

The Division of Science and Research distributes a weekly e-mail update regarding current grant opportunities from a variety of funders, including the National Science Foundation, NASA, National Institute of Health and others. To sign up for alerts, contact [Dr. Jan Taylor](#).

GRANT OPPORTUNITIES

Division of Science and Research

Merry Christmas and wishes for a happy and successful New Year! This is the last Grant Opportunities email until January 6, 2017

NSF
NIH
DOE
DOD
NIST

National Science Foundation

The [Division of Environmental Biology \(DEB\)](#) supports fundamental research on populations, species, communities, and ecosystems. Scientific emphases range across many evolutionary and ecological patterns and processes at all spatial and temporal scales. Areas of research include biodiversity, phylogenetic systematics, molecular evolution, life history evolution, natural selection, ecology, biogeography, ecosystem structure, function and services, conservation biology, global change, and biogeochemical cycles. Research on organismal origins, functions, relationships, interactions, and evolutionary history may incorporate field, laboratory, or collection-based approaches; observational or manipulative experiments; synthesis activities; as well as theoretical approaches involving analytical, statistical, or computational modeling. Preliminary Proposal Deadline Date: January 23, 2017. Full Proposal Deadline Date: August 2, 2017.

The [Long Term Research in Environmental Biology \(LTREB\) Program](#) supports the generation of extended time series of data to address important questions in evolutionary biology, ecology, and ecosystem science. Research areas include, but are not limited to, the effects of natural selection or other evolutionary processes on populations, communities, or ecosystems; the effects of interspecific interactions that vary over time and space; population or community dynamics for organisms that have extended life spans and long turnover times; feedbacks between ecological and evolutionary processes; pools of materials such as nutrients in soils that turn over at intermediate to longer time scales; and external forcing functions such as climatic cycles that operate over long return intervals. The Program intends to support decadal projects. Funding for an initial, 5-year period requires submission of a preliminary proposal and, if invited, submission of a full proposal that includes a 15-page project description. Proposals for the second five years of support (renewal proposals) are limited to a ten-page project description and do not require a preliminary proposal. Preliminary Proposal Deadline Date: January 23, 2017. Full Proposal Deadline Date: August 2, 2017.

[Research in the Formation of Engineers \(RFE\) program](#) welcomes proposals that consider the construction of engineering knowledge, engineering identity, and the engineering profession, as well as interventions that expand the boundaries of each of these. Ultimately RFE aims to transform the engineering formation system, and thus the impact of proposed projects on this system must be described. PIs should provide a roadmap detailing how they envision the proposed research will eventually broadly impact practice within the engineering formation system, even if these activities are not within the scope of the submitted proposal. The RFE program accepts a diverse range of project scales from small, exploratory projects to large scale investigations with a broad, systemic scope; project budgets should match the project scope. Small-scale, exploratory projects with high transformative potential are strongly encouraged. The estimated number of awarded proposals is based on a projected average funding level of approximately \$100,000 per project per year. All PIs should discuss the budget of proposed projects with a cognizant program officer before submission. Full Proposal Deadline Date: January 25, 2017.

[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. Full Proposal Window: January 12, 2017 - January 26, 2017.

The [Methodology, Measurement, and Statistics \(MMS\) Program](#) is an interdisciplinary program in the Directorate for Social, Behavioral, and Economic Sciences that supports the development of innovative, analytical, and statistical methods and models for those sciences. MMS seeks proposals that are methodologically innovative, grounded in theory, and have potential utility for multiple fields within the social and behavioral sciences. As part of its larger portfolio, the MMS Program partners with a consortium of federal statistical agencies to support research proposals that further the development of new and innovative approaches to surveys and to the analysis of survey data. Full Proposal Deadline Date: January 26, 2017.

The [Accelerator Science](#) program supports and fosters research that exploits the educational and discovery potential of basic accelerator physics research at academic institutions. A key goal of the program is to seed and develop research efforts in fundamental accelerator science at colleges and universities that will enable transformational discoveries in this crosscutting academic discipline. In particular, this program seeks to support research with the potential to disrupt existing paradigms and advance accelerator science at a fundamental level, such as enabling discoveries that lead to novel, compact, powerful, and/or cost-effective accelerators. Key questions addressed by the program include: What are the fundamental limitations affecting the acceleration, control, intensity, and quality of particle beams? What novel approaches can be employed to substantially increase accelerating gradients? How can developments in other fields lead to new approaches in accelerator science and beam physics? This program aims to provide the foundation in knowledge and workforce upon which major advances in accelerator-driven technologies will be based. An important component of the program is the support and training of the next generation of accelerator scientists, including students, postdoctoral researchers, and junior faculty, who will lead innovations in the field and will form the backbone of the nation's highly-trained accelerator workforce. Full Proposal Deadline Date: February 1, 2017.

[Perception, Action & Cognition \(PAC\)](#) - The PAC program funds theoretically motivated research on a wide-range of topic areas focused on typical human behavior. The aim is to enhance the fundamental understanding of perceptual, motor, and cognitive processes and their interactions. Central research topics for consideration by the program include (but are not limited to) vision, audition, haptics, attention, memory, reasoning, written and spoken language, motor control, categorization, spatial cognition, and the interaction of sleep or emotion with cognitive or perceptual processes. The program welcomes a wide range of perspectives, such as individual differences, symbolic computation, connectionism, ecological, genetics, nonlinear dynamics and complex systems, and a variety of methodologies including both experimental studies and modeling. The PAC program is open to co-review of proposals submitted to other programs both within the Social, Behavioral, and Economic Sciences Directorate and across other directorates. Full Proposal Window: January 15, 2017 - February 1, 2017. This proposal window is for research proposals only. Workshop and conference proposals should not be submitted during this submission window.

[National Robotics Initiative 2.0: Ubiquitous Collaborative Robots \(NRI-2.0\)](#) - The original NRI program focused on innovative robotics research that emphasized the realization of collaborative robots (co-robots) working in symbiotic relationships with human partners. The NRI-2.0 program significantly extends this theme to focus on issues of scalability: how teams of multiple robots and multiple humans can interact and collaborate effectively; how robots can be designed to facilitate achievement of a variety of tasks in a variety of environments, with minimal modification to the hardware and software; how robots can learn to perform more effectively and efficiently, using large pools of information from the cloud, other robots, and other people; and how the design of the robots' hardware and software can facilitate large-scale, reliable operation. In addition, the program supports innovative approaches to establish and infuse robotics into educational curricula, advance the robotics workforce through education pathways, and explore the social, behavioral, and economic implications of our future with ubiquitous collaborative robots. Collaboration between academic, industry, non-profit, and other organizations is encouraged to establish better linkages between fundamental science and engineering and technology development, deployment and use. Well-justified international collaborations that add significant value to the proposed research and education activities will also be considered. Full Proposal Deadline Date: February 2, 2017.

The [Science of Organizations \(SoO\) program](#) funds basic research that yields a scientific evidence base for improving the design and emergence, development and deployment, and management and ultimate effectiveness of organiza-

tions of all kinds. SoO funds research that advances our fundamental understanding of how organizations develop, form and operate. Successful SoO research proposals use scientific methods to develop and refine theories, to empirically test theories and frameworks, and to develop new measures and methods. Funded research is aimed at yielding generalizable insights that are of value to the business practitioner, policy-maker and research communities. SoO welcomes any and all rigorous, scientific approaches that illuminate aspects of organizations as systems of coordination, management and governance. Full Proposal Target Date: February 2, 2017.

The [Science, Technology, and Society \(STS\) program](#) supports research that uses historical, philosophical, and social scientific methods to investigate the intellectual, material, and social facets of the scientific, technological, engineering and mathematical (STEM) disciplines. It encompasses a broad spectrum of STS topics including interdisciplinary studies of ethics, equity, governance, and policy issues that are closely related to STEM disciplines, including medical science. Full Proposal Deadline Date: February 2, 2017.

The [Broadening Participation in Engineering \(BPE\) Program](#) is a Directorate-wide initiative dedicated to supporting the development of a diverse and well-prepared engineering workforce. Across every educational juncture (e.g., elementary, secondary, and postsecondary levels), efforts to improve engineering interests, preparation, connections, experiences, and opportunities among underrepresented groups is of major importance to BPE. In FY 2017, aligned with NSF-wide [INCLUDES](#), BPE is interested in funding projects that bring together multiple groups (e.g., school districts, community colleges, engineering schools, industry, philanthropy, government, etc.) and offer the greatest return on investment by producing outcomes that are scalable, sustainable, and applicable to various contexts, settings, and demographics within the engineering enterprise. For example, it is interested research projects that help us to analyze and understand the problem of insufficient interest and poorly sustained participation in engineering across underrepresented demographic groups; insignificant preparation and scarce opportunities for members of underrepresented demographic groups to learn meaningful, relevant engineering and other STEM-related content; insufficient access to support systems and social networks that raises career awareness about different engineering pathways among underrepresented groups; and structural inequalities and biases within educational and workforce systems that may influence engineering persistence. Full Proposal Deadline Date: February 6, 2017.

[Integrative Strategies for Understanding Neural and Cognitive Systems](#) is open to proposals to advance the foundations of one or more of the following integrative research themes, described within the solicitation: Neuroengineering and Brain-Inspired Concepts and Designs; Individuality and Variation; Cognitive and Neural Processes in Realistic, Complex Environments; and Data-Intensive Neuroscience and Cognitive Science. Within each theme, advances in theory and methods, technological innovations, educational approaches, research infrastructure, and workforce development are all of significant interest. Proposals must be consistent with the missions of the participating directorates. High-risk, high-payoff approaches are expected. Proposals must directly address risks and how they will be managed, potentially transformative payoffs, and the relationship between the risks and rewards at stake. During FY17 the program will consider two classes of proposals. INTEGRATIVE FOUNDATIONS awards (CISE, EHR, ENG, SBE) will support projects that develop foundational advances that are deeply connected to a broad scope of important research questions in neural and cognitive systems, and have significant potential for transformative advances in one or more of the integrative thematic areas. CORE+ SUPPLEMENTS (CISE, EHR, ENG) will provide additional support to new or existing projects in the participating directorates, to enable additional activities that will connect those projects to significant new integrative opportunities in neural and cognitive systems. Letter of Intent Deadline Date: January 9, 2017 for INTEGRATIVE FOUNDATIONS. Full Proposal Deadline Date: February 6, 2017 for INTEGRATIVE FOUNDATIONS.

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National Institutes of Health

[Exploratory Analyses of Existing Cohorts, Data Sets, and Stored Biospecimens to Address Clinical Aging Research Questions \(R21\)](#) - This funding opportunity announcement (FOA) invites studies employing secondary analysis of existing cohorts, data sets and biorepositories to explore clinically related issues on aging changes influencing health across the lifespan, including diseases and disabilities in older persons. Use of cohorts that are linked to electronic health record systems and/or Centers for Medicare and Medicaid Services (CMS) administrative data are especially welcome. This FOA will support exploratory analysis of innovative hypotheses in clinical aging research and/or to inform design of future epidemiologic or human intervention studies. Costs related to data harmonization, archival activities and/or assay refinement may be included in the budget, as long as they are pertinent to the specific aims of the proposed project. Companion Funding Opportunity is [PA-17-088](#), [R01](#) Research Project Grant. Application Due Date(s): [Standard dates](#) apply.

[Consortium for Pancreatic Ductal Adenocarcinoma \(PDAC\) Translational Studies on the Tumor Microenvironment \(U01\)](#)

- The purpose of this funding opportunity announcement (FOA) is to stimulate research in the area of PDAC microenvironment with the ultimate goal of understanding the interaction between tumors and the microenvironment. The plan is to design new immunotherapy and combination interventions that would accommodate and build on the distinct characteristics of this interaction. It is expected that the interventions will lead to improved responses in pre-clinical models and clinical evaluation either in NCI-based early phase networks (ETCTN), or by industry or cancer centers. Companion Funding Opportunity is [RFA-CA-17-016](#), U24 Resource-Related Research Projects– Cooperative Agreements. Letter of Intent Due Date(s): February 7, 2016. Application Due Date(s): March 7, 2017.

[Canine Immunotherapy Trials and Correlative Studies \(U01\)](#) - This Funding Opportunity Announcement (FOA) will support canine clinical studies using immunotherapeutic agents and novel drug combinations (such as immune modulators, molecular targeted agents, chemotherapy, and/or radiation) together with laboratory correlative studies that seek to describe characterize and understand the cellular and molecular mechanisms that determine the anti-tumor response (or non-response) in dogs with spontaneous tumors. The FOA will support a network of laboratories and canine clinical trial sites. A companion funding opportunity (see U24 funding opportunity [RFA-CA-17-002](#)) will support a coordinating center that will aid in the development, standardization, and conduct of the clinical and laboratory studies as well as data management across the funded U01 sites. Letter of Intent Due Date(s): 30 days prior to the application due date. Application Due Date(s): March 7, 2017.

[Cancer Immune Monitoring and Analysis Centers \(U24\)](#) - This National Cancer Institute (NCI) funding opportunity announcement (FOA) solicits applications for multidisciplinary Cancer Immune Monitoring and Analysis Centers (CIMACs) that will serve as the main units of the Network for correlative studies in clinical trials involving immunotherapy. The Network will encompass two to three CIMACs (to be supported by this FOA) and a single Cancer Immunologic Data Commons (CIDC) (to be supported by the companion FOA, [RFA-CA-17-006](#)) forming a CIMACs-CIDC Network. . Letter of Intent Due Date(s): 30 days prior to the application due date. Application Due Date(s): March 3, 2017.

[Integrative Research in Gynecologic Health \(R01\)](#) - The purpose of this FOA is to encourage integrated and synergistic research in the study of uterine fibroids, endometriosis, adenomyosis, or gynecologic pain syndromes. Letter of Intent Due Date(s): 30 days prior to the application due date. Application Due Date(s): March 31, 2017.

[Fertility Status as a Marker for Overall Health \(R01\)](#) - The purpose of this funding opportunity announcement (FOA) is to support research that explores the premise that fertility status can be a marker for overall health. It is clear that chronic conditions such as cancer, diabetes, and obesity can impair fertility, however less is known about the extent to which fertility status can impact or act as a marker for overall health. Data suggest that infertility is not necessarily a unique disease of the reproductive axis, but is often physiologically or genetically linked with other diseases and conditions. Recent epidemiologic studies demonstrate links between fertility status in both males and females and various somatic diseases and disorders. Taken together, these data strongly suggest that fertility status can be a window into overall health. This FOA focuses on studies evaluating fertility as a marker for overall health and therefore applications that look at the effects of a disease or disorder on fertility are outside the scope of this program. Companion Funding Opportunity is [PA-17-092](#), R21 Exploratory/Developmental Grant. Application Due Date(s): [Standard dates](#) apply.

[Centers for Oceans and Human Health 3: Impacts of Climate Change on Oceans and Great Lakes \(COHH3\) \(P01\)](#)

- The purpose of this Funding Opportunity Announcement (FOA) is to invite applications for multi-component projects that will investigate the impact of climate change on emerging public health threats associated with marine and Great Lakes Basin environments. The focus of the program will be to support research on the exposures, toxicities and human health impacts that arise in these environments and how climate change is influencing these factors now and in the future. The FOA solicits applications that will achieve program goals through integrated, multidisciplinary scientific approaches and a community engagement component. Letter of Intent Due Date(s): February 7, 2016. Application Due Date(s): March 7, 2017.

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Department of Energy

[Support of Fossil Energy Research at U.S. Colleges and Universities Including University Coal Research \(UCR\) and Research by Historically Black Colleges and Universities and Other Minority Institutions \(HBCU/OMI\)](#) - This Funding Opportunity Announcement (FOA) is for the solicitation of applications from U.S. Colleges and Universities for Fossil Energy Research. It encompasses two distinct programs with their own dedicated funding, requirements, and restricted eligibility: the University Coal Research (UCR) Program; and the Historically Black Colleges & Universities and Other

Minority Institutions (HBCU/OMI) Program. Both programs seek to educate the next generation of scientists and engineers while advancing the frontiers of fossil energy science and technology. The HBCU/OMI program has the additional goal of increasing the participation of under-represented populations of students in such research. Application Due Date: 2/17/2017 at 11:59:59 PM Eastern Time.

Innovative Pathways - The Tech-to-Market Innovative Pathways FOA is seeking to surface new testable and scalable ways (mechanisms, approaches, models, and/or platforms) to address both areas above (Topics 1 and 2, respectively). This Funding Opportunity will fund implementation of innovative cross-cutting mechanisms that could alleviate some of the common structural challenges facing promising new energy technologies on the pathway to market. The two highlighted areas of interest for this FOA are (1) New models for Industry-startup partnerships under Topic 1, and (2) New investment models under Topic 2. However, Tech-to-Market will consider for funding any proposals that address the two Topics. EERE's intent is to pilot and evaluate new mechanisms, and position those that are successful for adoption by the private sector. These mechanisms are intended to augment existing Tech-to-Market efforts currently supported. This Funding Opportunity is not intended to fund individual technology solutions directly. Rather, it will fund approaches that address common barriers across the larger energy ecosystem and help create more efficient pathways to market for clean energy technologies. Overcoming these common barriers will help bolster U.S. leadership in energy innovation, capturing the associated economic benefits and ensuring affordable and reliable American energy. Informational Webinars providing an overview of this FOA will be held on January 4, 2017 and February 7, 2017 at 2:00pm ET. To register to attend these Webinars please go to these links: January 4th Webinar web address for applicants: [January 4th Webinar Registration Link](#). February 7th Webinar web address for applicants: [February 7th Webinar Registration Link](#). Letter of Intent Deadline: 1/18/2017 3:00 PM ET. Full Application Submission Deadline: 2/15/2017 3:00 PM ET.

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Department of Defense

SSBN Security Technology – The Office of Naval Research (ONR) and the Undersea Influence, Counter-USW Branch (N974B) of the Chief of Naval Operations' (CNO) Undersea Warfare Division (N97) are interested in receiving proposals focused on the identification of science and physics based signal detection technologies that, individually or as a system, can impact the security of the SSBN and submarines in general. Passive and active detection technologies with near term (0-5 years), mid-term (5-10 years) and far term (10-20 years) implications will be considered. Full Proposals will be accepted until May 31, 2017 05:00 PM EST.

MACROALGAE RESEARCH INSPIRING NOVEL ENERGY RESOURCES (MARINER) - The overall goal of this program is to develop the critical tools that will allow the nascent macroalgae industry in the United States to leverage this tremendous resource and grow into a world leader in the production of marine biomass. The program will focus on developing advanced cultivation technologies that enable the cost and energy efficient production of macroalgal biomass in the ocean at a scale suitable as feedstock for the production of fuels and chemicals. The challenge is to dramatically reduce capital and operating cost of macroalgae cultivation, while significantly increasing the range of deployment by expanding into more exposed, off-shore environments. Specifically, this program is interested in new designs and approaches to macroalgae cultivation, with harvesting and transport being an integral part of such systems. These new systems may leverage new material and engineering solutions, and autonomous and robotic operations, as well as advanced sensing and monitoring capabilities. To further accelerate the development and deployment of such systems, the program will also focus on the development of computational modeling tools and ocean- deployable sensor platforms, as well as advanced macroalgal breeding tools. ARPA-E expects that the MARINER program will support development of technologies that will accelerate the deployment of advanced ocean farming systems capable of delivering renewable biomass feedstock at a cost competitive with terrestrial biomass feedstocks. Concept Paper Submission Deadline: 2/14/2017 5:00 PM ET. Full Application Submission Deadline: TBD.

Electronic Warfare Technology - The goal of Electronic Warfare (EW) is to control the Electromagnetic Spectrum (EMS) by exploiting, deceiving, or denying enemy use of the spectrum while ensuring its use by friendly forces. To that end, the Office of Naval Research (ONR) EW Discovery and Invention (D&I) program invests in Science and Technology (S&T) initiatives that will provide naval forces (including Navy and Marine Corps) with improved threat warning systems; Electronic warfare Support (ES); decoys and countermeasures against weapon tracking and guidance systems; Electronic Attack (EA) against adversary Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR); and Electronic Protection (EP) of our own weapons and C4ISR from intentional and unintentional interference. ONR Code 312 Electronic Warfare (312EW) seeks proposals to develop and demonstrate technologies for the next generation systems in electronic warfare. White papers and subsequent proposals should

address technology developments in one or more of the following Research Opportunity Areas 1-5. White Papers: 21 February 2017. Full Proposals: 5 June 2017.

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National Institute of Standards and Technology

Since 1970, NIST, as part of its research program, has provided funding under the [Precision Measurement Grant Program \(PMGP\)](#) primarily to universities and colleges so that faculty may conduct significant research in the field of fundamental measurement or the determination of fundamental constants. NIST sponsors these research projects primarily to encourage basic, measurement-related research in universities and colleges and other research laboratories and to foster contacts between NIST scientists and those faculty members of academic institutions and other researchers who are actively engaged in such work. The PMGP also is intended to make it possible for researchers to pursue new ideas for which other sources of support may be difficult to find. There is some latitude in research topics that will be considered under the PMGP. Abbreviated applications must be received no later than 5:00 p.m. Eastern Time on Thursday, February 2, 2017. Review of abbreviated applications and selection of finalists is expected to be completed by Tuesday, March 21, 2017. Full applications submitted through Grants.gov must be received no later than 11:59 p.m. Eastern Time, on Tuesday, May 2, 2017.

[NIST Public Safety Innovation Accelerator Program](#) - The NIST Public Safety Innovation Accelerator Program seeks applications from eligible applicants for activities to accelerate research, development, production, and testing of key broadband technologies and capabilities for first responders as described in Section I. of this Full Announcement/NOFO. Applications must be received at Grants.gov no later than 11:59 p.m. Eastern Time, Tuesday, February 28, 2017.

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