

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

A good read, especially for junior faculty: <http://www.sciencemag.org/careers/2017/05/benefits-awards-even-if-you-don-t-win>

Even though we don't know what the budget will hold, the Division of Science and Research is releasing the RFPs for [STEM Fellowships](#) and [Research Challenge Grants](#) today. **Deadline for proposals for both is August 1, 2017.**

It is my pleasure to announce that [Carl Schoonover](#) will join our Chancellor's STEM Speaker Series on Thursday, **June 29 at the WVSU Capitol Center Theater (on Summers Street)**. In a talk titled The Brain Revealed Schoonover, who is a neuroscientist at Columbia University and a TED Fellow, will explain the ingenious tools that let us see inside our brains--and shares the gorgeous imagery they reveal. The spectacular data range from medieval sketches and intricate drawings by groundbreaking scientists such as Leonardo da Vinci and Santiago Ramón y Cajal, to the exquisite architectures revealed through the use of cutting edge biotechnology and imaging. These exquisite images, which emerged from microscopes, electrophysiological instruments and MRI machines, are the fuel of daily neuroscience research yet most have not been seen by people outside of the neuroscience community.

We hope you will make plans to join us! Tickets are free but must be obtained in advance at the following link: <https://www.eventbrite.com/e/stem-speaker-series-the-brain-revealed-with-carl-schoonover-tickets-34856330222>.

Schoonover is also the author of *Portraits of the Mind: Visualizing the Brain from Antiquity to the 21st Century* and has written for *The New York Times*, *Le Figaro* and *Scientific American*. Schoonover will participate in a book signing immediately following his presentation. Copies of the book will be sold by Taylor Books at the event.

## MIT ONLINE COURSE ON EDX

Curious about entrepreneurship, but not sure where to start? Our free online course launched yesterday on edX. From generating ideas and doing market research to developing business strategy and pitching. There will be a combination of short videos, case studies, and activities that will challenge you to make a meaningful impact. This course is rated 4.5 out of 5 stars, with total historical enrollment over at 100K students. [ENROLL TODAY](#)

NSF  
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## National Science Foundation

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. Full Proposal Target Date: October 3, 2017.

The [Combinatorics](#) program supports research on discrete structures and includes algebraic, enumerative, existential, extremal, geometric, and probabilistic combinatorics, including graph theory. Full Proposal Target Date: October 3, 2017.

The program in [Foundations](#) supports research in mathematical logic and the foundations of mathematics, including proof theory, recursion theory, model theory, set theory, and infinitary combinatorics. Full Proposal Target Date: October 3, 2017.

The [Historically Black Colleges and Universities Undergraduate Program \(HBCU-UP\)](#) is committed to enhancing the quality of undergraduate STEM education and research at HBCUs as a means to broaden participation in the nation's STEM workforce. To this end, HBCU-UP provides awards to develop, implement, and study evidence-based innovative models and approaches for improving the preparation and success of HBCU undergraduate students so that they may pursue STEM graduate programs and/or careers. Support is available for Targeted Infusion Projects, Broadening Participation Research Projects, Research Initiation Awards, Implementation Projects, Achieving Competitive Excellence Implementation Projects, and Broadening Participation Research Centers; as well as other funding opportunities. Letter of Intent Deadline Date: July 25, 2017. Full Proposal Deadline Date: October 3, 2017 for Research Initiation Awards.

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## National Institutes of Health

[Cellular and Molecular Biology of Complex Brain Disorders \(R01\)](#) - This Funding Opportunity Announcement (FOA) encourages research grant applications directed toward the discovery of the impact of alterations associated with complex brain disorders on the fundamental cellular and molecular substrates of neuronal function. Companion Funding Opportunity is [PAR-17-310, R21](#) Exploratory/Developmental Grant. Application Due Date(s): [Standard dates](#) apply.

[NeuroNEXT Clinical Trials \(U01\)](#) - This FOA encourages applications for exploratory clinical trials of investigational agents (drugs, biologics, surgical therapies or devices) that may contribute to the justification for and provide the data required for designing a future trial, for biomarker validation studies, or for proof of mechanism clinical studies. Diseases chosen for study should be based on the NINDS' strategic plan and clinical research interests ([www.ninds.nih.gov/funding/areas/index.htm](http://www.ninds.nih.gov/funding/areas/index.htm)). Successful applicants will be given access to the NeuroNEXT infrastructure. Following peer review, NINDS will prioritize and order trials that are given access to the NeuroNEXT infrastructure. The NeuroNEXT Clinical Coordinating Center (CCC) will work with the successful applicant to efficiently implement the proposed study. The NeuroNEXT Data Coordinating Center (DCC) will provide statistical and data management support. The NeuroNEXT clinical sites will provide recruitment/retention support as well as on-site implementation of the clinical protocol. Applicants do not need to be part of the existing NeuroNEXT infrastructure. Application Due Date(s): August 3, 2017; December 6, 2017.

[NINDS Neuroscience Development for Advancing the Careers of a Diverse Research Workforce \(R25\)](#) - The NIH Research Education Program (R25) supports research education activities in the mission areas of the NIH. The over-arching goal of this NINDS Neuroscience Development for Advancing the Careers of a Diverse Research Workforce R25 program is to support educational activities that enhance the diversity of the biomedical, behavioral and clinical research workforce by (1) increasing the pool of current and future Ph.D.-level research scientists from diverse backgrounds underrepresented in biomedical neuroscience research; and (2) facilitating the career advancement/transition of the participants to the next step of their neuroscience careers. Letter of Intent Due Date(s): At least 30 days prior to application due date. Application Due Date(s): September 25, 2017, September 25, 2018, September 25, 2019.

[HIV/HCV Co-Infections in Substance Abusers \(R01\)](#) - The purpose of this Funding Opportunity Announcement (FOA) is to fill gaps in our understanding of (a) the impact of substance abuse on HIV, HIV/HCV co-infection associated disease progression, (b) the pathogenic interactions between HIV and hepatitis C virus, (c) hepatic and non-hepatic co-morbidities associated with HIV/HCV-co-infections in people with substance abuse disorders (SUDs), and (d) the

effectiveness of interferon-free direct acting antiviral (DAAs) drug regimens to treat HIV/HCV co-infections in people with SUDs. This FOA is informed by priority area in the NIH HIV/AIDS Research Priorities and Guidelines for Determining AIDS Funding: <https://grants.nih.gov/grants/guide/notice-files/NOT-OD-15-137.html> and the HHS National Viral Hepatitis Action Plan 2017-2020: <https://www.hhs.gov/hepatitis/blog/2017/01/19/updated-national-viral-hepatitis-action-plan-2017-2020.html>. Letter of Intent Due Date(s): 30 days prior to the application due date. Application Due Date(s): September 7, 2017 and January 7, 2018.

**Global Brain and Nervous System Disorders Research Across the Lifespan (R21)** - This Funding Opportunity Announcement (FOA) encourages exploratory/developmental research grant applications, proposing the development of innovative, collaborative research projects on brain and other nervous system function and disorders throughout life, relevant to low- and middle-income countries (LMICs). Research on neurological, mental, behavioral, alcohol and substance use disorders may span the full range of science from basic to implementation research. Scientists in the United States (U.S.) or upper-middle income countries (UMICs) are eligible to partner with scientists in LMIC institutions. Scientists in upper middle-income LMICs (UMICs) are also eligible to partner directly with scientists at other LMIC institutions with or without out a US partner. Income categories used are as defined by the World Bank at <http://data.worldbank.org/about/country-classifications/country-and-lending-groups>. Companion Funding Opportunity is [PAR-17-314](#). Letter of Intent Due Date(s): 30 days prior to the application due date. Application Due Date(s): November 7, 2017; November 7, 2018; November 7, 2019.

**Pre-application for a Biomedical Technology Research Resource (X02)** - This announcement encourages pre-applications for the creation of national Biomedical Technology Research Resources (BTRRs). These Resources develop new or improved technology driven by the needs of basic, translational, and clinical researchers. The BTRRs are charged to make their technologies available to the biomedical research community, to train members of this community in the use of the technologies, and to disseminate both the technologies and the Resources experimental results broadly. Companion Funding Opportunity should the pre-application be judged competitive is [PAR-17-316](#), [P41](#) Biotechnology Resource Grant. Application Due Date(s): August 15, 2017; March 15, 2018; July 17, 2018; March 15, 2019; July 15, 2019; and March 15, 2020.

**The Impact of Microenvironment on Lung Progenitor Cell Function (R01)** - This Funding Opportunity Announcement (FOA) invites applications for basic research to elucidate the impact of microenvironment, which includes cellular components of the niche, extracellular matrix, and soluble factors, on lung progenitor cell phenotype and function during development, homeostasis, repair and regeneration. Multi-disciplinary teams with complementary expertise are encouraged to propose innovative, hypothesis-based studies to catalyze this understudied area critical to advancing lung stem cell biology. This FOA will also support the development of novel 3-dimensional, multi-component models to interrogate lung stem cell niches. Letter of Intent Due Date(s): September 4, 2017. Application Due Date(s): October 4, 2017.

**HIV Drug Resistance: Genotype-Phenotype-Outcome Correlations (R21)** - The purpose of this Funding Opportunity is to support studies that will evaluate HIV drug resistance and its relationship to treatment success. Applications are sought proposing studies of genotype/phenotype correlations in diverse subtypes, the relationship between minority variants and treatment outcomes and on the reasons for the discordance between genotype and treatment success or failure. Laboratory evaluations of samples with clinical correlates in patients on recommended regimens are encouraged. Companion Funding Opportunity is [PA-17-291](#), [R01](#) Research Project Grant. Application Due Date(s): [Standard AIDS dates](#) apply.

**Integration of Individual Residential Histories into Cancer Research (R21)** - The purpose of this Funding Opportunity Announcement (FOA) is to support substantive investigation of the role of individual residential histories in cancer etiology and outcomes, and to encourage the development of complex analytical strategies in support of substantive investigation. Companion Funding Opportunity is [PA-17-298](#) [R01](#) Research Project Grant. Application Due Date(s): [Standard dates](#) apply.

**NCCIH Natural Product Phase I-IIa Clinical Trial Award (R33)** - This Funding Opportunity Announcement (FOA) invites applications for investigator-initiated early phase clinical trials of natural products (i.e., botanicals, dietary supplements, and probiotics), which have a strong scientific premise to justify further clinical testing. Under this FOA, trials must be designed so that results, whether positive or negative, will provide information of high scientific utility and will support decisions about further development or testing of the natural product. Companion Funding Opportunities are: [PAR-17-319](#), [R61/R33](#) Exploratory/Developmental Phased Award; [PAR-17-216](#), [U01](#) Research Project - Cooperative Agreement; and [PAR-17-174](#), [UG3/UH3](#) Exploratory/Developmental Cooperative Agreement. Letter of Intent Due Date(s): 30 days prior to the application due date. Application Due Date(s): New Applications: October 4, 2017 and Resubmission and Revision Applications: October 24, 2017.

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## Department of Defense

[Topological Excitations in Electronics](#) - The Defense Sciences Office at the Defense Advanced Research Projects Agency (DARPA) is soliciting innovative research proposals exploring approaches to exploit topological excitations in electronics. The program aims to explore topological excitations that have recently been engineered in solid-state systems that have the potential to overcome fundamental limits faced by present electronic memory, digital logic, sensors and quantum bits (qubits) as well as other potential applications. Abstract Due Date: June 27, 2017, 4:00 p.m. FAQ Submission Deadline: August 9, 2017, 4:00 p.m. Full Proposal Due Date: August 16, 2017, 4:00 p.m.

[FY17 Peer Reviewed Cancer Research Program \(PRCRP\)](#) is currently receiving applications for three award mechanisms: Career Development Award; Idea Award with Special Focus; and Translational Team Science Award. The goal of the PRCRP is to improve quality of life by decreasing the impact of cancer on active duty Service members, their families, and the American public. The PRCRP is charged by Congress with the mission to investigate cancer risks and knowledge gaps that may be relevant to active duty Service members, their families, other military beneficiaries, and the American public. The Career Development Award requires a Letter of Intent by September 12, 2017 and an application by September 28, 2017. The other two award mechanisms require Pre-Proposal by June 30, 2017 and Application (by invitation only) by September 28, 2017.

[Innovative Systems for Military Missions](#) - The Tactical Technology Office of the Defense Advanced Research Projects Agency is soliciting executive summaries, white papers and proposals for advanced research, development and demonstration of innovative systems for military missions. Proposal Due Date: 12 June, 2018.

[Defense Sciences Office \(DSO\) Office-wide](#) - The mission of the Defense Advanced Research Projects Agency (DARPA) Defense Sciences Office (DSO) is to identify and pursue high-risk, high-payoff research initiatives across a broad spectrum of science and engineering disciplines and to transform these initiatives into disruptive technologies for U.S. national security. In support of this mission, the DSO Office-wide BAA invites proposers to submit innovative basic or applied research concepts that explore Physical and Natural Systems, Human-Machine and Social Systems, and/or Math and Computational Systems through the lens of one or more of the following technical domains: Complexity Engineering, Science of Design, Noosphere, Fundamental Limits, and New Foundations. Proposals must investigate innovative approaches that enable revolutionary advances. DSO is explicitly not interested in approaches or technologies that primarily result in evolutionary improvements to the existing state of practice. Executive Summary Due Date: April 26, 2018, 4:00 p.m. Abstract Due Date: May 10, 2018, 4:00 p.m. Full Proposal Due Date: General BAA: June 11, 2018, 4:00 p.m.

[DEPARTMENT OF DEFENSE Research and Education Program for Historically Black Colleges and Universities/ Minority-Serving Institutions \(HBCU/MI\)](#) (click on Related Documents tab) - Under the authority of 10 U.S.C. § 2362 and pending the availability of funds for Fiscal Year (FY) 2018, the Department of Defense (DoD) announces the research and education program for Historically Black Colleges and Universities and Minority-Serving Institutions (HBCU/MI). The program is executed under policy and guidance of the Assistant Secretary of Defense for Research and Engineering (ASD(R&E)) and is administered by ARO, ONR, and AFOSR, hereafter called "the Agencies." This Funding Opportunity Announcement (FOA) aims to (a) enhance research programs and capabilities in scientific and engineering disciplines critical to the national security functions of DoD; (b) enhance the capacity of HBCU/MI to participate in DoD research programs and activities; and (c) increase the number of graduates, including underrepresented minorities, in fields of science, technology, engineering, and mathematics (STEM) important to the defense mission. Applications Due: August 10, 2017.

The [Vannevar Bush Faculty Fellowship \(VBFF\)](#) program is sponsored by the Basic Research Office, Office of the Assistant Secretary of Defense for Research and Engineering (ASD (R&E)). VBFF supports innovative basic research within academia, as well as opportunities intended to develop the next generation of scientists and engineers for the defense workforce. The Office of Naval Research (ONR) manages the VBFF program for ASD (R&E). To accomplish this task, ONR is soliciting proposals for the VBFF program through this FOA. This FOA seeks distinguished researchers for the purpose of conducting innovative basic research in areas of interest to the DoD and fostering long-term relationships between the VBFF Fellows and the DoD. VBFF is oriented towards bold and ambitious "blue sky" research that may lead to extraordinary outcomes such as revolutionizing entire disciplines, creating entirely new fields, or disrupting accepted theories and perspectives. Acqutrak Registration (See Part IV. Section B. 1.): No later than 11:59 pm Eastern Daylight Time on 14 August 2017. White Papers and Supporting Documentation: No later than 11:59 pm Eastern Daylight Time on 16 August 2017. Full Proposal and Confidential Letters of Recommendation: No later than 11:59 pm Eastern Standard Time on 8 January 2018.

[Fiscal Year 2017 \(FY17\) Parkinson's Research Program \(PRP\)](#) is currently accepting applications for two award mechanisms. The PRP challenges the scientific community to develop impactful research that will advance the understanding of, and ultimately end, Parkinson's disease. The vision of the PRP is to stop Parkinson's disease by funding research through a partnership of scientists and consumers. For both the Early Investigator Research and Investigator-Initiated Research Awards, Letter of Intent is due August 17, 2017 and Application is due August 31, 2017.

[FY2018 Basic Research Challenge \(BRC\) Program](#) - The Office of Naval Research (ONR) is interested in receiving proposals for basic research relating to the following topic areas: Topic 1 Randomized Numerical Linear Algebra for Large-Scale, Efficient Matrix Computations; Topic 2 Levitated Optomechanics; Topic 3 Exploring Compositional Space to Predict and Evolve Multi-Principal Element Alloys; and Topic 4 Guaranteed Performance of Multibody Control Systems. White Papers: Friday, 18 August 2017. Full Proposals: Friday, 17 November 2017.

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## **Department of Energy**

[Innovative Technology Development to Enhance Fossil Power System Efficiency](#) - The U.S. Department of Energy Fossil Energy Crosscutting Research Program serves as a bridge between basic and applied research by targeting concepts that offer the potential for transformational breakthroughs and step-change benefits in the way energy systems are designed, constructed, and operated. DOE is seeking financial assistance applications that propose concepts and technologies that will make significant and cost-effective progress toward achieving these step-change benefits for electric generating units and industrial plants that use fossil fuel. Application Due Date: 07/24/2017 at 8:00 PM Eastern Time.

[Technology Development to Ensure Environmentally Sustainable CO2 Injection Operations](#) - This FOA seeks applications on research to develop techniques, tools, and methodologies that improve detection and assessment of CO2 stored in the target reservoir. Research products developed under this FOA are expected to include monitoring tools and techniques, as well as validation of models and modeling techniques. Successful technologies developed under this FOA will decrease the operator's financial burden associated with long-term monitoring by providing them the capability to assess the position of the CO2 plume in the target reservoir with greater certainty throughout the life cycle of the project (i.e., active- and post-injection). Application Due Date: 8/11/2017 at 8:00:00 PM Eastern Time.

[Theoretical Research in Magnetic Fusion Energy Science](#) - The Fusion Energy Sciences (FES) program in the Office of Science (SC), U.S. Department of Energy (DOE), announces its interest in receiving new or renewal grant applications for theoretical and computational research relevant to the U.S. magnetic fusion energy sciences program. Applications selected in response to this Funding Opportunity Announcement (FOA) will be funded in Fiscal Year 2018, subject to the appropriation of funds by the Congress. The specific areas of interest are: 1. Macroscopic Stability 2. Confinement and Transport 3. Boundary Physics 4. Plasma Heating & Non-inductive Current Drive, and 5. Energetic Particles. Letter of Intent Due Date: 07/14/2017 at 5 PM Eastern Time (A Letter of Intent is required). Application Due Date: 08/18/2017 at 11:59 PM Eastern Time.

[Advanced Technology Solutions for Unconventional Oil and Gas Development](#) - This purpose of this announcement is to select and award projects that focus on critical gaps in our understanding of reservoir behavior and optimal completion, stimulation and wastewater disposal strategies in order to increase and enable more cost-efficient and environmentally sound recovery from shale gas, tight oil, and tight gas resources. This can be achieved by developing technological solutions that enable effective resource recovery from fewer and less environmentally-impactful wells. This announcement is a critical component of the Department of Energy portfolio to advance the environmentally-sound development of domestic unconventional oil and natural gas resources. Application Due Date: 08/15/2017 at 8:00:00 PM Eastern Time.

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