for Measurement and Intervention (R01); Image-guided Drug Delivery (R01); BRAIN Initiative: Optimization of Transformative Technologies for Large Scale Recording and Modulation in the Nervous System (U01), BRAIN Initiative: Development and Validation of Novel Tools to Analyze Cell-Specific and Circuit-Specific Processes in the Brain (R01)

DoD/ONR/AFOSR/ARL: AFRL RD/RV University Cooperative Agreement; Deployed Warfighter Protection Program FY 16 Call For Research

Department of Energy: Building America Industry Partnerships For High Performance Housing Innovation

Vodafone American Foundation: Wireless Innovation Project

L'ORÉAL USA: L'ORÉAL USA Fellowships for Women in Science Program

Grant Opportunities

National Science Foundation

Grant Program: Algorithms in the Field (AitF)

Agency: National Science Foundation NSF 16-515

RFP Website: <http://www.nsf.gov/pubs/2016/nsf16515/nsf16515.htm>

Brief Description: Algorithms in the Field encourages closer collaboration between two groups of researchers: (i) theoretical computer science researchers, who focus on the design and analysis of provably efficient and provably accurate algorithms for various computational models; and (ii) other computing and information researchers including a combination of systems and domain experts (very broadly construed – including but not limited to researchers in computer architecture, programming languages and systems, computer networks, cyber-physical systems, cyber-human systems, machine learning, artificial intelligence and its applications, database and data analytics, etc.) who focus on the particular design constraints of applications and/or computing devices. Each proposal must have at least one co-PI interested in theoretical computer science and one interested in any of the other areas typically supported by CISE. Proposals are expected to address the dissemination of both the algorithmic contributions and the resulting applications, tools, languages, compilers, libraries, architectures, systems, data, etc.

Awards: 15 awards of up to \$800,000 per award with durations up to 4 years are anticipated, subject to availability of funds.

Letter of Intent: Not Required

Full Proposal Deadlines: Submission window: February 18, 2016 - March 03, 2016.

Contacts:

- Tracy Kimbrel, Program Director, CISE/CCF, telephone: (703) 292-8910, email: tkimbrel@nsf.gov
 - Thyagarajan Nandagopal, Program Director, CISE/CNS, telephone: (703) 292-8950, email: tnandago@nsf.gov
 - Rahul Shah, Program Director, CISE/CCF, telephone: (703) 292-8910, email: rshah@nsf.gov
 - Jack Snoeyink, Program Director, CISE/CCF, telephone: (703) 292-8910, email: jsnoeyin@nsf.gov
 - Maria Zemankova, Program Director, CISE/IIS, telephone: (703) 292-8930, email: mzemanko@nsf.gov
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Grant Program: EarthCube

Agency: National Science Foundation NSF 16-514

RFP Website: <http://www.nsf.gov/pubs/2016/nsf16514/nsf16514.htm>

Brief Description: EarthCube is a community-driven activity sponsored through a partnership between the NSF Directorate for Geosciences (GEO) and the Directorate for Computer & Information Science & Engineering (CISE) Division of Advanced Cyberinfrastructure (ACI) to transform research in the academic geosciences community. EarthCube aims to create a well-connected and facile environment to share data and knowledge in an open, transparent, and inclusive manner, thus accelerating our ability to understand and predict the Earth system.

Achieving EarthCube will require a long-term dialog between NSF and the interested scientific communities to develop cyberinfrastructure that is thoughtfully and systematically built to meet the current and future requirements of geoscientists. New avenues will be supported to gather community requirements and priorities for the elements of EarthCube, and to capture the best technologies to meet these current and future needs. The EarthCube portfolio will consist of interconnected projects and activities that engage the geosciences, cyberinfrastructure, computer science, and associated communities. The portfolio of activities and funding opportunities will evolve over time depending on the status of the EarthCube effort and the scientific and cultural needs of the geosciences community.

This umbrella solicitation for EarthCube allows funding opportunities to be flexible and responsive to emerging needs and collaborative processes. The EarthCube vision and goals do not change over time, and this section of the solicitation will remain constant. Funding opportunities to develop elements of the EarthCube environment will be described in Amendments to this solicitation. Amendments will appear in the Program Description section of the solicitation and will include details on the parameters, scope, conditions, and requirements of the proposal call. Researchers who receive alerts related to solicitation releases will receive notification when the EarthCube solicitation is updated with an Amendment.

Awards: Up to 19 awards total for Amendment V. The number will be determined based on the results of the merit review process and availability of funds. Amendment V anticipates up to 2 awards for Prototypes, 3-5 awards for Research Coordination Networks (RCNs) and up to 12 for Capabilities. Anticipated Funding Amount: \$13,000,000

Letter of Intent: Not Required

Full Proposal Deadlines:

March 24, 2016: EarthCube Prototypes
March 24, 2016: EarthCube Capabilities
Proposals Accepted Anytime: EarthCube RCN

Contacts:

- Eva Zanzierka, Directorate for Geosciences, Earth Sciences Division, telephone: (703) 292-4734, email: ezanzerk@nsf.gov
- Amy Walton, Directorate for Computer and Information Science and Engineering, Division of Advanced Cyberinfrastructure, telephone: (703) 292-4538, email: awalton@nsf.gov
- Michael Sieracki, Directorate for Geosciences, Division of Ocean Sciences, telephone: (703) 292-7585, email: msierack@nsf.gov
- Ilia I. Roussev, Directorate for Geosciences, Atmospheric and Geospace Sciences Division, telephone: (703) 292-8519, email: iroussev@nsf.gov
- Marc Stieglitz, Directorate for Geosciences, Polar Programs, telephone: (703) 292-2461, email: mstiegli@nsf.gov

Grant Program: NSF Graduate Research Fellowship Program (GRFP) - Graduate Research Internship Program (GRIP); Supplement

Agency: National Science Foundation DCL NSF 16-015; PD 16-7172

RFP Website:

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505127&org=NSF&sel_org=NSF&from=fund

Brief Description: The new internship initiative described in the [GRIP Dear Colleague Letter 16-015](#) expands opportunities for NSF Graduate Fellows to enhance their professional development by engaging in mission related research experiences with partner agencies across the federal government. GRIP is open only to NSF Graduate Fellows, recipients of the Graduate Research Fellowship Program (GRFP) award.

Research internship opportunities are available through the Partner Agencies listed below in the Related URL section of this webpage. More internship opportunities with additional partner agencies are anticipated in the near future. Please see application details in the [Dear Colleague Letter 16-015](#)

The Division of Graduate Education announces the continuation of the Graduate Research Internship Program (GRIP). GRIP provides professional development to NSF Graduate Research Fellowship Program (GRFP) Fellows (referred to as "Fellows") through internships developed in partnership with federal agencies (see <http://www.nsf.gov/grip> for a current list of partner agencies). Through GRIP, Fellows participate in mission-related, collaborative research under the guidance of host research mentors at federal facilities and national laboratories. GRIP enhances the Fellows' professional skills, professional networks, and preparation for a wide array of career options. The sponsor agencies benefit by engaging Fellows in applied projects, helping to develop a highly skilled U.S. workforce in areas of national need.

Through GRIP, Fellows benefit from partnerships developed by NSF and other federal agencies to provide internship opportunities. Internship details for each partner agency differ and are available through links to agency websites. As additional agencies develop internship partnerships with NSF, updates will be made to the GRIP website (<http://www.nsf.gov/grip>).

Awards: Standard Grants. Approximately 3-5 EXPLORATORY awards for up to 3 years and up to \$300,000 per award, and 13-16 FULL-SIZE awards for up to 4 years and up to \$1,000,000 per award are anticipated, subject to availability of funds.

Letter of Intent: Not Required

Full Proposal Deadlines: December 4, 2015

Supplement Deadline Date: May 6, 2016

Contacts:

Gisele Muller-Parker info@nsfgrfp.org (866) 673-4737

Joerg Schlatterer info@nsfgrfp.org (866) 673-4737

Susan Brennan info@nsfgrfp.org (866) 673-4737

Erick Jones info@nsfgrfp.org (866) 673-4737

National Institutes of Health

Grant Program: Revision Applications for Validation of Mobile/Wireless Health Tools for Measurement and Intervention (R01)

Agency: National Institutes of Health PA-16-043

RFP Website: <http://grants.nih.gov/grants/guide/pa-files/PA-16-043.html>

Brief Description: Mobile and wireless health technologies have grown exponentially in the past few years. Nearly 90% of U.S. adults have a cell phone and smartphone usage is above 50%. The ubiquity of mobile phone use has provided a platform for the delivery of health assessment and interventions previously unavailable to health research and practice. Worldwide, the penetration of mobile phone use, even in remote areas of developing countries, has provided a vehicle for the delivery of health care to people who have little to no other access to healthcare. Although mobile phones are the prototype for mobile/wireless health efforts, wireless sensor technologies also have rapidly grown in the past few years. These sensor technologies provide passive, real-time data on a variety of physiological, behavioral, and environmental variables.

The range of health research and clinical practice affected by this mobile/wireless revolution is quite broad. Mobile social networks have been used for disease surveillance and public health research. Preventive health measurement and intervention applications to address smoking, diet, physical activity and other health behaviors have increased dramatically. Mobile and wireless technologies have been employed for medical screening and diagnostic purposes, providing low cost and portable diagnostic tools that can be used in rural and underserved settings. Mobile and wireless technologies also have been used to improve chronic disease management for diseases such as diabetes and asthma, allowing healthcare providers to more intensively monitor patient status and intervene as needed while also giving patients the tools to more effectively self-manage their disease.

Each year, the number of newly released mobile and wireless health tools grows exponentially, but many of these recently released tools have been validated inadequately in clinical research and practice. Adoption of these technologies requires more evaluation in clinical research settings. Through this FOA, NIH strives to capitalize on current research projects that collect clinical outcomes to validate wireless tools.

Specific Research Objectives and Scope

Research to be supported by this FOA is expected to provide rapid research evaluation of newly developed mobile and wireless health technologies. For the purpose of this FOA, "mobile/wireless" health technologies are defined broadly to include any health technologies that wireless transmit data and that are intended for portable use. While the focus of these technologies are primarily devices worn on or carried by the individual throughout the day, devices that provide a level of portability not previously available (e.g. smaller and more

portable version of a diagnostic scanner that transmits data wirelessly to the healthcare provider) is consistent with the scope of this initiative.

As noted previously, the purpose of this initiative is not to support the development of new technologies but to evaluate the validity of recently developed mobile/wireless health technologies. Some additional programming may be required to integrate or customize an existing technology for the specific clinical research of the parent R01, but these efforts should be sufficiently limited so that the findings from the research are generalizable.

The focus on this initiative is on research questions that will rapidly validate an existing mobile/wireless tool in clinical research. With the context of a revision, it is anticipated that the clinical research screening, diagnostic, and/or outcome monitoring measures will provide the "gold standard" comparator for the new mobile or wireless tool being evaluated, but additional clinical measures may be needed to validate the new tool. Validation analyses could include but are not limited to agreement rates, sensitivity/specificity, and receiver operating curves (ROC). Research evaluating the reliability of the tool also is consistent with this initiative. For outcome monitoring purposes, assessment of sensitivity to change also is consistent with this FOA. Validation of mobile and wireless technologies for intervention delivery are also encouraged. These efforts may include augmenting an existing intervention arm with a recently developed mobile/wireless intervention, adding a new intervention arm that includes the mobile/wireless intervention, and/or re-randomizing an existing arm in a sequential adaptive design that adds the mobile/wireless intervention after the short-term primary outcome has been completed. Outcomes consistent with this FOA may include the primary outcomes of the parent project, but also may include cost-effectiveness data.

Awards: Standard grants.

Letter of Intent: 30 days before each receipt 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: Image-guided Drug Delivery (R01)

Agency: National Institutes of Health PA-16-044

RFP Website: <http://grants.nih.gov/grants/guide/pa-files/PAR-16-044.html>

Brief Description: Despite significant advancements against many types of cancer, neuro-, and cardiovascular diseases, challenging medical problems remain in each indication. To date, systemic therapy is a common approach to the chronic management of many diseases, including cancer. However, systemic toxicity is a major drawback, limiting the utility and effectiveness of such therapies. Recent research efforts in the development of drug delivery systems have concentrated on targeted delivery and controlled release of the drug or other agents in the target in order to increase the therapeutic ratio. IGDD is a therapeutic method where target localization and drug (or biologics) delivery are guided and monitored through noninvasive imaging. A full implementation of IGDD will require drugs (or biologics) that can be imaged or identified in the body as they enter the blood stream, are localized at the target, and are then released or otherwise activated to provide focal treatment. The goal in IGDD is to optimize local delivery of the therapeutic pharmaceutical to the target tissue and provide microanatomical and functional imaging feedback on the therapeutic process(es), including during treatment and monitoring.

The impetus for this FOA is to address the challenges associated with focal therapeutic delivery and the study of effectiveness and efficacy. Recent studies that focus on the engineering of targeted delivery systems and advanced imaging methodologies have shown the ability to quantify location and magnitude of targeted delivery. For instance, recent advances in applications of nanotechnologies to cancer have led to the development of nanocarriers that can deliver imaging contrast agents and therapeutics at the sub-cellular level. Furthermore, these nanoparticles may be functionalized to target certain tumors, and could be activated upon absorption of external energies or in response to chemical reactions. Nanoparticle constructs have the capability to be functionalized, to carry multiple imaging, targeting, and therapeutic moieties, to be multiplexed, to respond to various biological signals in real-time, thus making them particularly suitable for IGDD. Despite significant accomplishments in applications of nanotechnology in cancer, neuro-, and cardiovascular diseases, barriers remain in their successful implementation as clinical solutions. These translational barriers relate to variations in formulations and in vivo stability of nanoparticles, and limited data on the fate and toxicity of nanocarriers once they enter the body. Quantitative imaging may prove to be an invaluable tool to help overcome some of the barriers associated with the clinical translation of nanocarrier-enabled drug delivery as it will help provide quantitative data on nanoparticle behavior and distribution in vivo. Quantitative imaging methods may be used for target characterization (detection, localization, and pathology) to study the pharmacokinetics (PK) and pharmacodynamics (PD) of therapeutic uptake and efficacy, respectively, to determine the biodistribution and therapeutic effects across different spatial and functional resolution scales (molecular to organ level). Imaging and drug delivery systems supported through this FOA are not limited to nanotechnology based systems and they may include a variety of approaches including catheter based delivery, extracorporeal-triggered delivery and release of therapeutic vectors through the use of electromagnetic or ultrasonic radiation systems, and biologically targeted small molecules labeled with imaging radioactive conjugates.

Specific Research Objectives

This FOA will support research in IGDD. Of particular interest are studies that address translational barriers, including variations of in vivo formulations, lack of quantitative imaging data on in vivo biodistribution and PK/PD. Furthermore, studies that address interventions of early disease are encouraged.

Examples of research supported by this FOA include, but are not limited to, the following areas:

- Development of imaging and therapeutic delivery systems for specific cancers and other diseases. The therapeutic payload may be a drug, cocktail of drugs, biologics, immune agents, or sensitizers to external therapies, such as radiation or heat;
- Development of IGDD systems that incorporate the active pharmaceutical ingredients (APIs) into the original design of the delivery nanovector;
- Image-guided delivery of approved drugs and biologics to help accelerate clinical translation;
- Development of imaging methods as quantitative, and when appropriate, real-time assays for biophysical and biochemical characterization of the drug delivery process, including biodistribution, PK/PD, as well as target characterization, dosimetry, and toxicology across different temporal and spatial resolution scales;
- Development of innovative reference standards for IGDD;
- Validation of imaging assays of drug delivery using standard models, including histology and quantitative autoradiography;
- Development and validation of the controlled release of multifunctional imaging payloads that is indicative of the target localization and the therapeutic process;

- Image-guidance technologies for increasing the range and quality of drug delivery systems that will also improve image interpretation;
- Studies of large animal models in pre-clinical validation and toxicology of IGDD vectors; and
- Studies that are directed towards translation of IGDD technology into the clinic, including first-in-human studies.

Applicants are encouraged to use the multi PD/PI grant model to meet the required imaging and in vivo therapy delivery components. The involvement of expertise in experimental or clinical oncology at an early stage of the investigation is also encouraged. Participation of partners from the commercial sector is encouraged.

Moreover, collaborative activities are encouraged with an existing NCI-funded center or consortium (i.e., with U01 or U54 awardees), as pertinent to a broader consensus for the proposed translational research methods or the creation of public resources for translational research.

Because the aim of this FOA is to support research in overcoming translational barriers to IGDD, large clinical trials are not appropriate for this FOA.

Awards: Standard grants.

Letter of Intent: Not applicable.

Deadline: June 21, 2016; November 22, 2016; June 21, 2017; November 22, 2017; June 21, 2018; November 22, 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 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: BRAIN Initiative: Optimization of Transformative Technologies for Large Scale Recording and Modulation in the Nervous System (U01)

Agency: National Institutes of Health RFA-NS-16-007

RFP Website: <http://grants.nih.gov/grants/guide/rfa-files/RFA-NS-16-007.html>

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

This FOA also addresses a core principle of the BRAIN 2025 report: to critically test and further develop new methods through iterative interaction between technologists and experimentalists with a goal of broad dissemination and integration into regular neuroscience practice.

This FOA seeks applications for the optimization of existing and emerging technologies and approaches for large-scale recording and manipulation of neural activity, to enable transformative understanding of dynamic signaling in the nervous system.

This FOA is intended for the iterative refinement of emergent technologies and approaches that have already demonstrated their transformative potential through initial proof-of-concept testing, and are appropriate for accelerated engineering development while scaling

manufacturing techniques towards sustainable, broad dissemination and incorporation into regular neuroscience practice.

An additional FOA (RFA-NS-16-006) solicits applications for proof-of-concept testing and development of new technologies and novel approaches for large-scale recording and manipulation of neural activity.

Applications are expected to address any or all of the following three general goals for the FOA:

1. Develop New Large-Scale Network Recording Capabilities.

Recording dynamic neural activity from complete neural networks, over long periods, in any area of the brain is a challenging but essential goal. Advances in the exploration and development of new technologies for neural cell recording, including methods based on electrodes, microelectronics/microchips, imaging, molecular genetics, and nanoscience are encouraged. It is expected that progress will initially be tractable in non-human animals (invertebrate or vertebrate), but extrapolation to human circuits is an ultimate goal.

2. Develop Tools for Circuit Manipulation.

The ability to activate and inhibit specific populations of neurons is key to understanding functional circuits, which will advance the scope of our knowledge from observation of neural phenomena to a mechanistic understanding of neural causation. A new generation of tools for optogenetics, pharmacogenetics, biochemical, electromagnetic and/or acoustic modulation needs to be developed for use in animals, and eventually in humans, to enable the immense potential of circuit manipulation.

3. Link Neural Activity to Behavior.

The goal of this FOA is to produce technologies with potential to elucidate nervous system function, in health and disease, in the context of complex behaviors. Proposed technologies should be compatible with experiments in behaving animals and should be validated under in vivo experimental conditions. In addition, novel approaches for enabling large-scale neural recording or manipulation during complex behaviors are encouraged along with the computational and statistical tools necessary to link neural activity to behavior. In combination with concurrent measurement and manipulation of neuronal activity, applications may propose methods to enhance the ability to quantify and interpret animal behavior, at high temporal and spatial resolution, reliably and objectively, over long periods of time and under a broad set of conditions.

Awards: NIH BRAIN Initiative intends to fund an estimate of 5-7 awards, corresponding to total of up to \$3.8M for fiscal year 2016.

Letter of Intent: January 24, 2016

Deadline: February 24, 2016, 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: BRAIN Initiative: Development and Validation of Novel Tools to Analyze Cell-Specific and Circuit-Specific Processes in the Brain (R01)

Agency: National Institutes of Health RFA-MH-16-775

RFP Website: <http://grants.nih.gov/grants/guide/rfa-files/RFA-MH-16-775.html>

Brief Description: This FOA solicits applications to develop next-generation, innovative technologies to define and target specific cell types in the brain. Of particular interest are first-in-class and/or cross-cutting non-invasive or minimally invasive techniques that permit repeated measurements from cells over time in a non-destructive manner. Tools/technologies relevant for this initiative are expected to be transformative, either through the development of

novel tools that may be high-risk or through major advances in current approaches that break through technical barriers and will significantly improve current capabilities. While an emphasis of the BRAIN initiative is the development of novel tools to study the brain, here we highlight the need for innovative approaches to bridge experimental scales. Studies that are able to explore molecular and cellular mechanisms of neural activity permitting improved precision and sensitivity in the analysis of micro-and macro-circuits are strongly encouraged. Progress in understanding how the activity of the brain translates to complex behaviors will be facilitated by non-invasive approaches for both monitoring and manipulating neural activity in awake, behaving organisms.

Development of cell type-specific molecular sensors and additional tools and approaches to address circuit-specific manipulation and monitoring.

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

Letter of Intent: January 2, 2016

Deadline: February 2, 2016, 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.

No late applications will be accepted for this Funding Opportunity Announcement.

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.

DoD/US Army/Office OF Naval Research/Air Force Office of Scientific Research

Grant Program: AFRL RD/RV University Cooperative Agreement

Agency: Department of Defense; Air Force -- Research Lab

RFP Website: http://www.grants.gov.net/grants_display.php?program=BAA-RVKV-2015-0003

Brief Description: This is a 5 year, open BAA. The AFRL Directed Energy Directorate (RD) and Space Vehicles Directorate (RV) are interested in receiving proposals under this announcement in order to establish university Cooperative Agreements (CA) to provide funds to students/professors in a timely manner for the purpose of engaging U.S./U.S. territories' colleges and universities in directed energy and space vehicles-related basic, applied, and advanced research projects that are of interest to the Department of Defense (DoD). The scope of the research will include the entire spectrum of RD and RV technology that is applicable to the Air Force, including all peripherally-related RD and RV research.

Awards: Available Funding: \$24,500,000

Full Proposal Deadline: Open until November 23, 2020

Grant Program: Deployed Warfighter Protection Program FY 16 Call For Research

Agency: Department of Defense DWFP-16-S-01

RFP Website:

<http://www.afpmb.org/sites/default/files/whatsnew/2015/DWFP%20FBO%20Announcement%202016%2019%20Nov%202016.pdf>

Brief Description: The US Army Contracting Command, Aberdeen Proving Ground Natick Contracting Division, Fort Detrick invites applications for funding opportunities for the fiscal year 2016 Deployed War Fighter Protection Research Program (DWFP), renewable for up to 3 years, administered by the Armed Forces Pest Management Board (AFPMB).

The AFPMB is soliciting pre-proposals for original, innovative Diseases of significant concern include malaria, dengue fever, chikungunya fever, and other arboviruses. The program supports development of: (1) new toxicants or the adaptation of existing toxicants to relevant vectors; (2) new insecticide application techniques; and (3) new personal protection tools that prevent human-vector contact (excluding work on topical repellents). Ideally the research would support the development, evaluation, and registration of new insecticides, or improved formulations of existing insecticides for vector control, new technology or enhanced modalities of personal protection from biting arthropods, or would improve the efficacy and sustainability of equipment for application of pesticides for vector control in a military operational environment. Research should be product oriented, consisting of basic or applied research related to a particular product, evaluation of experimental products for military uses, or research directed towards development of an existing product for commercial manufacture. The research must be primarily applicable to the military but products should be transferable to civilian uses.

Pre-proposals will be accepted from investigators who are employed by or affiliated with an eligible institution. Eligible institutions include for-profit, non-profit, public, and private organizations in any country. Examples include academic establishments (universities, colleges), hospitals, laboratories, companies, and agencies of local, state, and federal government (with the exception of USDA investigators for whom DWFP funding arrangements are made separately by inter-Agency agreement.) The pre-proposal form is available at <http://www.afpmb.org/preproposal.docx>.

The proposal/application should clearly demonstrate strong institutional support.

Awards: It is anticipated that approximately \$2,000,000 will be awarded this year (FY16), with future years subject to the availability of funds. Total proposed cost may not exceed \$250,000 per year for up to 3 years, inclusive of direct and indirect costs. Approximately 8-12 awards are anticipated. Funding is intended to begin in April 2016. Projects will be selected on the basis of peer-reviewed scientific merit and programmatic relevance determined by an Armed Forces Pest Management Board Integrated Process Team.

Full Proposal Deadline: January 8, 2016

Department of Energy

Grant Program: Building America Industry Partnerships For High Performance Housing Innovation

Agency: US Department of Energy: DE-FOA-0001395

RFP Website <https://eere-exchange.energy.gov>

Brief Description: Building America Industry Partnerships for High Performance Housing Innovation The Department of Energy's (DOE) Office of Energy Efficiency and Renewable Energy (EERE), on behalf of the Buildings Technologies Office (BTO), announces the Funding Opportunity Announcement "Building America Industry Partnerships for High Performance Housing Innovation" with funding up to \$5.5 million. The Building America Research Program is the Residential Building Integration (RBI) Program's premier applied research program. The Program is responsible for over 40 housing innovations to date that have enabled technology and market advancements in residential energy efficiency. With this FOA, RBI will select additional building science teams in 2016 for the Building America Research Program. This FOA builds on work begun in the 2015 Building America FOA. Awardees will conduct applied research, development and demonstration (RD&D) in real world houses of cost-effective

technologies and practices that can help reduce the energy use intensity (EUI) of new single-family homes by 60% and existing single-family homes by 40%, relative to the 2010 average home EUI in each climate zone, by 2025, with a focus on reducing heating and cooling loads. This FOA has 2 topics: Topic 1: Building America Technology to Market Roadmap Projects Topic 1 addresses three integrated technology gaps focused on achieving high performance residential buildings and overcoming market barriers to adoption at scale, including: A) High Performance Moisture-Managed Building Envelope Systems; B) Optimized Comfort Systems for Low-Load Homes; and C) High Performance Ventilation Systems & IAQ Strategies. Topic 2: Home Improvement RD&D Projects Topic 2 addresses RD&D related to innovative energy efficiency upgrade opportunities for trade contractors during home improvements. Topic 2 projects must offer significant potential for increasing the energy efficiency of existing homes by addressing cost and/or market entry barriers related to home improvement trades adding energy efficiency measures during typical home improvement transactions. Applicants may propose RD&D projects in the following home improvement sectors: Envelope upgrades (i.e., roofing, siding, & window replacements, foundation repairs, or other home envelope improvements related to achieving energy savings) Mechanical system upgrades (i.e., HVAC service & replacements with the potential for significant energy savings above standard practice) In addition, DOE will also consider Topic 2 project proposals that develop and/or demonstrate: Innovative, cost saving methods/technologies for assessing home performance, either during inspections or real time operation. On November 30, 3:00PM EST there will be an informational webinar about the FOA. Register at: <https://attendee.gotowebinar.com/register/3467376259542266370> The full Funding Opportunity Announcement (FOA) is posted on the EERE eXCHANGE website at <https://eere-exchange.energy.gov>. Applications must be submitted through the EERE eXCHANGE website to be considered for award. The applicant must first register and create an account on the EERE eXCHANGE website. A User Guide for the EERE eXCHANGE can be found on the EERE website <https://eere-exchange.energy.gov/Manuals.aspx> after logging in to the system. Information on where to submit questions regarding the content of the announcement and where to submit questions regarding submission of applications is found in the full FOA posted on the EERE eXCHANGE website.

Awards: Awards up to \$2,000,000

Proposal Submission Deadline: February 8, 2016.

Vodafone American Foundation

Grant Program: Wireless Innovation Project

Agency: Vodafone American Foundation

RFP Website <http://vodafone-us.com/wireless-innovation-project/>

Brief Description: The Vodafone Wireless Innovation competition offers prizes of up to \$300,000 for “the best innovations using wireless related technology to address critical social issues around the world. Project proposals must demonstrate significant advancement in the field of wireless-related technology applied to social benefit use.

- Applicants must demonstrate a multi-disciplinary approach that uses an innovation in wireless-related technology to address a critical global issue
 - The project must be at a stage of research where an advanced prototype or field/market test can occur during the award period.
 - The technology should have the potential for replication and large scale impact.
-

· Teams should have a business plan or a basic framework for financial sustainability and rollout.”

Awards: Up to \$300,000

Proposal Submission Deadline: February 2, 2016.

For More Information, please contact Eric Blitz, Associate Director for Development Corporate and Foundation Relations; Tel: 973-596-3402

L'ORÉAL USA

Grant Program: L'ORÉAL USA FOR WOMEN IN SCIENCE PROGRAM

Agency: McKnight Foundation

RFP Website <https://neuroscience.mcknight.org/the-awards>

Brief Description:

The L'Oréal USA For Women in Science fellowship program awards five women postdoctoral scientists annually with grants of \$60,000 each for their contributions in Science, Technology, Engineering and Math (STEM) fields and commitment to serving as role models for younger generations. The program is the U.S. component of the L'Oreal-UNESCO For Women in Science International Fellowships. Celebrating its twelfth year in the U.S., the For Women in Science program has awarded 60 postdoctoral women scientists nearly \$3 million in grants.

L'Oréal USA partners with the American Association for the Advancement of Science (AAAS) to manage the program's application and peer-review process. Each year, the program attracts talented applicants from diverse STEM fields, representing some of the nation's leading academic institutions and laboratories.

The L'Oréal USA For Women in Science fellowship program has awarded 60 post-doctoral women scientists nearly \$3 million in grants since 2003.

The eligibility criteria are as follows:

- Must have a conferred PhD and have started in a postdoctoral research position by December 31, 2015
- Must maintain the status of postdoctoral researcher throughout the fellowship year
- Must be American born, naturalized citizen or permanent resident
- Must be affiliated with a U.S. based academic or research institution
- Must plan to conduct their postdoctoral studies and research in the U.S.
- Must be involved in basic research in the life and physical/material sciences, engineering & technology, computer science and mathematics
- Cannot be in a faculty position
- Must commit to at least twenty hours of activity in support of women and girls in science (e.g. mentoring, classroom visits, media, events)
- Must be available the week of October 4-7, 2016 for the For Women in Science Awards Week

Deadline: February 5, 2016