West Virginia Science & Research
HIGHER EDUCATION POLICY COMMISSION

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

The Division of Science and Research now has an Instagram page! We would love to have pictures of you and your students doing interesting things in the lab or in the field or anywhere you are doing science or even talking about science. These should be candid shots so perfection isn't needed.

Please send a brief description of what you're doing and who is doing it along with the photo. Send your photos to amanda.ramey@wvresearch.org. If you'd like to see what we've already posted, go here: https://www.instagram.com/wvresearch.

Unpaywall was launched earlier this month by the open source not-for-profit Impactstory – funded by the National Science Foundation and the Alfred P. Sloan Foundation – and it's already making a splash in the traditional publishing industry.

Install the plug-in on your Chrome or Firefox desktop browser, and it will start displaying a little lock symbol whenever you're on the landing page of an article in an academic journal. If the plug-in can find a freely accessible full-text copy of the paper you're looking at, the lock symbol turns from grey to green, and you can simply click on it to get the PDF. If the lock is gold, the article you're reading already has an open access license.
http://www.sciencealert.com/this-new-browser-plugin-lets-you-access-millions-of-scientific-papers-for-free

NSF
NIH
USDA
DOD

National Science Foundation

Manufacturing Machines and Equipment (MME) - The MME program supports fundamental research that enables the development of new and/or improved manufacturing machines and equipment, and optimization of their use, with a particular focus on equipment appropriate for the manufacture of mechanical and electromechanical devices, products, and systems featuring scales from microns to meters (proposals relating to nanomanufacturing should be submitted to the CMMI NanoManufacturing program, and those relating to the manufacture of electronic devices such as IC products should be submitted to the ECCS Division). Proposals relating to a wide range of manufacturing operations are encouraged, including both subtractive and additive processes, forming, bonding/joining, and laser processing. Proposals that will enable innovations in one or more of the Manufacturing USA institutes' focus areas (https://www.manufacturing.gov/nnmi-institutes/) and leverage the facilities, infrastructure and member companies of an institute, are also encouraged. Full Proposal Window: September 1, 2017 - September 15, 2017.

The Materials Engineering and Processing (MEP) program supports fundamental research addressing the processing and performance of engineering materials by investigating the interrelationship of materials processing, structure, properties and/or life-cycle performance for targeted applications. Materials processing proposals should focus on manufacturing processes that convert material into a useful form as either intermediate or final composition. These include processes such as extrusion, molding, casting, forming, deposition, sintering and printing. Proposed research should include the consideration of cost, performance, and feasibility of scale-up, as appropriate. Novel processes for the production of nanoscale materials (nanotubes, nanocrystals, etc.) are of interest. Process optimization studies without a fundamental scientific contribution are not supported. Research approaches which exploit knowledge of biological processes for the processing of non-biological materials, as well as the utilization of advanced computing techniques to enable major advances in Materials Engineering and Processing are encouraged. Full Proposal Window: September 1, 2017 - September 15, 2017.

The Mechanics of Materials and Structures program supports fundamental research in mechanics as related to the behavior of deformable solid materials and structures under internal and external actions. The program supports a

diverse spectrum of research with emphasis on transformative advances in experimental, theoretical, and computational methods. Submitted proposals should clearly emphasize the contributions to the field of mechanics. Proposals related to material response are welcome, including, but not limited to, advances in fundamental understanding of deformation, fracture, and fatigue as well as contact and friction. Proposals that relate to structural response are also welcome, including, but not limited to, advances in the understanding of nonlinear deformation, instability and collapse, and wave propagation. Proposals addressing mechanics at the intersection of materials and structures, such as, but not limited to, meta-materials, hierarchical, micro-architectured and low-dimensional materials are also encouraged. Full Proposal Window: September 1, 2017 - September 15, 2017.

The Mind, Machine and Motor Nexus (M3X) program supports fundamental research at the intersection of mind, machine and motor. A distinguishing characteristic of the program is an integrated treatment of human intent, perception, and behavior in interaction with embodied and intelligent engineered systems and as mediated by motor manipulation. M3X projects should advance the holistic analysis of cognition and of embodiment as present in both human and machine elements. This work will encompass not only how mind interacts with motor function in the manipulation of machines, but also how, in turn, machine response and function may shape and influence both mind and motor function. The M3X program seeks to support the development of theories, representations, and working models that draw upon and contribute to fundamental understanding within and across diverse fields, including but not limited to systems science and engineering; mechatronics; cognitive, behavioral and perceptual sciences; and applied computing. Research funded through this program is expected to lead to new computable theories and to the physical manifestation of these theories. Full Proposal Window: September 1, 2017 - September 15, 2017.

Nanomanufacturing is the production of useful nano-scale materials, structures, devices and systems in an economically viable manner. The NSF Nanomanufacturing Program supports fundamental research in novel methods and techniques for batch and continuous processes, top-down (addition/subtraction) and bottom-up (directed self-assembly) processes leading to the formation of complex heterogeneous nanosystems. The program supports basic research in nanostructure and process design principles, integration across length-scales, and system-level integration. The Program leverages advances in the understanding of nano-scale phenomena and processes (physical, chemical, electrical, thermal, mechanical and biological), nanomaterials discovery, novel nanostructure architectures, and new nanodevice and nanosystem concepts. It seeks to address quality, efficiency, scalability, reliability, safety and affordability issues that are relevant to manufacturing. To address these issues, the Program encourages research on processes and production systems based on computation, modeling and simulation, use of process metrology, sensing, monitoring, and control, and assessment of product (nanomaterial, nanostructure, nanodevice or nanosystem) quality and performance. Full Proposal Window: September 1, 2017 - September 15, 2017.

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 Window: September 1, 2017 - September 15, 2017.

The overall goal of the Structural and Architectural Engineering and Materials (SAEM) program is to enable sustainable buildings and other structures that can be continuously occupied and/or operated during the structure's useful life. The SAEM program supports fundamental research for advancing knowledge and innovation in structural and architectural engineering and materials that promotes a holistic approach to analysis and design, construction, operation, maintenance, retrofit, and repair of structures. For buildings, all components including the foundation-structure-envelope (the façade, curtain-wall, windows, and roofing) and interior systems (flooring, ceilings, partitions walls), are of interest to the program. The SAEM program encourages the integration of research with knowledge dissemination and activities that can lead to broader societal benefit for provision of sustainable structures. Research in new engineering concepts and design paradigms for buildings that have significantly reduced dependence and interdependence on municipal infrastructure through, for example, building components that can aid in minimizing

fresh water consumption or can promote self-heating-cooling-ventilating, is encouraged. In addition, the program targets research in building systems that can be reconfigurable for rapid construction, deconstruction, and disassembly; repurposing; and reliable and resilient. Full Proposal Window: September 1, 2017 - September 15, 2017.

The Systems Science (SYS) program supports fundamental research leading to a theoretical foundation for design and systems engineering. In particular, the Systems Science program seeks intellectual advances in which underlying theories (such as probability theory, decision theory, game theory, organizational sociology, behavioral economics or cognitive psychology) are integrated and abstracted to develop explanatory models for design and systems engineering in a general, domain-independent fashion. Ideally, the explanatory models, derived from the underlying theoretical foundations will lead to testable hypotheses. Based on collected evidence supporting or falsifying the hypotheses, new insights are gained allowing the explanatory models to be refined or updated. Full Proposal Window: September 1, 2017 - September 15, 2017.

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National Institutes of Health

Innovation Grants to Nurture Initial Translational Efforts (IGNITE): Assay Development and Therapeutic Agent Identification and Characterization to Support Therapeutic Discovery (R21/R33) - This funding opportunity announcement (FOA) encourages research grant applications to develop in vitro and/or ex vivo assays and conduct iterative screening efforts to identify and characterize potential therapeutic agents for neurological disorders. This FOA is part of a suite of Innovation Grants to Nurture Initial Translational Efforts (IGNITE) to advance projects to the point where they can meet the entry criteria for NINDS Cooperative Research to Enable and Advance Translational Enterprises program (CREATE) for biologics, biotechnology products, the Blueprint Neurotherapeutics Network (BPN) for small molecules, or other translational program. Companion Funding Opportunities are RFA-NS-16-013 R21/R33 Phased Innovation Award and PAR-15-071 R21/R33 Phased Innovation Award. Application Due Date(s): Standard dates apply.

Neurobiology of Migraine (R21) - This Funding Opportunity Announcement (FOA) is issued by the National Institute of Neurological Disorders and Stroke (NINDS) in conjunction with the NIH Pain Consortium. It solicits R21 grant applications from institutions/organizations to perform innovative research that will elucidate the mechanisms underlying migraine, expand our current knowledge of the role of genetic, physiological, biopsychosocial, and environmental influences in migraine susceptibility and progression, and explore new therapeutic targets and therapies for acute migraine management and longer term prevention. Companion Funding Opportunity is PA-14-068, R01 Research Project Grant. Application Due Date(s): Standard dates apply.

Promoting NICHD Areas of Research for HIV/AIDS in Maternal and Child Health (R01) - The purpose of this Funding Opportunity Announcement (FOA) is to stimulate HIV/AIDS research by addressing scientific areas of primary interest to NICHD, Maternal and Pediatric Infectious Disease Branch (MPIDB) and the Office of AIDS Research (OAR). Application Due Date(s): Standard dates apply.

Paul B. Beeson Emerging Leaders Career Development Award in Aging (K76) - This Funding Opportunity Announcement (FOA) invites early-stage physician and other health-professional investigators with a commitment to aging to apply for this award to advance their research and leadership skills in their specialty and in the broader field of aging and geriatrics research. The National Institute on Aging is pursuing this initiative to recruit new investigators who have begun to establish research programs and who, through this award, will be ready to assume leadership roles in their field of expertise and will be poised to change theory, practice and health outcomes related to the health of older individuals. Unlike other mentored K awards, candidates for this award must have received competitively awarded research support as a PD/PI at the faculty level or have otherwise leveraged faculty-level research support to develop an independent line of research. They must show evidence of leadership in the clinical or research domain. Application Due Date(s): October 19, 2017.

Novel Cell Non-autonomous Mechanisms of Aging (R01) - This FOA solicits applications on novel studies of cell non-autonomous mechanisms of aging. The goal of this FOA is to support applications that will lead to in-depth understanding of the mechanisms that produce cell non-autonomous aging signals: what they are, how they are generated from cell autonomous aging, how they are released from cells, how they are transported or communicated to other cells, and how they elicit aging upon reaching their target cells. Research supported by this FOA should lead to new insights and better understanding of the importance of cell non-autonomous mechanisms in aging at a tissue, system, or organismal level. Letter of Intent Due Date(s): September 3, 2017. Application Due Date(s): October 3, 2017.

Innovation for HIV Vaccine Discovery (R01) - The purpose of this Funding Opportunity Announcement (FOA) is to support high risk, high impact, early discovery research on vaccine approaches to prevent acquisition of or ongoing

infection by HIV. In keeping with the high risk, high impact nature of this research, this FOA supports a Go/No-Go approach to funding high risk research, which is significantly different from most R01 projects. Continued funding for the full award duration is dependent upon achieving negotiated Go/No-Go criteria by the end of Year 2. Letter of Intent Due Date(s): 30 days prior to the application due date. Application Due Date(s): August 1, 2017; August 1, 2018; August 1, 2019.

Nasal Delivery of CNS Therapeutics (R43/R44) - The purpose of this Small Business Technology Transfer (STTR) RFA is to develop a nasal delivery formulation that reliably delivers of a therapeutic (e.g., peptides, antibodies, RNAi, or pharmacotherapeutics), at a physiologically relevant concentration, into the central nervous system (CNS). Companion Funding Opportunity is RFA-DA-18-007, STTR R41/R42- Phase I, Phase II, and Fast Track. Letter of Intent Due Date(s): July 24, 2017. Application Due Date(s): August 23, 2017.

Translational Outcomes Project in Neurotrauma (TOP-NT) (UG3/UH3) - The purpose of this FOA is to support the development and validation of pathophysiologically based preclinical outcome measures or functional markers that align closely with practical clinical assessments in spinal cord injury (SCI) and/or traumatic brain injury (TBI). Bedside knowledge and experience will be leveraged to create better assessment tools for preclinical studies, and the resulting data will be made available to researchers. The goal is to improve the value of preclinical studies to inform clinical diagnoses and prognoses and therapeutic translation. Letter of Intent Due Date(s): 30 day prior to the application due date. Application Due Date(s): August 21, 2017.

Obesity and Asthma: Awareness and Self- Management (R01) - The purpose of this funding opportunity announcement is to stimulate research to examine the relationship between asthma, obesity and self-management. The prevalence of both asthma and obesity has significantly risen in the past few decades. Although the association between these two conditions has been found in many studies, the exact mechanisms for how this association arises are unresolved to include self-management and achieving control. Because both of these conditions have their beginnings in early life, an aspect of the association between them that requires more understanding is their common exposures in early life and transition into adulthood. Studies that investigate the molecular pathways linking asthma and obesity are encouraged as long as the studies describe how this relates to self-management. In addition, intervention studies targeting asthma or obesity and their effects on each other, and possible mechanisms of action and effect on behavior, are encouraged. Application Due Date(s): Standard dates apply.

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. Application Due Date(s): October 19, 2017; October 18, 2018.

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U.S. Department of Agriculture

Distance Education Grants Program for Institutions of Higher Education in Insular Areas - The purpose of this program is strengthen the capacity of Institutions of Higher Education in Insular Areas to carry out resident instruction, curriculum, and teaching programs in the food and agricultural sciences through distance education technology. The Distance Education Grants Program for Institutions of Higher Education in Insular Areas (DEG) is a NIFA-administered competitive grants program focused on improving formal, postsecondary agricultural sciences education. Closing Date: Friday, June 16, 2017.

Food Safety Outreach Competitive Grant Program - In FY 2017, the Food Safety Outreach Program will focus on delivery of customized training to members of the target audiences. New projects will focus on, but are not limited to, addressing knowledge and resource gaps for the target audience in the areas of pre- and post-harvest water testing and sampling, soil amendments, developing supply chain programs, and/or developing food safety plans. The program will continue to fund projects that develop bilingual and culturally appropriate training resources. Closing Date: Tuesday, June 6, 2017.

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Department of Defense

Project on Advanced Systems and Concepts for Countering Weapons of Mass Destruction (PASCC) CALL 0002 - The USAFA is seeking unclassified research white papers and proposals (if requested) that do not contain proprietary information. If proprietary information is submitted it is the offerors' responsibility to mark the relevant portions of their proposal as specified in USAFA-PASCC-BAA-2016. The United States Air Force's Institute for ational Security Studies (INSS), in partnership with PASCC, performs a range of research to investigate topics of interest to the security studies community. Investigations and research will focus on expanding knowledge related to countering weapons of mass destruction (WMD) and weapons of mass effect (WME). The program solicits innovative proposals for research on WMD/WME counterproliferation, nonproliferation, and strategy. The phrase "security studies research" refers to investigations in all disciplines, fields, and domains that (1) are involved in expanding knowledge for national defense, and (2) could potentially improve policy and international relations for combating WMD/WME. Disciplines include, but are not limited to: political science, sociology, history, biology, chemistry, economics, homeland defense, and public policy. This CALL is directed toward the research areas listed within the CALL document. Projects must be new research efforts. Proposals for the continuation of existing research projects funded under previous grant or cooperative agreement awards are not desired. **WHITE PAPER DUE DATE AND TIME:** The due date for white papers submitted in response to this CALL is no later than 4:00 PM MST on **15 June 2017**. Proposals by request only.

Communications and Networking Discovery and Invention - The goal of the Communications and Networking Program within the Office of Naval Research (ONR 311) is to support the Navy's Information Warfare vision by developing measurable advances in technology that can directly enable and enhance end-to-end connectivity and quality-of-service for mission-critical information exchange among such widely dispersed naval, joint, and coalition forces. The vision is to provide high throughput robust communications and networking to ensure all warfighters -- from the operational command to the tactical edge -- have access to information, knowledge, and decision-making necessary to perform their assigned tasks. White Papers due no later than June 26, 2017 04:00 PM EST. Full Proposals will be accepted until September 25, 2017 04:00 PM EST.

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