Grant Opportunity Alerts: Issue: ORD-GOA-2014-11

IMPORTANT NOTE to NIH Grant Awardee: This issue includes Supplement Funding Opportunities to PIs with NIH grants.

Keywords and Areas Included in Funding Opportunities Alerts (see below):
NIH: Supplements Awards, 3-D Printing of Medical Devices (R41/42/43/44); BRAIN Program Announcement
DARPA: PACE Initiative

National Institutes of Health

Grant Program: NIH Identifies Additional Awardees Eligible for PA-12-149 "Research Supplements to Promote Diversity in Health-Related Research (Admin Supp)"
Agency: NIH Notice NOT-OD-15-029; PA 12-149
Brief Description: The purpose of this Notice is to add several new activity codes to the list of eligible awards that may apply for supplements through PA-12-149 "Research Supplements to Promote Diversity in Health-Related Research". These additional activity codes are: P2C, PM1, R21/R33, RM1, U2C, UG1, UH2/UH3, and UM2.

Grant Program: NIH Identifies Additional Awardees Eligible for PA-12-150 "Research Supplements to Promote Re-Entry into Biomedical and Behavioral Research Careers (Admin Supp)"
Agency: NIH Notice NOT-OD-15-033; PA 12-150
Brief Description: The purpose of this Notice is to add several new activity codes to the list of eligible awards that may apply for supplements through PA-12-150 "Research Supplements to Promote Re-Entry into Biomedical and Behavioral Research Careers". These additional activity codes are: P2C, PM1, R21/R33, RM1, U2C, UG1, UH2/UH3, and UM2.
Notice to Watch Program Announcement

Grant Program: Notice of Intent to Publish a Funding Opportunity Announcement for BRAIN: Research Opportunities Using Invasive Neural Recording and Stimulating Technologies in the Human Brain (U01)

Agency: NIH RFA-NS-15-005

National Institute of Neurological Disorders and Stroke (NINDS)
National Eye Institute (NEI)
National Institute on Aging (NIA)
National Institute on Alcohol Abuse and Alcoholism (NIAAA)
National Institute of Biomedical Imaging and Bioengineering (NIBIB)
Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD)
National Institute on Deafness and Other Communication Disorders (NIDCD)
National Institute on Drug Abuse (NIDA)
National Institute of Mental Health (NIMH)
National Center for Complementary and Alternative Medicine (NCCAM)


**Brief Description:** The NIH BRAIN initiative (Brain Research through Advancing Innovative Neurotechnologies) intends to promote a new initiative by publishing a Funding Opportunity Announcement (FOA) to solicit applications for research on Research Opportunities Using Invasive Neural Recording and Stimulating Technologies in the Human Brain.

This Notice is being provided to allow potential applicants sufficient time to develop meaningful collaborations for responsive projects.

The FOA is expected to be published in January 2015 with an expected application due date in Spring 2015.

This FOA will utilize the U01 activity code for an award with a 3 year project period.

Details of the planned FOA are provided below.

Human studies using invasive technology to record or modulate neural circuits require extensive planning and expense. As a result, these studies are often constrained by a limited number of patients and resources available to implement complex experimental protocols and are rarely aggregated in a matter sufficient to address high-impact neuroscience questions with appropriate power. Furthermore, these small scale projects rarely identify or retain additional sources of data beyond their primary endpoints, which could be of high value to the wider scientific community.

With this FOA, the NIH seeks to address these fundamental barriers by supporting planning efforts and exploratory research studies investigating high-impact questions in human neuroscience and disorders of the human nervous system.

Projects should develop multidisciplinary teams to maximize opportunities to conduct neuroscience research arising from invasive surgical procedures that provide the unique ability to record and stimulate neurons within precisely localized brain structures in humans. Integrated teams should consist of clinicians, scientists, device engineers, mathematicians, statisticians, data scientists, regulatory specialists and/or ethics specialists. These teams may be assembled within a single
institution, or may be integrated across multiple institutions to answer essential neuroscience questions with appropriate statistical power. Awardees will also join a consortium, coordinated by the NIH, to identify consensus standards of practice as well as supplemental opportunities to collect data for ancillary studies, and to aggregate and standardize data for dissemination among the wider scientific community.

Applications can span the spectrum from experimental studies of mechanisms of human sensory-motor, perceptual, cognitive, mnemonic, affective, and motivational processes, to disorders of the human nervous system, to studies of mechanisms of action of device neuromodulation therapies. Applications should seek to understand circuits of the brain by systematically controlling stimuli while actively recording and manipulating relevant dynamic patterns of neural activity and by measuring the resulting behaviors and/or perceptions. Novel and innovative approaches to theory and analysis frameworks are expected to identify gaps in knowledge, and build testable hypothesis to drive the design of experiments. Applications are expected to employ approaches guided by specified theoretical constructs, and are encouraged to employ quantitative, mechanistic models where appropriate. Applications must propose appropriately-regulated, invasive studies in humans, including intra-operative procedures during therapeutic/diagnostic implantation of devices, and short- and long-term device implantation procedures. A complementary animal component to conduct reverse translation to mechanistic questions, or to perform forward translation of tools and techniques that can only be done in animal models, will be allowed.

In addition to the proposed primary study endpoints, applications should propose to solicit input from the larger community to identify and prioritize additional sources of data that could be obtained to maximize the value of these limited opportunities, as well as generate consensus on best practices and common data standards for data access and data sharing (including collection, curation, analysis and sharing).

**Grant Program: Use of 3-D Printers for the Production of Medical Devices (R43/R44) and (R41/R42)**

**Agency:** NIH R43/R44 Small Business Innovation Research (SBIR) Grant - Phase I and Fast-Track

R41/R42 Small Business Technology Transfer (STTR) Grant - Phase I and Fast-Track


**Brief Description:** This funding opportunity announcement (FOA) invites Small Business Innovation Research (SBIR) grant applications from small business concerns (SBCs) to propose research to support research to develop 3D printers, polymers, and process specifications to produce premature- and neonatal-specific devices for external use or short-term insertion and implantation into the human body.
Medical devices for premature infants and neonates are often not available in appropriate sizes. As a result, pediatric-sized devices have to be used and the sizing mismatch sometimes leads to deleterious consequences. Medical device companies find it difficult economically to produce the small quantities of devices for this patient population.

3D printing provides a potential solution to this problem as they can produce mechanically complex, patient-matched components with short lead times. Research is currently underway to create commercially viable printers capable of producing bioresorbable scaffolds with implanted stem cells for construction of new tissues and organs. However, no companies are currently supplying 3D printers and materials that can produce flexible implantable medical devices. If such systems were available, health care providers could provide better care to premature infant and neonatal patients.

**Letter of Intent Due:** January 10, 2015

**Awards:** Standard Awards: According to statutory guidelines, total funding support (direct costs, indirect costs, fee) normally may not exceed $150,000 for Phase I awards and $1,000,000 for Phase II awards. With appropriate justification from the applicant, Congress will allow awards to exceed these amounts by up to 50% ($225,000 for Phase I and $1,500,000 for Phase II). Applications above these capped levels will be considered unresponsive and may be returned without review.

**Deadline:** February 10, 2015, 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.

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**National Science Foundation**

**Grant Program:** Science of Learning: Collaborative Networks (SL-CN)

**Agency:** NSF 15-532

**RFP Website:**

**Brief Description:** This solicitation launches the National Science Foundation’s (NSF’s) next phase of research in the Science of Learning (SL). The new SL Program is designed to capitalize on the momentum created by the Science of Learning Centers (SLC) Program to continue developing an integrated, interdisciplinary SL community. The goals of the SL Program are to: advance fundamental knowledge about learning through integrated research; connect the research to specific scientific, technological, educational, and workforce challenges; and enable research communities to capitalize on new opportunities and discoveries. The Program is designed to support projects that – due to the activities supported and their interdisciplinarity and integrative breadth – do not fit into existing NSF programs.
This solicitation invites proposals for the creation of new research networks to address important questions in the SL. Networks will focus on:

- Advancing basic research through integrative, interdisciplinary perspectives and methodologies, through integration of theory and experiment, and across scales of analysis; and/or
- Translating findings from basic research on learning to applications to benefit society and further inform fundamental theories of learning.

Each network is expected to engage in both of the following activities:

- Partnership-building activities among the network participants to optimize scientific exchange for the co-design and execution of network goals; and
- Collaborative, exploratory research to be conducted by the network participants.

**Awards:** Standard Awards: Up to $9.0 million is expected to be available in Fiscal Year (FY) 2015. Contingent on the availability of funds and receipt of competitive proposals, NSF expects to make 12 awards under this solicitation. Awards are expected to be up to three years in duration with a maximum award size of $750,000 total costs over the full duration of the project.

**Letter of Intent: Required:** February 6, 2015

**Deadline: Full Proposal Deadline(s) (due by 5 p.m. proposer's local time):** March 18, 2015

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**Grant Program:** Cyberlearning and Future Learning Technologies

**Agency:** National Science Foundation PD-14-526


**Brief Description:** The purpose of the *Cyberlearning and Future Learning Technologies* program is to integrate opportunities offered by emerging technologies with advances in what is known about how people learn to advance three interconnected thrusts:

- **Innovation:** inventing and improving next-generation genres (types) of learning technologies, identifying new means of using technology for fostering and assessing learning, and proposing new ways of integrating learning technologies with each other and into learning environments to foster and assess learning;

- **Advancing understanding of how people learn in technology-rich learning environments:** enhancing understanding of how people learn and how to better foster and assess learning, especially in technology-rich learning environments that offer new opportunities for learning and through data collection and computational modeling of learners and groups of learners that can be done only in such environments; and

- **Promoting broad use and transferability of new genres:** extracting lessons from experiences with these technologies that can inform design and use of new genres across disciplines, populations, and learning environments; advancing understanding of how to foster learning through
effective use these new technologies and the environments they are integrated into.
The intention of this program is to advance technologies that specifically focus on the experiences of learners; innovations that simply focus on making teaching easier will not be funded. Proposals that focus on teachers or facilitators as learners are invited; the aim in these proposals should be to help teachers and facilitators learn to make the learning experiences of learners more effective.
Proposals are expected to address all three of the program's thrusts. Of particular interest are technological advances that (1) foster deep understanding of content coordinated with masterful learning of practices and skills; (2) draw in and encourage learning among populations not served well by current educational practices; and/or (3) provide new ways of assessing understanding, engagement, and capabilities of learners. It is expected that research funded by this program will shed light on how technology can enable new forms of educational practice. This program does not support proposals that aim simply to implement and evaluate a particular software application or technology in support of a specific course.
Awards will be made in three research categories, each focusing on a different stage of research and development: Exploration (EXP), Design and Implementation (DIP), and Integration (INT). The program will also support small Capacity-Building Projects (CAP), e.g., conferences, workshops, and partnership-building activities, and will continue to participate in NSF’s Foundation-Wide programs: EAGER, RAPID, INSPIRE, and CAREER.

Awards: Various

Deadlines:
Full Proposal Deadline Date: January 19, 2015
Development and Implementation (DIPs)
Third Monday in January, Annually Thereafter
Full Proposal Target Date: March 27, 2015
Capacity-Building Projects (CAPs)
Last Friday in March, Annually Thereafter
Letter of Intent Deadline Date: May 11, 2015
Letter of Intent: Integration (INT) Projects only
Second Monday in May, Annually Thereafter
Full Proposal Deadline Date: July 13, 2015
Integration Projects (INTs)
Second Monday in July, Annually Thereafter
Full Proposal Target Date: July 31, 2015
Capacity-Building Projects (CAPs)
Last Friday in July, Annually Thereafter
Full Proposal Deadline Date: December 7, 2015
Capacity-Building Projects (CAPs)
First Monday in December, Annually Thereafter
Full Proposal Deadline Date: December 18, 2015
Exploration Projects (EXPs)
Third Friday in December, Annually Thereafter
Grant Program: Decision, Risk and Management Sciences (DRMS)
Agency: NSF PD 98-1321
RFP Website: http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5423&WT.mc_id=USNSF_39
&WT.mc_ev=click
Brief Description: The Decision, Risk and Management Sciences program supports scientific research directed at increasing the understanding and effectiveness of decision making by individuals, groups, organizations, and society. Disciplinary and interdisciplinary research, doctoral dissertation research improvement grants (ddrigs), and workshops are funded in the areas of judgment and decision making; decision analysis and decision aids; risk analysis, perception, and communication; societal and public policy decision making; management science and organizational design. The program also supports small grants that are time-critical (Rapid Response Research - RAPID) and small grants that are high-risk and of a potentially transformative nature (EARly-Concept Grants for Exploratory Research - EAGER). For detailed information concerning these two types of grants, please review Chapter II.D of the NSF Grant Proposal Guide.
Funded research must be grounded in theory and generalizable. Purely algorithmic management science proposals should be submitted to the Operations Research Program rather than to DRMS.
General Guidance concerning the DRMS Doctoral Dissertation Research Improvement Grants (DDRIGs) funding opportunity includes the following:

- The advisor of the doctoral student is strongly encouraged to contact one of the DRMS Program Directors by e-mail prior to the preparation of the DDRIG proposal.
- DRMS DDRIG awards have a recommended maximum duration of 12 months.
- The proposal title should start with "Doctoral Dissertation Research in DRMS:"
- On the FastLane Cover Sheet, the advisor should be listed as the Principal Investigator (PI) and the doctoral dissertation student as the Co-PI.
- DDRIG awards are designed to cover expenses such as travel, special equipment, and participation fees.
- DRMS does not provide general stipends or cost-of-living support for DDRIG awards.
- Your DDRIG proposal's project description should be essentially a research design (statement of the research problem, literature review, hypotheses, research site, data to be collected, methods of analysis, and schedule).
- The review process for DDRIG proposals may involve only mail reviews, or it may include both mail reviews and assessment by the DRMS advisory panel.
- Outstanding DDRIG proposals specify how the knowledge to be created advances our theoretical understanding of the subject.

For additional funding opportunities, we invite you to also look at the SBE Office of Multidisciplinary Activities (SMA) web site
Awards: Standard Awards
Letter of Intent: Not required
Deadline: Full Proposal Deadline(s) (due by 5 p.m. proposer's local time):
Full Proposal Target Date: January 18, 2015
January 18, Annually Thereafter
January 18, Annually Thereafter
Full Proposal Target Date: August 18, 2015
August 18, Annually Thereafter

Grant Program: Critical Resilient Interdependent Infrastructure Systems and Processes (CRISP)
Agency: NSF 15-531

Brief Description: Critical infrastructures are the mainstay of our nation's economy, security and health. These infrastructures are interdependent. For example, the electrical power system depends on the delivery of fuels to power generating stations through transportation services, the production of those fuels depends in turn on the use of electrical power, and those fuels are needed by the transportation services.

The goals of the Critical Resilient Interdependent Infrastructure Processes and Systems (CRISP) solicitation are to: (1) foster an interdisciplinary research community of engineers, computer and computational scientists and social and behavioral scientists, that creates new approaches and engineering solutions for the design and operation of infrastructures as processes and services; (2) enhance the understanding and design of interdependent critical infrastructure systems (ICIs) and processes that provide essential goods and services despite disruptions and failures from any cause, natural, technological, or malicious; (3) create the knowledge for innovation in ICIs so that they safely, securely, and effectively expand the range of goods and services they enable; and (4) improve the effectiveness and efficiency with which they deliver existing goods and services. These goals lead to the following specific objectives for this solicitation:

- To create new knowledge, approaches, and engineering solutions to increase resilience, performance, and readiness in ICIs.
- To create theoretical frameworks and multidisciplinary models of ICIs, processes and services, capable of analytical prediction of complex behaviors, in response to system and policy changes.
- To develop frameworks to understand interdependencies created by the interactions between the physical, the cyber (computing, information, computational, sensing and communication), and social, behavioral and
economic (SBE) elements of ICIs. These could include, but are not limited to, approaches for: better physical design of ICIs and their placement; the use of new materials; software frameworks for better integration of the software and computing systems embedded in ICIs; software frameworks for modeling and simulation, management, monitoring and control of interdependent ICIs; and novel software engineering methodologies.

- To understand organizational, social, psychological, legal, and economic obstacles to improving ICIs, and identifying strategies for overcoming those obstacles.

The CRISP solicitation seeks proposals with transformative ideas that will ensure ICI services are effective, efficient, dependable, adaptable, resilient, safe, and secure. Successful proposals are expected to study multiple infrastructures focusing on them as interdependent systems that deliver services, enabling a new interdisciplinary paradigm in infrastructure research. To meet the interdisciplinary criterion, proposals must broadly integrate across engineering, computer, information and computational science, and the social, behavioral and economic (SBE) sciences. **Proposals that do not meet this criterion may be returned without review.** Projects supported under this solicitation may undertake the collection of new data or use existing curated data depending on the category of award, and must recognize that a primary objective is integrative, predictive modeling that can use the data to validate the models and that can be integrated into decision making.

**Awards:** Two categories of awards are anticipated for this solicitation: Type 1 and Type 2. The number of awards in each category will be dependent on the overall mix of proposals and the degree to which they meet the solicitation goals, Merit Review Criteria and Solicitation Specific Review Criteria. We anticipate up to approximately 15 Type 1 awards and up to approximately 10 Type 2 awards.

**Anticipated Funding Amount:** $20,000,000

Type 1 Awards: Projects will be of 3 years in duration with a maximum total budget of $500,000.

Type 2 Awards: Projects will be of 3-4 years in duration with a total budget ranging from $1 million to $2.5 million.

**Letter of Intent:** Not required

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

Full Proposal Due: March 20, 2015

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**Grant Program:** Campus Cyberinfrastructure - Data, Networking, and Innovation Program (CC*DNI)

**Agency:** NSF 15-534


**Brief Description:** The Campus Cyberinfrastructure - Data, Networking, and Innovation (CC*DNI) program invests in campus-level data and networking infrastructure and integration activities tied to achieving higher levels of performance, reliability and predictability for science applications and distributed research projects. Science-driven requirements are the primary motivation for any proposed activity.
Awards:
CC*DNI awards will be made in seven areas:

- Data Infrastructure Building Blocks (DIBBs) - Multi-Campus/Multi-Institution Model Implementations awards will be supported at up to $5,000,000 total for up to 5 years.
- Data Driven Networking Infrastructure for the Campus and Researcher awards will be supported at up to $500,000 total for up to 2 years.
- Network Design and Implementation for Small Institutions awards will be supported at up to $350,000 total for up to 2 years.
- Network Integration and Applied Innovation awards will be supported at up to $1,000,000 total for up to 2 years.
- Campus CI Engineer awards will be made at up to $400,000 total for up to 2 years.
- Regional Coordination and Partnership in Advanced Networking awards will be made at up to $150,000,000 for up to 2 years.
- Instrument Networking awards will be supported at up to $400,000 for up to two years.

Letter of Intent: Not required
Deadline: Full Proposal March 24, 2015

National Endowment for the Humanities

Grant Program: Digital Humanities Implementation Grants
Agency: National Endowment for the Humanities
RFP Website: http://www.neh.gov/grants/odh/digital-humanities-implementation-grants

Brief Description:
This program is designed to fund the implementation of innovative digital-humanities projects that have successfully completed a start-up phase and demonstrated their value to the field. Such projects might enhance our understanding of central problems in the humanities, raise new questions in the humanities, or develop new digital applications and approaches for use in the humanities. The program can support innovative digital-humanities projects that address multiple audiences, including scholars, teachers, librarians, and the public. Applications from recipients of NEH¿s Digital Humanities Start-Up Grants are welcome. Unlike NEH¿s start-up grant program, which emphasizes basic research, prototyping, experimentation, and potential impact, the Digital Humanities Implementation Grants program seeks to identify projects that have successfully completed their start-up phase and are well positioned to have a major impact.

Proposals are welcome for digital initiatives in any area of the humanities. Digital Humanities Implementation Grants may involve
• research that brings new approaches or documents best practices in the study of the digital humanities;
• implementation of computationally-based methods or techniques for humanities research;
• implementation of new digital tools for use in humanities research, public programming, or educational settings;
• efforts to ensure the completion and long-term sustainability of existing digital resources (typically in conjunction with a library or archive);
• scholarship that examines the history, criticism, and philosophy of digital culture and its impact on society;
• scholarship or studies that examine the philosophical or practical implications of the use of emerging technologies in specific fields or disciplines of the humanities, or in interdisciplinary collaborations involving several fields or disciplines; or
• implementation of new digital modes of scholarly communication that facilitate peer review, collaboration, or the dissemination of humanities scholarship for various audiences.

Awards: Up to $325,000
Deadline: February 18, 2015 for Projects Beginning September 2015

National Institute of Justice

Grant Program: Graduate Research Fellowship in Science, Technology, Engineering, and Mathematics
Agency: National Institute of Justice; OMB No. 1121-0329
RFP Website: https://www.ncjrs.gov/pdffiles1/nij/sl001141.pdf
Brief Description: The U.S. Department of Justice (DOJ), Office of Justice Programs (OJP), National Institute of Justice (NIJ) is seeking applications for funding innovative doctoral dissertation research in science, technology, engineering, or mathematics that is relevant to providing solutions to better ensure public safety, prevent and control crime, and ensure the fair and impartial administration of criminal justice in the United States. This program furthers the Department’s mission by sponsoring research to provide objective, independent, evidence-based knowledge and tools to meet the challenges of crime and justice, particularly at the State and local levels.

Eligible applicants are limited to degree-granting academic institutions in the United States and its territories. To be eligible, the institution must be fully accredited by one of the regional institutional accreditation agencies recognized by the U.S. Secretary of Education. Under this solicitation, the applicant institution must apply as the sponsoring institution for the doctoral candidate conducting criminal justice-related research in a discipline relevant to NIJ’s mission.
NJJ may elect to make awards for applications submitted under this solicitation in future fiscal years, dependent on the merit of the applications and on the availability of appropriations.

**Awards:** Each fellowship potentially consists of three years of support usable over a five-year period, pending, among other factors, the availability of funding, strategic priorities, NJJ’s assessment of the quality of the management of the award (for example, timeliness and quality of progress reports), and NJJ’s assessment of the progress of the work funded under the award.

Each year of support includes up to a $35,000 allowance usable toward a salary/stipend for the student and related costs, and up to $15,000 to cover the student’s tuition and fees, research expenses, and related costs. The $35,000 allowance for salary/stipend and related costs may include fringe benefits (if applicable) and health insurance, at the applicant institution’s discretion. Under this solicitation, research expenses and related costs may include any combination of the doctoral student’s tuition, student fees, project costs, professional society membership fees, or conference travel, among other allowed expenses during the award period.

**Deadline:** March 30, 2015

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**Department of Energy: Advanced Research Projects Agency Energy**

**Grant Program:** Call for Partnership Concept Papers for the Partnering to Accelerate Entrepreneurship (PACE) Initiative: MOSIAC

**Agency:** Department of Energy Advanced Research Projects Agency Energy

DE-FOA-0001255 and

DE-FOA-0001256 (MOSIAC SBIR/STTR)


**Brief Description:** The MOSAIC (Micro-scale Optimized Solar-cell Arrays with Integrated Concentration) Program will fund potentially disruptive technologies and related system concepts to achieve new performance and cost benchmarks for solar-electric generation from photovoltaics (PV). Specifically, MOSAIC will develop novel concepts that integrate arrays of high-performance micro-scale concentrated PV (micro-CPV) elements into modules that are similar in profile and cost to traditional non-concentrated “flat-plate” (FP) PV, but achieve the performance level associated with conventional Concentrated Photovoltaics (CPV). Realization of the aggressive targets of MOSAIC will require the formation of R&D teams from several communities, including material scientists, electrical and packaging engineers, optical engineers, micro-scale manufacturing specialists, and researchers in polymers and opto-electronics.

**Awards:** Up to $3,250,000

**Deadline:** Concept Paper Submission Deadline: 1/22/2015 5:00 PM ET
Full Application Submission Deadline: TBD