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.

SBIR workshop focuses on federal funding opportunities

Entrepreneurs and small business owners who want to advance innovative concepts through the commercialization process can explore federal funding opportunities during an SBIR Lunch & Learn April 18 at the Robert C. Byrd Institute (RCBI) in Huntington.

Innovators across the country (and right here in West Virginia) are accessing millions of federal dollars, resulting in important research that can be converted into new products, technologies and services while also creating jobs. SBIR and STTR grants allow businesses to conduct feasibility studies in Phase I (up to $150,000) and develop prototypes in Phase II (up to $1 million) for eventual commercialization in Phase III using non-federal dollars.

Our workshop will include an overview of the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) grant programs by George Murray, deputy district director of the U.S. Small Business Administration. Participants also will hear about the application process and the experience of working with a federal agency from a recent SBIR recipient here in West Virginia. Anne Barth, executive director of TechConnect West Virginia, will provide an overview of that organization's program to assist applicants throughout the SBIR application process.

This SBIR Lunch & Learn is sponsored by RCBI and TechConnect West Virginia. The free event includes lunch and will run from noon to 2 p.m. on April 18. For more information, contact Mike Friel at 304.781.1686.

Register by Friday, April 14, at www.rcbi.org/go/sbir.

National Science Foundation

Joint NSF/NIH Initiative on Quantitative Approaches to Biomedical Big Data (QuBBD) - Coupled with the rapid growth in computing and infrastructure, researchers now have the ability to collect, store, and analyze vast amounts of health- and disease-related data from biological, biomedical, behavioral, social, environmental, and clinical studies. The explosion in the availability of biomedical big data from disparate sources, and the complex data structures including images, networks, and graphs, pose significant challenges in terms of visualization, modeling, and analysis. While there have been some encouraging developments related to foundational mathematical, statistical, and computational approaches for big data challenges over the past decade, there have been relatively few opportunities for collaboration on challenges related to biomedical data science. The National Science Foundation (NSF) and the National Institutes of Health (NIH) recognize that fundamental questions in basic, clinical, and translational research could benefit greatly from multidisciplinary approaches that involve experts in quantitative disciplines such as mathematics, statistics, and computer science. The Quantitative Approaches to Biomedical Big Data Program is designed to support research that addresses important application areas at the

intersection of the biomedical and data sciences by encouraging inter- and multi-disciplinary collaborations that focus on innovative and transformative approaches to address these challenges. Full Proposal Deadline Date: September 12, 2017.

The purpose of the Focused Research Group in Mathematics activity is to support collaborative groups employing innovative methods to solve specific, major research challenges in the mathematical sciences. A major challenge is an outstanding problem of significant importance that requires the focused and synergistic efforts of a collaborative group to solve, and whose solution will have wide impacts in the mathematical sciences and potentially in other areas. Groups may include, in addition to statisticians and mathematicians, researchers from other science and engineering disciplines appropriate for the proposed research. Risky projects are welcome. Interdisciplinary projects are welcome. Projects should be timely, limited in duration to up to three years, and substantial in their scope and impact for the mathematical sciences. Funded projects that show substantial progress in their first two years may be recommended for a creativity extension for up to an additional two years. Full Proposal Deadline Date: September 13, 2017.

The EHR Core Research (ECR) program of fundamental research in STEM education provides funding in critical research areas that are essential, broad and enduring. EHR seeks proposals that will help synthesize, build and/or expand research foundations in the following focal areas: STEM learning, STEM learning environments, STEM workforce development, and broadening participation in STEM. The ECR program is distinguished by its emphasis on the accumulation of robust evidence to inform efforts to (a) understand, (b) build theory to explain, and (c) suggest interventions (and innovations) to address persistent challenges in STEM interest, education, learning, and participation. Full Proposal Deadline Date: September 14, 2017.

Biomechanics and Mechanobiology (BMMB) - The BMMB Program supports fundamental research in biomechanics and mechanobiology. An emphasis is placed on multiscale mechanics approaches in the study of organisms that integrate across molecular, cell, tissue, and organ domains. The influence of in vivo mechanical forces on cell and matrix biology in the histomorphogenesis, maintenance, regeneration, and aging of tissues is an important concern. In addition, the relationships between mechanical behavior and extracellular matrix composition and organization are of interest. Funded projects may include theoretical, computational, and experimental approaches. The program encourages the consideration of diverse living tissues as smart materials that are self-designing. Full Proposal Window: September 1, 2017 - September 15, 2017.

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National Institutes of Health

Dysregulation of Immune Cell Regulatory Pathways by Mtb in the Context of HIV Infection (R61/R33) - The purpose of this funding opportunity announcement (FOA) is to invite applications to support innovative preclinical research to identify Mycobacterium tuberculosis (Mtb)-mediated changes in key immune cell regulatory pathways in the context of HIV infection and evaluate strategies to reverse these changes to treat TB and TB/HIV infection, limit long-term disease associated tissue damage, and/or potentiate vaccine effectiveness. Letter of Intent Due Date(s): July 1, 2017. Application Due Date(s): August 1, 2017.

Effects of Cannabis Use and Cannabinoids on the Developing Brain (R03) - This Funding Opportunity Announcement (FOA) encourages Small Research Grant (R03) applications from institutions and organizations that propose to study the effects and functional consequences of cannabis and cannabinoid exposures on the developing brain, from pre-, peri-, post-natal development through young adulthood in animal models and humans. Topics of interest pertaining to this PA include, but are not limited to: molecular and cellular mechanisms of cannabis/cannabinoid effects on the developing brain; long term functional consequences of cannabis/cannabinoid exposure on learning and memory, cognitive and emotional development. Companion Funding Opportunities are PA-14-162, R21 Exploratory/Developmental Grant and PA-14-163, R01 Research Grant. Application Due Date(s): Standard dates apply.

NINDS Program Project Grant (P01) - This funding opportunity announcement (FOA) is issued by the National Institute of Neurological Disorders and Stroke to enable submission of program project grant applications that propose to conduct innovative, interactive research to answer significant scientific questions that are important for the mission of NINDS, via a synergistic collaboration between outstanding scientists who might not otherwise collaborate. The program project grant is designed to support research in which the funding of several interdependent highly meritorious projects as a group offers significant scientific advantages over support of these same projects as individual research grants. Application Due Date(s): Standard dates apply.

Cooperative Agreement to Develop Targeted Agents for Use with Systemic Agents Plus Radiotherapy (U01) - The purpose of this Funding Opportunity Announcement (FOA) is to invite cooperative agreement (U01) applications that propose studies to enhance pre-clinical in vitro and in vivo testing of NCI-prioritized molecularly targeted anti-cancer agents for use with radiation therapy combined with systemic chemotherapy. These studies should generate validated high-quality preclinical data on the effects of molecular therapeutics when added to standard-of-care therapies for solid tumors. The specific purpose is to provide a more rational basis for prioritizing those NCI-supported investigational new drugs or agents (INDs) most likely to have clinical activity with chemo-radiotherapy. The overall goal is to accelerate the pace at which combined modality treatments with greater efficacy are identified and incorporated into standard practices for treatments of patients with solid tumors. Letter of Intent Due Date(s): 45 days prior to the application due date. Application Due Date(s): New Dates July 14, 2017; November 14, 2017.

Integrative Computational Biology for Analysis of NHLBI TOPMed Data - The purpose of this Funding Opportunity Announcement (FOA) is to support integrated analysis of whole genome, large scale -omic data generated by the NHLBIs Trans-Omics for Precision Medicine (TOPMed) program and associated phenotype and clinical data using systems approaches. Ultimately, these studies will advance our understanding of the molecular underpinnings of heart, lung, blood, and sleep disease. Letter of Intent Due Date(s): 30 days prior to application due date. Application Due Date(s): July 6, 2017 and July 6, 2018.

Expanding Medication Assisted Treatment for Opioid Use Disorders in the Context of the SAMHSA Opioid STR Grants (R21/R33) - The purpose of this FOA is to solicit applications proposing to test approaches for expanding medication assisted treatment (MAT) for opioid use disorder (OUD) in the general health care sector or linking individuals with OUDs who receive naloxone for the reversal of overdose to MAT in the context of states plans for use of the funds authorized under the 21st Century Cures Act. Letter of Intent Due Date(s): 30 days prior to the application due date. Application Due Date(s): June 20, 2017.

Food Specific Molecular Profiles and Biomarkers of Food and Nutrient Intake, and Dietary Exposure (R01) - The purpose of this Funding Opportunity Announcement (FOA) is to promote research on food specific molecular signatures and biomarkers of dietary consumption and to promote collaborative interactions among NIH and USDA supported nutrition researchers. Letter of Intent Due Date(s): 30 days prior to the application due date. Application Due Date(s): May 27, 2017, September 27, 2017.

From Genomic Association to Causation: A Convergent Neuroscience Approach for Integrating Levels of Analysis to Delineate Brain Function in Neuropsychiatry (R01) - The primary objective of this FOA is to stimulate innovative Convergent Neuroscience (CN) approaches to establish causal and/or probabilistic linkages across contiguous levels of analysis (e.g., gene, molecule, cell, circuit, system, behavior) in an explanatory model of psychopathology. In particular, applicants should focus on how specific constituent biological processes at one level of analysis contribute to quantifiable properties at other levels, either directly or as emergent phenomena. Although not required, it is preferable that applications link at least three levels of analysis and include an emphasis on genetics. The projects under this FOA will develop novel methods, theories, and approaches through a CN team framework, bringing together highly synergistic inter/transdisciplinary teams from neuroscience and the orthogonal fields of the physical sciences (e.g., data/computational science, physics, engineering, mathematics). Successful teams will combine, expand upon, or develop conceptual frameworks and theoretical approaches, and build explanatory computational models that connect contiguous levels of analysis. Such frameworks, theories, and computational explanatory models should be validated through experimental approaches to elucidate biological underpinnings of complex behavioral (including cognitive and affective) outcomes in psychopathology. Additionally, a goal of this program is to advance research in CN by creating a shared community framework of resources which may be used by the broader research community to further research, as such, a successful team will be expected to have a robust plan for sharing data and other resources. Companion Funding Opportunities are PAR-17-252, Collaborative R01, Research Project Grant; PAR-17-179, U01, Research Project – Cooperative Agreements; and PAR-17-176, Collaborative U01, Collaborative Research Project – Cooperative Agreements. Letter of Intent Due Date(s): 30 days prior to the application due date. Application Due Date(s): Standard dates apply.

Lasker Clinical Research Scholars Program Si2/R00 - This FOA encourages applications for the Lasker Clinical Research Scholars Program for the purpose of supporting the research activities during the early stage careers of independent clinical researchers. Application Due Date(s): August 25, 2017.

Small Business Innovation Research on Rare Musculoskeletal, Rheumatic and Skin Diseases (SBIR) (R43) - This Funding Opportunity Announcement (FOA) solicits Small Business Innovation Research (SBIR) grant applications from small

business concerns (SBCs) that propose preclinical studies to advance the development of biomarkers or treatments for rare musculoskeletal, rheumatic or skin diseases. Rare diseases have a prevalence of fewer than 200,000 affected individuals in the United States. Also eligible for potential funding through this initiative are studies of FDA-designated orphan products for musculoskeletal, rheumatic or skin diseases. Letter of Intent Due Date(s): June 10, 2017. Application Due Date(s): July 10, 2017.

Neuroimmune Signaling in Substance Use Disorders (R01) - The purpose of this Funding Opportunity Announcement (FOA) is to encourage the submission of research project grant applications that propose to examine the molecular, cellular, circuit, and behavioral responses to neuroimmune signaling within the central nervous system (CNS) as it pertains to the initiation, escalation, and maintenance of, and the neurological consequences resulting from, substance use disorders (SUDs), and to abstinence and withdrawal from, and subsequent relapse of, drug use. The goal of this understudied area of research is to determine the extent to which neuroimmune responses contribute to or protect against current and future risk and consequences of SUDs. Companion Funding Opportunity is PA-14-083, R21 Exploratory/Developmental Grant. Application Due Date(s): Standard dates apply.

Clinical Evaluation of Adjuncts to Opioid Therapies for the Treatment of Chronic Pain (R01) - This announcement aims to fund applications designed to assess the clinical value of adjuncts prescribed to chronic pain patients together with opioid analgesics. Adjuncts of interest are either approved by the FDA or have previously been studied as an Investigational New Drug. Studies with adjuncts of interest should be focused on enhancing analgesia, rather than on reducing an adverse effect. A secondary purpose is to increase awareness among opioid prescribers of the potential value of adjunctive therapies by focused data dissemination. Letter of Intent Due Date(s): Thirty days before application due date. Application Due Date(s): Standard dates apply.

Reductions in Illicit Drug Use and Functional Outcomes (R21/R33) - The purpose of this Funding Opportunity Announcement (FOA) is to encourage applications for Phased Innovation (R21/R33) projects to determine whether reductions in illicit drug use are associated with positive changes in health-related and other functional outcomes in individuals with substance use disorders (SUDs). Functional outcomes include, for example, reductions in morbidity, mortality, criminal justice involvement, overall healthcare expenditures. This FOA provides support for up to two years (R21 phase) for research planning activities and feasibility studies, followed by possible transition to expanded research support (R33 phase). The transition to the R33 phase will be determined by NIH program evaluation of successful achievement of the milestones set for the R21 phase. The ultimate goal of this FOA is to provide evidence that will enable regulatory authorities to accept reductions in illicit drug use as a valid outcome measure in clinical trials of pharmacotherapies for the treatment of SUDs. Letter of Intent Due Date(s): Thirty days before application due date. Application Due Date(s): Standard dates apply.

Identification of Reproductive-Tract Specific Proteins/Transcripts for the Development of Male and Female Non-Hormonal Contraceptives (R01) - The purpose of this funding opportunity announcement (FOA) is to encourage the use of bioinformatics combined with analytics to identify reproductive-tract specific transcripts and proteins for potential development as non-steroidal male and female contraceptives. Letter of Intent Due Date(s): 30 days prior to the application due date. Application Due Date(s): June 30, 2017.

Point of Care Technologies for the Evaluation and Management of Obstetrics, Neonatal, and Pediatric Critical Care Patients, and for Patients with Disorders of Reproductive Tract and Infertility (R43) - The purpose of this Funding Opportunity Announcement (FOA) is to support SBIR research projects using advanced technologies (e.g., bio-chips, microfluidics, and mobile technologies) to develop novel point-of-care (POC) devices and implement existing technologies in clinical settings with a goal to guide diagnostic and therapeutic efforts for obstetric, neonatal, pediatric critical care and reproductive disorders. Letter of Intent Due Date(s): 30 days prior to the application due date. Application Due Date(s): June 30, 2017.

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NASA

Planetary Data Archiving, Restoration, and Tools - The Planetary Data Archiving, Restoration, and Tools (PDART) program solicits proposals to generate higher-order data products, archive and restore data sets or products, create or consolidate reference databases, generate new reference information, digitize data, and develop or validate software tools. The objective of this Program Element is to increase the amount and quality of digital information and data products available for planetary science research and exploration, and to produce tools that would enable or enhance future scientific investigations. Although it is expected that a small amount of data

analysis, interpretation, or modeling may be performed to validate any generated products, this Program Element does not accept proposals in which the main focus is hypothesis-based science. PDART17 Step-1 Proposals Due by May 11, 2017 and Step-2 Proposals are due by July 12, 2017.

Heliophysics Technology and Instrument Development for Science - Advancement in Heliophysics science requires the development and application of new technologies that will yield the next generation of innovative instruments. Laboratory research can be a relevant supplement to instrumentation and to the science of Heliophysics. The ability to achieve significant progress toward the scientific and technical challenges in Heliophysics in the coming years is greatly enhanced through the H-TIDeS program. These investigations are carried out in support of NASA's Heliophysics Science strategic objective "to understand the Sun and its interactions with Earth and the solar system, including space weather" and three overarching science goals, from the Science Mission Directorate Science Plan for 2014 (https://science.nasa.gov/about-us/science-strategy). HTIDS17 Step-1 Proposals Due by May 17, 2017 and Step-2 proposals due by July 20, 2017.

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U.S. Department of Agriculture

Women and Minorities in Science, Technology, Engineering, and Mathematics Fields Program (WAMS) - This program supports research and extension projects that have robust collaborations to increase the participation of women and underrepresented minorities from rural areas in science, technology, engineering, and mathematics fields that are relevant to USDA priorities identified by the Secretary: (i) Promotion of a safe, sufficient, and nutritious food supply for all Americans and for people around the world; (ii) Sustainable agricultural policies that foster economic viability for small and mid-sized farms and rural businesses, protect natural resources, and promote value-added agriculture; (iii) national leadership in climate change mitigation and adaptation; (iv) Building a modern workplace with a modern workforce; and (v) Support for 21st century rural communities. Closing Date: Thursday, June 8, 2017.

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Department of Defense

Lifelong Learning Machines (L2M) - DARPA is soliciting highly innovative research proposals for the development of fundamentally new machine learning approaches that enable systems to learn continually as they operate and apply previous knowledge to novel situations. Current AI systems only compute with what they have been programmed or trained for in advance; they have no ability to learn from data input during execution time, and cannot adapt on-line to changes they encounter in real environments. The goal of Lifelong Learning Machines (L2M) is to develop substantially more capable systems that are continually improving and updating from experience. Abstract Due Date: May 3, 2017 at 1:00PM. FAQ Submission Deadline: June 5, 2017 at 1:00PM. Proposal Due Date: June 21, 2017 at 1:00PM.

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