

NJIT Research Newsletter

Issue: ORN-2016-04

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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: Louis Lanzerotti (PI)

Department: Physics

Grant/Contract Project Title: Radiation Belt Storm Probes Science Investigations (RBSPICE)

Funding Agency: NASA

Duration: 01/01/09-05/31/16

PI: Chang Liu (PI), Haimin Wang (Co-PI), Yan Xu (Co-PI)

Department: Physics

Grant/Contract Project Title: Data Services Upgrade: Improving the Digitized Full-disk BBSO
H-alpha Data

Funding Agency: NASA

Duration: 01/15/16-01/14/17

PI: Michel Boufadel (PI)

Department: Natural Resource

Grant/Contract Project Title: The Consortium for Advanced Research on Transport of
Hydrocarbon in the Environment (CARTHE)II

Funding Agency: Gulf of Mexico Research Initiative

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

Events and Announcements

Event: NJIT President's Forum and 2016 Faculty Research Showcase

When: February 22, 2016: 10.00 AM – 3.00 PM

Where: President's Forum and Keynote Address: Atrium, Campus Center
Faculty Research Presentations and Poster Session: Ballroom A

President's Forum Speaker: Michael, Doyle, Founding Chairman and CTO, Eolas Technologies; Founder and Chairman, National Museum of Health and Medicine; Founder and Chairman, CodeAbode

Title of the Talk: Treading Water in the Digital Ocean: Diving-In Over the Head Can Sometimes Lead to Surfing the Big Waves

Biographical Sketch of the Speaker: Dr. Michael Doyle is the Chairman and CTO of Eolas Technologies Inc., and is the founder and Chairman of the National Museum of Health and Medicine Chicago. He is an active angel investor and co-founder in several Chicago-area tech startups, and is the founder of CodeAbode, the nation's first code bootcamp focused in the areas of health, medicine and fitness.

Prior to founding Eolas in 1994, Dr. Doyle served as Director for the Center for Knowledge Management at the University of California, San Francisco. While at UCSF Medical Center, in 1993, Dr. Doyle led the research team that invented the fundamental web technologies which enabled Web browsers for the first time to act as platforms for fully-interactive remotely-distributed applications, in the process pioneering the revolutionary Web technologies today known as streaming media and cloud computing. Dr. Doyle successfully guided Eolas through the development of several key technologies in use throughout the Internet. Dr. Doyle's seminal research in next-generation Web applications, hypermedia navigation, mobile telecommunications, 3-D biomedical visualization, and morpho-spatial genomic activity mapping has led to advances that have gained worldwide recognition. His invention of the field of transient-key cryptography led to the technology which comprises the x9.95 ANSI National Standard for secure timestamps, and forms the basis for the revolutionary new eCheck system from Deluxe Check Company.

From 2000-2004, Dr. Doyle served as Chief Scientist on the Visible Embryo Project Next Generation Internet Project, a contract from the National Institutes of Health funding development of new kinds of applications that would work with powerful computers over high-speed networks. As part of this project, the University team reconstructed over 30 embryos from the Carnegie Collection and made them available on computers at the San Diego Supercomputer Center at the University of California San Diego, enabling scientists at Johns Hopkins University to compare the reconstructed Carnegie Collection data to 3D ultrasounds to detect birth defects and plan intrauterine surgeries to correct them. In 2012, Dr. Doyle led the development of the Eolas vScope interactive cloud-based streaming virtual microscope system, and its adaptation to create the first neuroanatomical atlas of Albert Einstein's brain as the Einstein Brain Atlas app in Apple's iPad app store, which received worldwide press coverage, including coverage on the Today Show and Good Morning America.

Dr. Doyle currently serves on the Board of Trustees of Beloit College, and the Advisory Council of the UIC College of Applied Health Sciences. He was the 2013 recipient of the UIC AHS Distinguished Alumni Achievement Award, and is a member of ACM, IEEE, Sigma Xi, Phi Kappa Phi, Mensa, the Triple Nine Society, and the Ultranet. He is an active philanthropist, supporting a variety of charitable causes in the sciences and the arts both personally and through his family foundation, the Buonacorsi Foundation.

Event Description: The 2016 NJIT Faculty Research Showcase will start with the President's Forum with the Keynote Address by Dr. Michael Doyle. The showcase will introduce new NJIT faculty who have joined us in academic year 2015-16 with brief presentations on their research work. New faculty presentations will be followed by the electronic posters and networking session featuring research projects with recipients of the 2015 NJIT Faculty Seed Grants. Faculty, staff and students are welcome to join us at this interdisciplinary networking event to learn about exciting ongoing research projects, and explore future collaborative opportunities.

NSF Announcement

Meeting NSF's Technical Reporting Requirements

THE PROJECT REPORTING SYSTEM FOR THE NATIONAL SCIENCE FOUNDATION

PIs must use [Research.gov](https://www.research.gov) to meet all NSF technical reporting requirements, including submission of annual, final, and project outcomes reports.

What is Required?

NSF requires that all Principal Investigators (PIs) submit annual reports during the course of an award and a final report no later than 120 days following expiration of an award. Each report is reviewed by the award's managing Program Officer; the reporting requirement is met only after the Program Officer has reviewed and approved the report. NSF also requires that PIs submit a non-technical, Project Outcomes Report (POR), for the general public 120 days following expiration of an award. This report is submitted and posted on the Research.gov website exactly as submitted, without review by a Program Officer. Its intended audience includes the general public, journalists, Congress and its staffers.

When is a Report "due"? When is a Report "overdue?"

The annual report is due *no later than* the 90 day period *before* the end of the current budget period for the award; it is overdue the day after that 90 day period ends. The final report is due *no later than* 120 days *following* expiration of the award; it is overdue after that 120 day period ends. The POR follows the same policies governing Final Reports. Overdue reports will prevent the release of continuing grant increments (CGI), approval of No-cost Extensions, and the awarding of additional funding to the PI and *all* co-PIs listed on the award that has the overdue report.

What is an Interim Report?

An interim report may be submitted at any time during the life of the award to update NSF on what the grant has accomplished. Interim reports do not fulfill the reporting requirements, and most grantees do not need to submit them. If you have a "continuing grant," with increments released annually, an interim report **will not** release the next increment. For that, you must submit your annual report and have it approved by the managing Program Officer.

Does a "no cost extension" affect the reporting requirements?

A "no cost extension" adds time to an award, but does not relieve the awardee of reporting requirements. Annual reports are still due every 12 months. When the award finally does expire, the final report and project outcomes report are both due within 120 days.

How do I know what to put in my Report?

The Project Reporting module in Research.gov can be accessed only by the PI and co-PIs of an award. The module is organized with tabs for each of the components of your report: Accomplishments, Products, Participants, Impact, Changes/Problems, and Special Requirements. The template also allows you to attach PDF documents for images, charts and other supplemental materials; PDF attachments are *not permitted* for the narrative content of the report. Note that annual and final progress reports are

not cumulative and should be limited to accomplishments, products, etc. from the current reporting period. A "Getting Started Guide" for creating (and editing) annual and final reports is available at: http://www.research.gov/common/attachment/Desktop/ProjectReportGettingStartedGuide_general.pdf. (The reporting module can also be used to submit interim reports.) PIs should enter reporting details under each of the tabs in the Report Content section of the module. Under the Accomplishments tab you will be prompted to enter information about your project (including project goals, major activities, specific objectives, significant results, and key outcomes). For each publication that you list in the Products section, you must indicate whether you acknowledged NSF support in the product and whether it was peer reviewed. (Do not include publications that are outside the scope of NSF's support for the project.) Your report should discuss your broader impact activities such as outreach and mentoring under the Impacts tab. You should also describe actions taken during the reporting period to bring your proposal's Data Management and Postdoctoral Mentoring Plans to completion. Program Officers will also check the Changes/Problems section to see if you discussed deviations from the original research plan and how you handled any issues that arose with human subjects or vertebrate animals. Proposals submitted to solicitations may be subject to additional reporting requirements. The Project Outcomes Report serves as a brief summary (200-800 words), prepared specifically for the public, of the nature and outcomes of the project. This report should describe the project outcomes or findings that address the intellectual merit and broader impacts of the work as defined in the NSF merit review criteria. The POR should also contain information about products that have resulted from the award such as collections, data sets, software and educational materials. However, the POR does not need to include a list of publications resulting from the award because NSF automatically imports the citations that you provided as part of your annual and final project reports into Research.gov's Research Spending and Results.

What if my project was funded as part of a Collaborative?

Some projects are funded as multi-institutional Collaborative proposals, with awards made to the separate institutions. The PI at each institution must submit independent annual and final reports. These may be coordinated and share common text where appropriate (such as in the Accomplishments section), but they also should identify participants, activities, and findings unique to each PI's part of the NSF supported research.

What if my project was funded as a CAREER award?

The CAREER Program is committed to promoting the role of teacher-scholars. As stated in the program solicitation under Reporting Requirements, the annual and final reports must summarize progress in *both* research and education, and indicate how well these activities are being integrated and assessed. You should include this information under the Special Reporting Requirements tab.

What if my award was for a workshop?

The PI is responsible for the report. The Accomplishments section should include: (1) a description of participant selection; (2) a list of persons for whom travel funds were provided (including institutional affiliation and sum awarded); and (3) information about the meeting-including attendance, total number of U.S. participants, and other countries represented, highlights of the program and its outcomes and products.

What if I have other questions?

The *Award and Administration Guide* (Ch. II: Grant Administration) has more details on reporting requirements (http://www.nsf.gov/publications/pub_summ.jsp?ods_key=aag). Frequently asked questions about the project outcomes report for the general public can be found on the Policy Office website (http://www.nsf.gov/publications/pub_summ.jsp?ods_key=porfags). Workshop reporting requirements are described in FL 26 (http://www.nsf.gov/pubs/policydocs/fl26/fl26_113.pdf). And, as always, you are encouraged to contact your Program Officer.

Grant Opportunity Alerts

Keywords and Areas Included in Grant Opportunity Alerts:

NSF: Analysis, Updates: Presidential Awards for Excellence in Science, Mathematics and Engineering Mentoring; Ideas Lab: Cybersecurity Innovation for Cyberinfrastructure (CICI); Software Infrastructure for Sustained Innovation (SI2: SSE & SSI)

NIH: The Neural Mechanisms of Multi-Dimensional Emotional and Social Representation (R01); Initiative to Maximize Research Education in Genomics: Courses for Skills Development (R25); Imaging and Biomarkers for Early Detection of Aggressive Cancer (U01)

Department of Defense/US Army/DARPA/ONR: Engineering Research Center, Neural Engineering System Design (NESD); Minerva Research Initiative

Department of Energy: 2016 Vehicle Technologies Program Wide Funding Opportunity Announcement

National Endowment of Arts: 2017 National Heritage Fellowship Awards Program

The Esther A. & Joseph Klingenstein Fund and the Simons Foundation: The Klingenstein-Simons Fellowship Awards

Grant Opportunities

National Science Foundation

Grant Program: Analysis

Agency: National Science Foundation NSF PD: 16-1281

RFP Website: <http://www.nsf.gov/pubs/2016/nsf16533/nsf16533.htm>

Brief Description: The Analysis Program supports basic research in that area of mathematics whose roots can be traced to the calculus of Newton and Leibniz. Given its centuries-old ties to physics, analysis has influenced developments from Newton's mechanics to quantum mechanics and from Fourier's study of heat conduction to Maxwell's equations of electromagnetism to Witten's theory of supersymmetry. More generally, research supported by Analysis provides the theoretical underpinning for the majority of applications of the mathematical sciences to other scientific disciplines. Current areas of significant activity include: nonlinear partial differential equations; dynamical systems and ergodic theory; real, complex and harmonic analysis; operator theory and algebras of operators on Hilbert space; mathematical physics; and representation theory of Lie groups/algebras. Emerging areas include random matrix theory

and its ties to classical analysis, number theory, quantum mechanics, and coding theory; and development of noncommutative geometry with its applications to modeling physical phenomena. It should be stressed, however, that the underlying role of the Analysis Program is to provide support for research in mathematics at the most fundamental level. Although this is often done with the expectation that the research will generate a payoff in applications at some point down the road, the principal mission of the Program is to tend and replenish an important reservoir of mathematical knowledge, maintaining it as a dependable resource to be drawn upon by engineers, life and physical scientists, and other mathematical scientists, as need arises.

Conferences

Principal Investigators should carefully read the program solicitation "Conferences and Workshops in the Mathematical Sciences" (link below) to obtain important information regarding the substance of "conference proposals" (i.e., proposals for conferences, workshops, summer/winter schools, and similar activities). For Analysis conference proposals with budgets not exceeding \$50,000, which in accordance with NSF policy can be reviewed internally at NSF, the following target dates are in effect: for an event that will take place at some time prior to October 1 during a given year, the proposal should be submitted at the Analysis Program's normal target date in the previous year; for an event that will occur in the period October 1 through December 31 of a given year, the proposal should be submitted between May 1 and June 1 of that year. An Analysis conference proposal with a budget request exceeding \$50,000 should be submitted roughly seven months before the event is scheduled to take place, in order to allow time for external review.

Awards: Standard Grants. For full proposals submitted via FastLane: standard [Grant Proposal Guide](#) proposal preparation guidelines apply

Letter of Intent: Not Required

Full Proposal Deadlines: October 4, 2016

Contacts:

- Bruce Palka, bpalka@nsf.gov (703) 292-4856
- Bruce Kitchens, bkitchen@nsf.gov (703) 292-2599
- Edward Taylor, etaylor@nsf.gov (703) 292-4872

Grant Program: Presidential Awards for Excellence in Science, Mathematics and Engineering Mentoring

Agency: National Science Foundation NSF 16-534

RFP Website: <http://www.nsf.gov/pubs/2016/nsf16534/nsf16534.htm>

Brief Description: The Presidential Awards for Excellence in Science, Mathematics and Engineering Mentoring (PAESMEM) is a Presidential award established by the White House in 1995. The PAESMEM program is administered by the National Science Foundation (NSF) on behalf of the White House Office of Science and Technology Policy (OSTP).

Nominations, including self-nominations, are invited for "Individual" and "Organizational" PAESMEM awards. Individuals and organizations in all public and private sectors are eligible including industry, academia, K-12, military and government, non-profit organizations, and foundations. Exceptional STEM or STEM-related mentoring in both formal and/or informal settings is eligible for the PAESMEM award.

Nominations are encouraged from all geographical regions in the U.S. including its territories and particularly jurisdictions designated by Congress under NSF's Experimental Program to Stimulate Competitive Research (EPSCoR). NSF EPSCoR-designated jurisdictions are: Alabama, Alaska, Arkansas, Delaware, Guam, Hawaii, Idaho, Kansas, Kentucky, Louisiana, Maine, Mississippi, Montana, Nebraska, Nevada, New Hampshire, New Mexico, North Dakota,

Oklahoma, Puerto Rico, Rhode Island, South Carolina, South Dakota, Vermont, Virgin Islands, West Virginia, and Wyoming. Nominations from the U.S. Territories are particularly encouraged. Each "Individual" or "Organizational" PAESMEM awardee will receive a \$10,000 award and a commemorative Presidential certificate. Awardees are also invited to participate in an award recognition ceremony in Washington, DC that includes meetings with STEM educators, researchers and policy leaders. Up to 16 awards may be made from the nominations received on or before June 17, 2016.

Awards: Approximately 16 nominees total from both categories will be recommended to the White House for award recognition from the 2016-2017 competition. These awardees will represent the 2017 cohort of PAESMEM awardees. Anticipated Funding Amount: \$160,000.

Letter of Intent: Not Required

Full Proposal Submission Window: January 25, 2016 - June 17, 2016

Contacts:

- Martha L. James, Program Officer, Division of Human Resource Development, 815, telephone: (703) 292-7772, fax: (703) 292-9019, email: mjames@nsf.gov
- Nafeesa Owens, Program Officer, Division of Human Resource Development, 815, telephone: (703) 292-5120, fax: (703) 292-9019, email: nowens@nsf.gov
- Nicole Gass, Program Specialist, Division of Human Resource Development, 815, telephone: 703-292-8378, fax: 703-292-9019, email: ngodwin@nsf.gov

Grant Program: Ideas Lab: Cybersecurity Innovation for Cyberinfrastructure (CICI)

Agency: National Science Foundation NSF 16-533

RFP Website: <http://www.nsf.gov/pubs/2016/nsf16533/nsf16533.htm>

Brief Description: Advancements in data-driven scientific research depend on trustworthy and reliable cyberinfrastructure. Researchers rely on a variety of networked technologies and software tools to achieve their scientific goals. These may include local or remote instruments, wireless sensors, software programs, operating systems, database servers, high-performance computing, large-scale storage, and other critical infrastructure connected by high-speed networking. This complex, distributed, interconnected global cyberinfrastructure ecosystem presents unique cybersecurity challenges. NSF-funded scientific instruments, sensors and equipment are specialized, highly-visible assets that present attractive targets for both unintentional errors and malicious activity; untrustworthy software or a loss of integrity of the data collected by a scientific instrument may mean corrupt, skewed or incomplete results. Furthermore, often data-driven research, e.g., in the medical field or in the social sciences, requires access to private information, and exposure of such data may cause financial, reputational and/or other damage.

Therefore, an increasing area of focus for NSF is the development and deployment of hardware and software technologies and techniques to protect research cyberinfrastructure across every stage of the scientific workflow.

Awards: Standard Grants. Anticipated available funding: \$7,000,000

Letter of Intent: Required; Deadline: March 01, 2016

Full Proposal Deadlines: April 19, 2016

Contacts: Anita Nikolich, Program Director, CISE/ACI, (703) 292-4551, email: anikolic@nsf.gov

Grant Program: Software Infrastructure for Sustained Innovation (SI2: SSE & SSI)

Agency: National Science Foundation NSF 16-532

RFP Website: <http://www.nsf.gov/pubs/2016/nsf16532/nsf16532.htm>

Brief Description: Software is an integral enabler of computation, experiment and theory and a primary modality for realizing the Cyberinfrastructure Framework for 21st Century Science and Engineering (CIF21) vision, as described in [NSF 10-015](#). Scientific discovery and innovation are advancing along fundamentally new pathways opened by development of increasingly sophisticated software. Software is also directly responsible for increased scientific productivity and significant enhancement of researchers' capabilities. In order to nurture, accelerate and sustain this critical mode of scientific progress, NSF has established the Software Infrastructure for Sustained Innovation (SI²) program, with the overarching goal of transforming innovations in research and education into sustained software resources that are an integral part of the cyberinfrastructure.

The goal of the SI² program is to create a software ecosystem that includes all levels of the software stack and scales from individual or small groups of software innovators to large hubs of software excellence. The program addresses all aspects of cyberinfrastructure, from embedded sensor systems and instruments, to desktops and high-end data and computing systems, to major instruments and facilities. Thus, SI² will continue to nurture the interdisciplinary processes required to support the entire software lifecycle, and will successfully integrate software development and support with innovation and research. Furthermore, it will result in the development of sustainable software communities that transcend scientific and geographical boundaries. SI² envisions vibrant partnerships among academia, government laboratories and industry, including international entities, for the development and stewardship of a sustainable software infrastructure that can enhance productivity and accelerate innovation in science and engineering. Furthermore, SI² recognizes that integrated education activities will play a key role in sustaining the cyberinfrastructure over time and in developing a workforce capable of fully realizing its potential to transform science and engineering.

Awards: Standard Grants

Letter of Intent: Not Required

Full Proposal Deadlines: April 26, 2016 for SSE Proposals; September 19, 2016 for SSI Proposals

Contacts:

- Rajiv Ramnath, Program Director, CISE/ACI, telephone: (703) 292-4776, email: SI2Queries@nsf.gov
- Daniel S. Katz, Program Director, CISE/ACI, telephone: (703) 292-2254, email: SI2Queries@nsf.gov

National Institutes of Health

Grant Program: The Neural Mechanisms of Multi-Dimensional Emotional and Social Representation (R01)

Agency: National Institutes of Health RFA-MH-17-300

RFP Website: <http://grants.nih.gov/grants/guide/rfa-files/RFA-MH-17-300.html>

Brief Description: This FOA encourages research that will support Strategic Objectives 1 and 2 of the NIMH Strategic Plan for Research (http://www.nimh.nih.gov/about/strategic-planning-reports/nimh_strategicplanforresearch_508compliant_corrected_final_149979.pdf) by: 1) identifying neurobiological mechanisms and precise spatio-temporal interactions across brain networks that contribute to emotional and/or social behaviors, 2) determining the normative neurodevelopmental trajectories involved in processing multi-modal emotional and/or social cues, and 3) determining how disruptions in neurodevelopment or dysfunctions in

neurobiological systems contribute to alterations in the emotional and/or social behaviors associated with mental illnesses.

This FOA seeks to stimulate novel research that incorporates behavioral paradigms capable of assessing the integration of multi-dimensional emotional or social information. For example, within and across species, emotional and social cues can occur in multiple modalities. Therefore, this FOA prioritizes experimental designs that include paradigms with more than one modality. Emotional and social experiences are not static: stimuli and contexts vary over time, and social interactions involve give and take between individuals. Therefore, this FOA seeks projects including continuous stimuli and analyses that account for temporal factors. Neurodevelopment and prior experience can affect the interpretation of emotional and social situations. Therefore, investigations of neurodevelopmental trajectories and the relationships between neurodevelopmental dysfunction and deficits in emotional and/or social processing are of particular interest.

To shed light on the neural circuits and systems involved in processing the complex emotional and/or social world, this FOA encourages investigators to extend beyond region-based, modular, static and/or purely sequential models of neurophysiological function. Investigators should consider including analyses that unveil how emotional and/or social representations arise from coordinated and dynamic patterns of neural activity across large scale neural networks. NIMH anticipates that this initiative will spur the use of state-of-the-art approaches to examine complex interactions across brain networks, and determine how precise spatiotemporal patterns of activity give rise to integrated, flexible emotional and/or social percepts, experiences, and actions.

Projects responsive to this FOA must fall within one or more of the following broad areas:

- Examination of the neural circuit interactions required for processing multi-dimensional emotional and/or social cues;
- Measurement and modeling of the neurophysiological temporal dynamics associated with formation, storage, and manipulation of multi-dimensional emotional and/or social representations;
- Investigation of the developmental trajectories of emotional and/or social representations and associated brain networks across childhood and adolescence;
- Studies exploring how dysfunction in these circuits and systems relates to emotional and/or social dimensions of behavior in psychiatric populations (e.g., the Research Domain Criteria project).

Projects utilizing human and/or animal subjects are encouraged. As per [NOT-OD-15-102](#), it is expected that all studies will include both males and females.

Rigor of Data: Translating discoveries into evidence-based treatments is predicated on the existence of strong, well powered, adequately controlled, and replicated data. In addition, the value of such research is greatly enhanced when detailed information is made available about study design, execution, analysis and interpretation. Examples of critical elements are detailed in [NOT-OD-15-103](#).

Awards: Application budgets are limited \$500,000 direct costs, annually.

Letter of Intent: May 3, 2016

Deadline: June 3, 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 application 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.

Grant Program: Initiative to Maximize Research Education in Genomics: Courses for Skills Development (R25)

Agency: National Institutes of Health PAR-16-090

RFP Website: <http://grants.nih.gov/grants/guide/pa-files/PAR-16-090.html>

Brief Description: The National Human Genome Research Institute (NHGRI) invites R25 applications to support short-term, advanced courses that are intended to disseminate, to a larger scientific audience, new techniques, methods, or analyses related to the mission of the NHGRI in three broad areas: genomic sciences; genomic medicine; and the ethical, legal and social implications of genomics.

Genomics has stimulated and continues to stimulate the development of powerful new techniques, methods and analyses, and biomedical research would benefit from the rapid, widespread dissemination of these methods to the larger biomedical research community. Short (a few days to two week) courses have been a very effective means of achieving dissemination. NHGRI has also addressed the many ethical, legal and social implications (ELSI) that have been raised by genomics research. Discussion and dissemination of new and emerging ELSI issues would keep the community updated and alerted to issues that should be anticipated in genomics research involving human participants. Courses designed to cross-train genomic researchers and ELSI scholars are particularly encouraged.

Course offerings should be targeted to individuals in careers at the doctoral level and beyond; are expected to be hosted by academic or research institutions where the staff and faculty have research experience in the proposed area of the course and have experience in training; should include as faculty established investigators or scholars actively working in the area of instruction; and should typically be two weeks or less in length and offered annually. Syllabi, handouts, and videos must be made available and easily assessible to the public electronically.

This initiative is not intended to support the development of an institution's course curriculum that is part of the institution's course offerings for its students. Participation in these courses must be open to students and investigators nation-wide.

Research education programs may complement ongoing research training and education occurring at the applicant institution, but the proposed educational experiences must be distinct from those training and education programs currently receiving Federal support. R25 programs may augment institutional research training programs (e.g., T32, T90) but cannot be used to replace or circumvent Ruth L. Kirschstein National Research Service Award (NRSA) programs.

Awards: For Short-Term Advanced Courses, it is expected that applications will not exceed \$50,000 in direct costs. The cost of posting syllabi, course handouts, etc. on line is included in this cost.

An additional \$5,000 in direct costs may be requested for the specific purpose of video recordings of lectures and/or hands on demonstrations.

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

Deadline: May 25, 2016; September 26, 2016; January 25, 2017; May 25, 2017; September 26, 2017; January 25, 2018; May 25, 2018; September 26, 2018; and January 25, 2019, by 5:00 PM local time of applicant organization. All types of 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: Imaging and Biomarkers for Early Detection of Aggressive Cancer (U01)

Agency: National Institutes of Health PAR-16-089

RFP Website: <http://grants.nih.gov/grants/guide/pa-files/PAR-16-089.html>

Brief Description: The purpose of this Funding Opportunity Announcement (FOA) is to: (i) invite researchers to submit collaborative research project (U01) applications to improve cancer screening, early detection of aggressive cancer, assessment of cancer risk and cancer diagnosis aimed at integrating multi-modality imaging strategies and multiplexed biomarker methodologies into a singular complementary approach, and (ii) establish a Consortium for Imaging and Biomarkers (CIB) to perform collaborative studies, exchange information, share knowledge and leverage common resources. The research will be conducted by individual multi-disciplinary research teams, hereafter called Units. All Units are expected to participate in collaborative activities with other Units within the Consortium.

Overdiagnosis and false positives present significant clinical problems in the prevention, detection and treatment of cancer. Therefore, there is an unmet clinical need to more accurately identify early-stage aggressive cancers and distinguish lesions that are life threatening from those that are not. The specific objective of this FOA is to stimulate and support cancer imaging and biomarker research to develop, optimize, and clinically validate novel methods to:

- Detect aggressive cancers at the earliest stages possible;
- Reduce overdiagnosis;
- Reduce false positive tests; and
- Identify lethal cancers from non-lethal disease.

These goals can be met by a research strategy involving preclinical and clinical investigations to improve early cancer detection and diagnosis where validated cancer biomarkers can be combined with experimental imaging methods, or conversely, where established clinical imaging methods can be combined with experimental biomarkers. It is also possible that experimental imaging and biomarker integration strategies may be combined in such a manner that a clear path to clinical application is maintained. For example, clinically established imaging approaches or validated multiplexed biomarker(s) tests may not be currently available, well defined and suitable for direct incorporation into multi-site validation studies, i.e., experimental imaging combined with experimental biomarker(s) or the development of novel imageable biomarkers. For grant applications involving such a strategy, an established reference standard or gold standard (e.g., histology or immunohistochemistry) is required and should be clearly defined within the grant application in order to perform ongoing or future verification, pre validation and clinical validation studies.

This FOA will utilize the Research Project Cooperative Agreement (U01) mechanism to increase collaborative imaging and biomarker research. Applicants may take advantage of the option to designate multiple Program Directors/Principal Investigators (PDs/Pis), each of whom would contribute unique expertise and scientific insights toward the successful completion of the proposed research..

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

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

Deadline: July 11, 2016; December 14, 2016; July 10, 2017; December 11, 2017; July 10, 2018; December 11, 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.

Department of Defense/US Army/DARPA/ONR

Grant Program: Engineer Research and Development Center

Agency: Department of Defense BAA W912HZ-16-BAA-01

RFP Website:

<https://www.fbo.gov/index?s=opportunity&mode=form&id=19e9ae39c6ecc9aed31bfddd8be9dd82&tab=core&cvview=0>

Brief Description: The U.S. Army Engineer Research and Development Center (ERDC) has issued a Broad Agency Announcement (BAA) for various research and development topic areas. The ERDC consists of the Coastal and Hydraulics Lab (CHL), the Geotechnical and Structures Lab (GSL), the Environmental Lab (EL), and the Information Technology Lab (ITL) in Vicksburg, Mississippi; the Cold Regions Research and Engineering Lab (CRREL) in Hanover, New Hampshire; the Construction Engineering Research Lab (CERL) in Champaign, Illinois; and the Topographic Engineering Center (TEC) in Alexandria, Virginia. The ERDC is responsible for conducting research in the broad fields of hydraulics, dredging, coastal engineering, instrumentation, oceanography, remote sensing, geotechnical engineering, earthquake engineering, soil effects, vehicle mobility, self-contained munitions, military engineering, geophysics, pavements, protective structures, aquatic plants, water quality, dredged material, treatment of hazardous waste, wetlands, physical/mechanical/chemical properties of snow and other frozen precipitation, infrastructure and environmental issues, computer science, telecommunications management, energy, facilities maintenance, materials and structures, engineering processes, environmental processes, land and heritage conservation, and ecological processes. The BAA is available at <http://erdc.usace.army.mil> and is open until superseded. Proposals may be accepted at any time. For questions regarding proposals to CHL, EL, GSL, TEC & ITL, contact Mike Lee at 601-634-3903 or via email at Michael.G.Lee@usace.army.mil. For questions regarding proposals to CERL, contact Wanda Huber at 217-373-6730 or via email at Wanda.L.Huber@usace.army.mil or Andrea Krouse at 217-373-6746 or via email at Andrea.J.Krouse@usace.army.mil. For questions regarding proposals at CRREL, contact Ashley Jenkins at 217-373-7297 or via email at Ashley.M.Jenkins@usace.army.mil. Contact the technical personnel listed at the end of each topic area for questions concerning the topic areas themselves.

Pre-Proposal Submission: Proposals should be submitted with a completed Attachment C, as stated in paragraph A of this Section 2, and also a signed and dated SF-33 available at <http://www.gsa.gov/portal/forms/download/116254>

For grants and cooperative agreements, use the SF-424 located at http://apply07.grants.gov/apply/forms/sample/SF424_2_1-V2.1.pdf

Letter of Intent: Contact Mike Lee Procurement Analyst Phone 601-634-3903 michael.g.lee@usace.army.mil.

Deadline: January 31, 2017

Grant Program: Neural Engineering System Design (NESD)

Agency: Department of Defense DARPA - Biological Technologies Office

DARPA-BAA-16-09

RFP Website: <https://www.fbo.gov/spg/ODA/DARPA/CMO/DARPA-BAA-16-09/listing.html>

Brief Description: DARPA seeks proposals to design, build, demonstrate, and validate a neural interface system capable of recording from more than one million neurons and stimulating more

than one hundred thousand neurons in proposer-defined regions of the human sensory cortex (e.g., visual cortex or auditory cortex). The complete system must demonstrate high-precision detection, transduction, and encoding of neural activity.

Awards: Cooperative Agreement.

Letter of Intent: Contact David Swan III, BAA Coordinator; DARPA-BAA-16-09@darpa.mil.

Deadline: April 14, 2016.

Grant Program: Minerva Research Initiative

Agency: Department of Defense WHS-AD-FOA-16-01

RFP Website: <http://minerva.dtic.mil>

Brief Description: Just as the Cold War gave rise to new ideas and fields of study such as game theory and Kremlinology, the challenges facing the world today call for a broader conception and application of national power that goes beyond military capability. The Office of the Secretary of Defense (OSD) is interested in receiving proposals for the Minerva Research Initiative (<http://minerva.dtic.mil>), a university-led defense social science program seeking fundamental understanding of the social and cultural forces shaping U.S. strategic interests globally. The Minerva Research Initiative (Minerva) emphasizes questions of strategic importance to U.S. national security policy. It seeks to increase the Department's intellectual capital in the social sciences and improve its ability to address future challenges and build bridges between the Department and the social science community. Minerva brings together universities and other research institutions around the world and supports multidisciplinary and cross-institutional projects addressing specific topic areas determined by the Department of Defense. The Minerva program aims to promote research in specific areas of social science and to promote a candid and constructive relationship between DoD and the social science academic community. The Minerva Research Initiative competition is for research related to the five (5) topics and associated subtopics listed below. Innovative white papers and proposals related to these research topics are highly encouraged. Detailed descriptions of the topics can be found in Section IX, "Specific Minerva Research Initiative Topics." I. Identity, Influence, and Mobilization Culture, identity, and security Influence and mobilization for change II. Contributors to Societal Resilience and Change Governance and rule of law Migration and urbanization Populations and demographics Environment and natural resources Economics III. Power and Deterrence Global order Power projection and diffusion Beyond conventional deterrence Area studies IV. Analytical methods and metrics for security research V. Innovations in National Security, Conflict, and Cooperation Proposals will be considered both for single-investigator awards as well as larger teams. A team of university investigators may be warranted because the necessary expertise in addressing the multiple facets of the topics may reside in different universities, or in different departments of the same university. The research questions addressed should extend across a fairly broad range of linked issues where there is clear potential synergy among the contributions of the distinct disciplines represented on the team. Team proposals must name one Principal Investigator as the responsible technical point of contact. Similarly, one institution will be the primary recipient for the purpose of award execution. The relationship among participating institutions and their respective roles, as well as the apportionment of funds including sub-awards, if any, must be described in both the proposal text and the budget. The Minerva Research Initiative is a multi-service effort. Ultimately, however, funding decisions will be made by OSD personnel, with technical inputs from the Services.

Awards: Up to \$5,000,000. Minimum: \$150,000

Letter of Intent: Contact BAA Coordinator; osd.minerva@mail.mil

Deadline: June 17, 2016

Department of Energy

Grant Program: Fiscal Year 2016 Vehicle Technologies Program Wide Funding Opportunity Announcement

Agency: Department of Energy DE-FOA-0001384

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

Brief Description: Amendment 000001 to DE-FOA-0001384. To view the changes associated with this amendment, please refer to the EERE Exchange website. The Office of Energy Efficiency and Renewable Energy is issuing, on behalf of the Vehicle Technologies Office, this Funding Opportunity Announcement, entitled Fiscal Year 2016 Vehicle Technologies Program Wide Funding Opportunity Announcement. This Funding Opportunity Announcement supports a broad portfolio of advanced highway transportation technologies that reduce petroleum consumption and greenhouse gas emission, while meeting or exceeding vehicle performance and cost expectations. Projects will focus on reducing the cost and improving the performance of a mix of near-and-long-term vehicle technologies. Activities will contribute to achieving the goals of the EV Everywhere Grand Challenge, with a focus on accelerating the development of advanced batteries, power electronics, and lightweight materials technologies, while also supporting technology development to reduce petroleum consumption through advancements in combustion engines, alternative fuels, and other enabling technologies. The Funding Opportunity Announcement also supports Clean Cities initiatives to overcome market barriers. The full Funding Opportunity Announcement 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. 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: Up to \$3,750,000. Minimum: \$500,000

Deadline: Mar 28, 2016 Please refer to the FOA for application and submission deadline Information. The FOA is contained in the EERE eXCHANGE system.

National Endowment of Arts

Grant Program: 2017 National Heritage Fellowship Awards Program

Agency: National Endowment of Arts

RFP Website: <https://www.arts.gov/program-solicitation/2017-national-heritage-fellowships>

Brief Description: The purpose of this Program Solicitation is to select an organization to assist the National Endowment for the Arts with the 2017 National Heritage Fellowships Awards program by coordinating a concert, ceremony and reception, awardee dinner, and associated events.

Each year, the National Endowment for the Arts awards a limited number of lifetime honors to individuals in recognition of their outstanding contributions to our nation's artistic heritage. One of these programs, the [NEA National Heritage Fellowship Awards](#), pays tribute and draws public attention to the excellence and diversity of our nation's folk and traditional arts. The one-time-only awards go to significant traditional artists from across the country in recognition of their contributions to a particular traditional art form and to the American public through their artistic work. Since 1982, new awardees have travelled to Washington, DC to receive our nation's highest honor in this field in a public ceremony and perform in a concert.

Through this Program Solicitation, the National Endowment for the Arts seeks a Cooperator to assist in the production and execution of the award program's public events including bringing the recipients to Washington, DC and coordinating the various events surrounding the official presentation of the 2017 National Heritage Fellowship awards.

Awards: Up to \$310,000

Letter of Intent: Contact the agency <https://www.arts.gov/contact-us>

Deadline: April 5, 2016; The National Endowment for the Arts requires organizations to submit their proposals electronically through Grants.gov, the federal government's online application system. The Grants.gov system must receive your validated and accepted proposal no later than 11:59 p.m., Eastern Time, on the deadline date above. We strongly recommend that you **submit your application by March 25, 2016** to give yourself ample time to resolve any problems that you might encounter

The Esther A. & Joseph Klingenstein Fund and the Simons Foundation

Grant Program: The Klingenstein-Simons Fellowship Awards

Agency: The Esther A. & Joseph Klingenstein Fund and the Simons Foundation

RFP Website: <http://www.klingfund.org/index.php>

Brief Description: The Esther A. & Joseph Klingenstein Fund and the Simons Foundation announce the opening of its 2016 competition for research fellowships in the neurosciences. Previously known as the Klingenstein Fellowship Awards in the Neurosciences, this year's awards are the third from this joint project of the Klingenstein Fund and the Simons Foundation. The awards are among the nation's oldest and most illustrious fellowships for young investigators in neuroscience research.

Aimed at advancing cutting-edge investigations, the awards are presented to highly promising, early career scientists. At this critical juncture in young investigators' careers, when funding can be a challenge, the fellowship awards promote higher-risk, and potentially higher-reward, projects.

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.

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

Awards: \$225,000 over three years

Deadline: March 1, 2016

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