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**To:** [Jessica Kump](#)  
**Subject:** Grant Opportunities for the week ending 24 August 2018  
**Date:** Friday, August 24, 2018 7:35:59 AM  
**Attachments:** [powerphplist.png](#)

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## Grant Opportunities for the week ending 24 August 2018

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We're always looking for **pictures of you and/or your students doing science or science outreach!** We would like to feature you on our Instagram feed. Please send any pictures and brief descriptions of the activity to me ([jan.taylor@wvresearch.org](mailto:jan.taylor@wvresearch.org)) and we'll put them up. Thanks!

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NSF  
NIH  
DOD  
NASA  
DOE  
EPA  
NOAA  
DHS

### National Science Foundation

**Division of Chemistry: Disciplinary Research Programs (CHE-DRP)** - This solicitation applies to nine CHE Disciplinary Chemistry Research Programs: Chemical Catalysis (CAT); Chemical Measurement and Imaging (CMI); Chemical Structure, Dynamics and Mechanisms-A (CSDM-A); Chemical Structure Dynamics and Mechanisms-B (CSDM-B); Chemical Synthesis (SYN); Chemical Theory, Models and Computational Methods (CTMC); Chemistry of Life Processes (CLP); Environmental Chemical Sciences (ECS); and Macromolecular, Supramolecular and Nanochemistry (MSN). All proposals submitted to these nine CHE Disciplinary Research Programs must be submitted through this solicitation, otherwise they will be returned without review. Full Proposal Window: October 1, 2018 - October 31, 2018 for All proposals to: Chemical Measurement and Imaging (CMI); Chemistry of Life Processes (CLP); Environmental Chemical Sciences (ECS); and Macromolecular, Supramolecular and Nanochemistry (MSN).

Research supported by the **Division of Materials Research (DMR)** focuses on advancing fundamental understanding of materials, materials discovery, design, synthesis, characterization, properties, and materials-related phenomena. DMR awards enable understanding of the electronic, atomic, and molecular structures, mechanisms, and processes that govern nanoscale to macroscale morphology and properties; manipulation and control of these properties; discovery of emerging phenomena of matter and materials; and creation of novel design, synthesis, and processing strategies that lead to new materials with unique characteristics. These discoveries and advancements transcend traditional scientific and engineering disciplines. The Division supports research and education activities in the United States through funding of individual investigators, teams, centers, facilities, and instrumentation. Projects supported by DMR are essential for the development of future technologies and industries that meet societal needs, as well preparation of the next generation of materials researchers. This solicitation applies to the following six DMR Topical Materials Research Programs that fund research and educational projects by individual investigators or small groups: Biomaterials (BMAT), Condensed Matter Physics (CMP), Electronic and Photonic Materials (EPM), Metals and Metallic Nanostructures (MMN), Polymers (POL), and Solid-State and Materials Chemistry (SSMC). It does not apply to the following two DMR Topical Materials Research Programs, which have their own solicitations: Ceramics (CER) ([NSF 16-597](#)) and Condensed Matter and Materials Theory (CMMT) ([NSF 16-596](#)). Full Proposal Window: October 1, 2018 - November 1, 2018.

The **Louis Stokes Alliances for Minority Participation (LSAMP)** program is an alliance-based program. The program's theory is based on the Tinto model for student retention. The overall goal of the program is to assist universities and colleges in diversifying the nation's science, technology, engineering and mathematics (STEM) workforce by increasing the number of STEM baccalaureate and graduate degrees awarded to populations historically underrepresented in these disciplines: African Americans, Hispanic Americans, American Indians, Alaska Natives, Native Hawaiians, and Native Pacific Islanders. The LSAMP program takes a comprehensive approach to student development and retention. Particular emphasis is placed on transforming undergraduate STEM education through innovative, evidence-based recruitment and retention strategies, and relevant educational experiences in support of racial and ethnic groups historically underrepresented in STEM disciplines. The LSAMP program also supports knowledge generation, knowledge utilization, program impact and dissemination type activities. The program seeks new learning and immediate diffusion of scholarly research into the field. Under this program, funding for STEM educational and broadening participation research activities could include research to develop new models in STEM engagement, recruitment and retention practices for all critical pathways to STEM careers or research on interventions such as mentoring, successful learning practices and environments, STEM efficacy studies, and technology use. Full Proposal Deadline Date(s): November 2, 2018 for Bridge to the Doctorate (BD) Activity; November 16, 2018 for STEM Pathways and Research Alliances; November 16, 2018 for New and Renewal LSAMP Pre-Alliance Planning, Bridge to the Baccalaureate (B2B), STEM Pathways Implementation-Only Projects; and January 25, 2019 for Louis Stokes Regional Centers of Excellence in Broadening Participation.

The **Operations Engineering (OE)** program supports fundamental research on advanced analytical methods for improving operations in complex decision-driven environments. Analytical methods include, but are not limited to, deterministic and stochastic modeling, optimization, decision and risk analysis, data science, and simulation. Methodological research is highly encouraged but must be motivated by problems that have potential for high impact in engineering applications. Application domains of particular interest to the program arise in commercial enterprises (e.g., production/manufacturing systems and distribution of goods, delivery of services), the public sector/government (e.g., public safety and security), and public/private partnerships (e.g., health care, environment and energy). The program also welcomes operations research in new and emerging domains and addressing systemic societal or technological problems. The OE program particularly values cross-disciplinary proposals that leverage application-specific expertise with strong quantitative analysis in a decision-making context. Proposals for methodological research that are not strongly motivated by high-potential engineering applications are not appropriate for this program. Full Proposal Accepted Anytime.

**Paleoclimate** supports research on the natural evolution of Earth's climate with the goal of providing a baseline for present variability and future trends through improved understanding of the physical, chemical, and biological processes that influence climate over the long-term. Competitive proposals will address specific aspects of scientific uncertainty for their proposed research. All four Divisions in the Geosciences Directorate have joined in creating the annual Paleo Perspectives on Climate Change (P2C2) competition in paleoclimate global change research. Researchers are encouraged to consider the **P2C2 competition** as a possible source of support for their global change research. Full Proposal Accepted Anytime.

The **Petrology and Geochemistry Program** supports basic research on the formation of planet Earth, including its accretion, early differentiation, and subsequent petrologic and geochemical modification via igneous and metamorphic processes. Proposals in this program generally address the petrology and high-temperature geochemistry of igneous and metamorphic rocks (including mantle samples), mineral physics, economic geology, and volcanology. Proposals that are focused on the development of analytical tools, theoretical and computational models, and experimental techniques for applications by the igneous and metamorphic petrology, and high temperature geochemistry and geochronology communities are also invited. Full Proposal Accepted Anytime.

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## **National Institutes of Health**

**CNS-Targeted Drug Delivery Strategies for HIV (R01 Clinical Trial Not Allowed)** - The purpose of this Funding Opportunity is to support studies with a focus on developing drug delivery strategies that target the Central Nervous System (CNS) for better suppression of Human Immunodeficiency Virus (HIV) and reservoir reduction. Applications are sought proposing multidisciplinary efforts to enhance delivery of antiretroviral (ARV) drugs and biologics into CNS compartments, maintaining a good balance between therapeutic effect and toxicity. Collaborative research partnerships are strongly encouraged but not required. Application Due Date(s): January 7, 2019; January 7, 2020; January 7, 2021.

**NHLBI TOPMed: Omics Phenotypes of Heart, Lung, and Blood Disorders (X01)** - This Funding Opportunity Announcement (FOA) invites applications to use NIH-funded omics capacity to carry out studies of the genetic basis and/or omics signatures of common, complex heart, lung, and blood disorders. Successful applicants will provide biospecimens for whole genome sequencing or other omics assays. No funding will be provided under this FOA. The omics data and related phenotypic data will be deposited in a public database such as dbGaP. Letter of Intent Due Date(s): 30 days prior to the application due date. Application Due Date(s): October 18, 2018, January 18, 2019.

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## **Department of Defense**

The Defense Advanced Research Projects Agency (DARPA) **Young Faculty Award (YFA)** program aims to identify and engage rising stars in junior faculty positions in academia and equivalent positions at non-profit research institutions and expose them to Department of Defense (DoD) and National Security challenges and needs. In particular, this YFA will provide high-impact funding to elite researchers early in their careers to develop innovative new research directions in the context of enabling transformative DoD capabilities. The long-term goal of the program is to develop the next generation of scientists and engineers in the research community who will focus a significant portion of their future careers on DoD and National Security issues. DARPA is particularly interested in identifying outstanding researchers who have previously not been performers on DARPA programs, but the program is open to all qualified applicants with innovative research ideas. Executive Summary Due Date: September 10, 2018, 4:00 p.m. FAQ Submission Deadline: November 8, 2018, 4:00 p.m. Full Proposal Due Date: November 13, 2018, 4:00 p.m.

**FY18 Defense Medical Research and Development Program (DMRDP)** - Applications to the Fiscal Year 2018 (FY18) Accelerating Innovation in Military Medicine (AIMM) initiative are being solicited for the Defense Health Agency (DHA) J9, Research and Development Directorate, by the U.S. Army Medical Research Acquisition Activity. The AIMM Research Award is intended to support highly creative and conceptually innovative high-risk research with the potential to accelerate critical discoveries or major advancements that will significantly impact military health and medicine.

AIMM initiative funding supports novel research concepts and other efforts that initiate or enhance potential game-changers that may not be supported by other funding mechanisms or core programs. Applications using synthetic or systems biology-based approaches or focused on autonomous healthcare are highly encouraged. Pre-Application (Preproposal): September 19, 2018. Preproposal is required; application submission is by invitation only. Application: January 2, 2019.

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## **NASA**

The [Astrophysics Research and Analysis Program \(APRA\)](#) program solicits basic research proposals for investigations that are relevant to NASA's programs in astronomy and astrophysics and includes research over the entire range of photons, gravitational waves, and particle astrophysics. Awards may be for up to four years' duration (up to five years for suborbital investigations), but shorter-term proposals are typical; four-year or five-year proposals must be well justified. Proposals for suborbital investigations are particularly encouraged. APRA investigations may advance technologies anywhere along the full line of readiness levels, from [Technology Readiness Level \(TRL\)](#) 1 through TRL9. The emphasis of this program element is on technologies and investigations that advance NASA astrophysics missions and goals. The APRA program seeks to support research that addresses the best possible (i) state-of-the-art detector technology development for instruments that may be proposed as candidate experiments for future space flight opportunities; (ii) science and/or technology investigations that can be carried out with instruments flown on suborbital sounding rockets, stratospheric balloons, or other platforms; and (iii) supporting technology, laboratory research, and/or (with restrictions) ground-based observations that are directly applicable to space astrophysics missions. Mandatory LOI: Jan 24, 2019. Step-2 proposal due by Mar 21, 2019.

[Rapid Response and Novel Research in Earth Science](#) - This program element solicits proposals that advance the goals and objectives of NASA's Earth Science Division by conducting unique research to investigate 1) unforeseen or unpredictable Earth system events and opportunities that require a rapid response, and 2) novel ideas of potential high merit and relevance for ESD science to advance Earth remote sensing that have not otherwise been solicited by NASA in the past three years. The research activities proposed must require rapid, near-term data acquisition, field work, and/or other such research activities. Given the significance of these events, rapid sharing of data and results are expected. Proposers are strongly encouraged to contact the NASA program officer(s) whose expertise best matches the proposal topic before submitting a proposal, in order to determine whether the proposed work is appropriate for this ROSES program element and if funding is likely to be available for a meritorious proposal. Rolling submissions through 03/29/2019.

[Topical Workshops, Symposia, and Conferences](#) - This program element solicits proposals for topical workshops, symposia, conferences, and other scientific/technical meetings (herein referred to as "events") that advance the goals and objectives of only the following SMD Divisions: Earth Science, Heliophysics, and Planetary Science. Proposals are not limited to traditional in-person meetings of scientists, but may also include requests for support of other methods of bringing together members of the scientific communities relevant to NASA, such as online discussion forums and web-based collaboration portals, especially in support of a traditional event. Proposals for multiple related events should be well justified. This program element is directed at and strictly limited to scientific and technical events of interest to SMD, not education, public outreach, or administrative conferences. Moreover, this program element may not support research or fellowship programs of any type. Rolling submissions through 03/29/2019.

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## **Department of Energy**

The HITEMMP ([High Intensity Thermal Exchange through Materials, and Manufacturing Processes](#)) program will develop novel approaches and technologies for design topologies, materials, and manufacturing of high temperature, high pressure, and highly compact heat exchangers. These heat exchangers will enable efficient and power dense power generation cycles for applications in transportation, electricity generation, and industrial sectors. If successful, the materials and manufacturing advances from the HITEMMP program may also yield broader benefits in other operating regimes, and in applications beyond heat exchangers and power cycles. The HITEMMP program targets heat exchangers to operate in environments where temperatures and pressures are simultaneously in excess of 800°C and 80 bar, with operating lifetimes of tens of thousands of hours. These heat exchangers must offer superior thermal performance and low pumping power requirements, and must also be cost competitive and durable (per metrics prescribed in Section I.D of the FOA). These performance goals are beyond the capability of any existing technologies, but ARPA-E believes that recent advances in materials, topological design methodologies, and manufacturing technologies can be leveraged to realize the desired extreme-environment heat exchanger capability. Specific developments include: The identification and development of materials capable of withstanding extreme temperature and pressure conditions while featuring attractive thermo-mechanical and manufacturability properties; Advances in additive and/or subtractive manufacturing techniques to enable the cost-effective realization of small structural feature sizes, smooth surface finishes, and other enabling heat exchanger characteristics; and The refinement and application of advanced design methodologies to leverage new material capabilities while incorporating manufacturing constraints. ARPA-E has issued this FOA to encourage the formation of multi-disciplinary teams to work to overcome the materials, design, and manufacturing technology barriers that have thus far prevented the realization of catalyzing the development of the desired extreme environment heat exchanger capability. ARPA-E has identified two categories of recuperator-type heat exchangers (> 800°C and > 1100°C, corresponding to metallic and to ceramic/composite

materials sets, respectively) as challenge problems. There is also an identical [SBIR/STTR RFP](#). Concept Paper Submission Deadline: 9/12/2018 9:30 AM ET. Full Application Submission Deadline: TBD.

[Innovative Design Concepts for Standard Modular Hydropower and Pumped-Storage Hydropower](#) - DOE's Water Power Technologies Office (WPTO) is committed to lowering the cost and build time of hydropower and pumped storage systems, further increasing their ability to provide essential reliability services and contribute to the resilience of the grid, and continuing to reduce their environmental impacts and permitting timelines. This Funding Opportunity Announcement (FOA) contains two Topic Areas. Topic Area 1: Facility Design Concepts for Standard Modular Hydropower Development. Topic Area 2: New Use Cases for Pumped-Storage Hydropower. Webinars: FOA Informational Webinar (Topic Areas 1 and 2) – September 5, 2018 at 12:30 PM EST.

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#### **U.S. Environmental Protection Agency**

[Advancing Actionable Alternatives to Vertebrate Animal Testing for Chemical Safety Assessment](#) - The U.S. Environmental Protection Agency (EPA), as part of its Science to Achieve Results (STAR) program, is seeking applications proposing research that will promote the development and use of alternative test methods and strategies that address the "3Rs" of toxicity testing: 1) reduce, 2) refine, and/or 3) replace vertebrate animal testing. For the purposes of this RFA, alternative test methods refer to those that incorporate the "3Rs" principles. Pertinent research includes approaches such as analog/read-across techniques, mathematical models, and tiered testing approaches that integrate evidence from multiple sources to help accomplish these goals. In addition to the development of new alternative test methods and strategies, translational science approaches that use available data to develop and/or advance actionable approaches for risk assessment of chemicals are also critical. In this context, approaches that facilitate the use of existing animal data sources to reduce, refine, or replace the need for new vertebrate animal tests are as welcome as those that provide new data streams. The research activities to be funded under this announcement are intended to advance the science underpinning the use of non-vertebrate test methods, and to develop actionable alternative approaches to: 1) developmental toxicity tests in humans; 2) reproductive toxicity tests in humans; and/or 3) ecotoxicity tests. Solicitation Closing Date: September 25, 2018, 11:59:59 pm Eastern Time.

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#### **NOAA**

[Climate Program Office FY 2019 Announcement](#) - CPO supports competitive research through three major program areas: Earth System Science and Modeling (ESSM); Climate and Societal Interactions (CSI); and Communication, Education and Engagement (CEE). Through this announcement, CPO is seeking applications for 10 individual competitions in FY 2019. Prior to submitting applications, investigators are highly encouraged to learn more about CPO and its programs, as well as specific program priorities for FY 2019. In addition, interactions, partnerships, or collaborations with NOAA Laboratories and Cooperative Institutes are encouraged. Letters of intent (LOIs) for all competitions should be received by email by 5:00 p.m. Eastern Time on September 10, 2018. Full applications for all competitions must be received by 5:00 p.m. Eastern Time, November 20, 2018.

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#### **Department of Homeland Security**

The purpose of this financial assistance action is to establish a pilot program to create the [Internet Security Information Sharing Analysis Organization \(IS-ISAO\)](#) (click on Related Documents tab) to explore and evaluate the most effective methods for bi-lateral cybersecurity information sharing, focusing on regional information sharing, communications and outreach, training and education, research and development for the improvement of State Local Tribal and Territorial (SLTT) government capabilities and capacity. The IS-ISAO will develop the full capability to perform information sharing and analysis of cybersecurity threats, gather, and disseminate government and critical infrastructure information, for the purpose of: Cyber threat analysis and information sharing; Education/training/workforce development; Technical research and development to support effective information sharing; and Share best practices. IS-ISAO will promote and develop a collaboration with SLTT, higher education, industry, not for profits, and government outreach. The IS-ISAO will maintain a data center that will allow for the reception of and secure storage of cyber threat information and artifacts, analysis programs and platforms, and interconnectivity with Information Sharing and Analysis Centers (ISACs) or other information sharing organizations. Application Submission Deadline: 09/14/2018 11:59 PM.

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