January 22, 2025

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Purdue's open limited submission competitions, templates, and limited submission policy may be found at http://www.purdue.edu/research/funding-and-grant-writing/limited-submissions.php. Please contact Sue Grimes (sgrimes@purdue.edu) with any questions.

1. **Limited Submissions:**
Preproposals should be submitted via Purdue's InfoReady portal (https://purdue.infoready4.com/). For any case in which the number of preproposals received is no more than the number of proposals allowed by the sponsor, the OOR will notify the PI(s) that an internal competition will be unnecessary. Questions should be addressed to OORlimited@purdue.edu.

Limited Submission: ***DOE-SC Research in Basic Plasma Science and Engineering*** The FES Discovery Plasma Science: Plasma Science and Technology–General Plasma Science (GPS) program seeks new or renewal single-investigator or small-group applications to carry out hypothesis-driven frontier-level research in basic plasma science and engineering. This program aims to develop accurate descriptions of the complex behavior of the plasma state, to push it into new regimes that expand our concept of what constitutes a plasma, to design experiments and diagnostics to explore these states, and to validate theoretical models. Only ***two*** applications are allowed as lead.

Internal deadline: February 3 - Pre-proposal due in InfoReady

Sponsor deadline: February 14 – Pre-application; April 4 - Application

Limited Submission: ***DOE-SC EXPRESS:2025 Exploratory Research for Extreme-Scale Science*** The DOE SC program in Advanced Scientific Computing Research (ASCR) hereby announces its interest in basic research to explore potentially high-impact approaches in scientific computing and extreme-scale science. Significant innovation will be required in the development of effective paradigms and approaches for realizing the full potential of scientific computing from emerging technologies. Proposed research should not focus on a specific science use case, but rather on creating the body of knowledge and understanding that will inform future advances in extreme-scale science. Consequently, the funding from this NOFO is not intended to incrementally extend current research in the area of the proposed project. It is expected that the proposed projects will significantly benefit from the exploration of innovative ideas or from the development of unconventional approaches. EXPRESS opportunities exist for the following research topics: A) Quantum computation based on topological concepts; B) Local and Campus-Area Quantum Networking for Next Generation Parallel Quantum Computing; C) Neuromorphic Computing; D) Computational Physical Systems; and E) Deep Understanding of AI Models. Only ***two*** applications are allowed ***per research area***.

Internal deadline: February 3 - Pre-proposal due in InfoReady

Sponsor deadlines: February 21 – Pre-application; April 25 - Application

Limited Submission: ***DOE-SC Scientific Discovery through Advanced Computing (SciDAC): Partnerships in Basic Energy Sciences*** The DOE SC programs in Basic Energy Sciences (BES) and Advanced Scientific Computing Research (ASCR) announce their interest in receiving applications from interdisciplinary teams to establish partnerships under the Scientific Discovery through Advanced Computing (SciDAC) program in specific targeted

topic areas that relate to the BES and ASCR missions. Partnerships between domain scientists in the fields of materials science, condensed matter physics, chemical sciences, geosciences, energy-related biosciences, applied mathematics, and computer science will be critical to accelerate the scientific discovery process through revolutionary advances in models, mathematics, algorithms, data, and computing. The integrated teams will engage with the SciDAC Institutes and make full use of DOE's classical high-performance computing capabilities. In addition, applications must focus on one of three topics: Complex dynamical systems for energy-relevant chemical and/or physical systems and materials; Reliable and explainable Artificial Intelligence for chemical and/or physical mechanism extraction from phenomena; and Foundation Models for chemical and materials sciences. Only ***two*** applications are allowed per institution as lead.

Internal deadline: February 10 - Pre-proposal due in InfoReady

Sponsor deadlines: February 25 – Pre-application; May 6 - Application

Limited Submission: ***DOE The Circular Supply Chains Accelerator*** This NOFO seeks to assemble a team that will conduct analysis, connect broad groups of stakeholders within multiple application spaces, and socialize EERE-developed innovations across a variety of industries to advance those innovations. The Accelerator's role will include advancing the entire circularity field's understanding of emerging technologies, thereby enabling the identification of potential roadblocks to deployment and opportunities to reduce the risks of technology commercialization. Only ***one*** application is allowed as lead.

Internal deadline: February 17 - Pre-proposal due in InfoReady

Sponsor deadlines: July 18

Limited Submission: ***USDA-NIFA Women and Minorities in Science, Technology, Engineering, and Mathematics Fields Program (WAMS)*** The purpose of this program is to support research, education/teaching, and extension projects that increase participation by women and underrepresented minorities from rural areas in STEM. NIFA intends this program to address educational needs within broadly defined areas of food and agricultural sciences. Applications recommended for funding must highlight and emphasize the development of a competent and qualified workforce in the food and agricultural sciences. Only ***two*** submissions are allowed.

Internal deadline: February 3 - Pre-proposal due in InfoReady

Sponsor deadlines: February 27

Internal Coordination Required: ***DOC-NIST FY2024 CHIPS for America*** The purpose of the CHIPS Research and Development (R&D) programs is to advance the development of semiconductor technologies and to enhance the competitiveness of the U.S. semiconductor industry. The CHIPS R&D programs address five cross-cutting issues that were identified through interactions with stakeholders and include: Access to facilities and equipment for late-stage R&D and prototyping; Advanced packaging and testing; Advanced metrology and characterization; Advanced manufacturing technology; and Workforce development. NIST will release a series of NOFOs under this program and it is anticipated that most, if not all, will be limited submission, including those where Purdue is a sub-awardee. **Based on the complexity of this program, all submissions involving Purdue as a participant will be coordinated through OOR at all stages (white paper and full submissions) *including those participating as a sub-awardee*.**

Internal deadline: Contact OORLimited@purdue.edu if interested in participating in any of these NIST opportunities

Sponsor deadline: On-going

2. **Selected Funding Opportunities**:

NSF Strengthening American Infrastructure (SAI) SAI is an NSF program seeking to stimulate human-centered, use-inspired, fundamental and potentially transformative research aimed at strengthening America's infrastructure. SAI focuses on how fundamental knowledge about human reasoning and decision-making, governance, and social and cultural processes enables the building and maintenance of effective infrastructure that improves lives and society and builds on advances in technology and engineering. Successful projects will represent a convergence of expertise in one or more social, behavioral or economic sciences, deeply integrated with other disciplines to support substantial and potentially pathbreaking fundamental research applied to strengthening a specific focal infrastructure. Deadline: April 17

NIH Collaborative Research Using Biosamples and/or Data from Type 1 Diabetes Clinical Studies (R01) This NOFO invites applications for studies of type 1 diabetes etiology and pathogenesis using data and samples from clinical trials and studies. This opportunity is intended to fund investigative teams collaborating to answer important questions about disease mechanisms leading to improved delay and durable prevention of type 1 diabetes. Deadline: June 26

DOE-SC Early Career Research Program DOE SC hereby invites applications for support under the ECRP in the following program areas: Advanced Scientific Computing Research (ASCR); Basic Energy Sciences (BES); Biological and Environmental Research (BER); Fusion Energy Sciences (FES); High Energy Physics (HEP); Nuclear Physics (NP); Isotope Research and Development (R&D) and Production (DOE IP); and Accelerator R&D and Production (ARDAP). The purpose of this program is to support the development of individual research programs of outstanding scientists early in their careers and to stimulate research careers in the areas supported by SC. Deadlines: February 18 – Pre-application; April 22 – Application

DOE-SC Research, Development, and Training in Isotope Production This NOFO is narrowly focused on topics involving AI/ML, enhanced processing chemistry used in matter phase changes, and separation science. Applications incorporating effective ways to train the next generation of personnel with essential knowledge and skills related to the production, processing, and purification of radioactive and enriched stable isotopes are strongly encouraged. Deadlines: February 17 – Pre-application; April 17 – Application

DOE ARPA-E Plant Engineering to Revolutionize Sustainable Energy Production and Heighten Opportunities for Novel Efficiency (PERSEPHONE) The goal of the PERSEPHONE program is to develop disruptive new technologies for bioenergy crop genetic engineering. The PERSEPHONE program will develop high-performance tools for bioenergy crop engineering, create novel genetic engineering modalities, and spur adoption by supporting innovative research on biocontainment. Specifically, PERSEPHONE aims to support the development of tools that could lead to an annual impact of the production of at least 1 quad of energy or mitigation of more than 60 MT of carbon dioxide equivalents (CO_2e). *Cost share is required.* Deadline: March 4

DOE ARPA-E Stimulate Utilization of Plentiful Energy in Rocks through High-temperature Original Technologies (SUPERHOT) The SUPERHOT Program aims to boost baseload power supply by enabling future power production from superhot geothermal resources, defined as temperatures greater than 375 °C and pressures greater than 22 megapascals (MPa). The goal of the SUPERHOT program is to support research and development of new technologies to enable scalable superhot geothermal by addressing the major technical challenges affecting geothermal well life and the ability to harvest subsurface energy effectively. Consequently, the focus is on the following subject areas: 1) robust well construction, and 2) transfer of heat from the surrounding geologic formation to the well. *Cost share is required.* Deadline: February 19

DOE-NETL Aligning Manufacturability & Pre-production Design (AMPD) for Storage Technologies The AMPD NOFO is soliciting applications to improve the manufacturability of energy storage technologies through pre-production design innovations, setting the stage for manufacturing scale-up to meet the energy storage needs of American consumers. The R&D projects supported by this NOFO will improve the manufacturability of an energy

storage technology and advance the TRL and MRL of the technology in the United States. *Cost share is required*. Deadline: March 17

DOE-NETL Fiscal Year 2025 Vehicle Technology Office Program Wide The RDD&D activities to be funded under this NOFO will support innovation to reduce the energy and cost needed to move goods and people across the US, providing more options for consumers and businesses that can lead to the accelerated deployment of advanced technologies while also significantly improving US competitiveness. This will lead to benefits including increased safety and reliability of batteries, more convenient travel options, decreased cost of driving, increased vehicle and system efficiency, and a more secure supply chain. Specifically, this NOFO is seeking innovative solutions for on- and off-road vehicles in the areas of improved battery technology for both light- and heavy-duty applications, smart charging infrastructure, sustainable farming, workforce development, and demonstration and deployment of these new technologies. *Cost share is required except for Topic 9.* Deadlines: April 1 – Concept paper; June 18 – Application

DOE-NETL Accelerating CO2 Conversion Technology Development and Deployment – Biological, Catalytic, and Mineralization Pathways The NOFO competitively solicits cost-shared research and development (R&D) proposals to advance the pilot scale testing of carbon conversion technologies with high technology readiness level (TRL ≥ 5) capable of achieving significant carbon mitigation via biological, catalytic, or mineralization pathways. This NOFO also supports testing of carbon conversion product performance and characterization needed for market or consumer adoption. This may include lifecycle analysis (LCA) development for novel carbon conversion technologies and LCA development for pilot facilities using these technologies. *Cost share is required*. Deadline: April 11

DOE Maximizing Algal System Yield (MASY) This NOFO will support high-impact, applied R&D focused on relieving 'pinch points' in algal system cultivation and preprocessing, with the goal of improving process economics for biofuels and/or bioproducts. *Cost share is required*. Deadline: May 15

DOD-DARPA Critical Orientation of Mathematics to Produce Advancements in Science and Security (COMPASS) The Defense Advanced Research Projects Agency (DARPA) Defense Sciences Office (DSO) is issuing an Advanced Research Concepts (ARC) Opportunity, inviting submissions of Abstracts for innovative exploratory research concepts in the technical domain of advanced mathematics. The COMPASS ARC will pioneer new frontiers in advanced mathematics for Defense, exploring nascent mathematical frameworks and innovative problem formulations that will drastically improve our understanding of modern Defense challenges. *Those interested in this opportunity can contact Kevin Massey (kcmassey@purdue.edu) at PARI for assistance.* Deadline: Rolling basis through May 12

DOD AFRL FY25 Compositional Optimization, Dynamical Systems and Control (CODAC) University Center of Excellence This uCoE is to conduct fundamental research into Compositional Optimization, Dynamical systems, and Control (CODAC). We are motivated by the difficulty of making many decisions with non-trivial interdependencies in a dynamic, contested environment, such that some cohesive set of objectives or desirable steady states can be reached. Despite the difficulty, the US Department of the Air Force (DAF), including both the US Air Force and US Space Force, is tasked with such problems daily. It must decide what tasks are worth doing, how to allocate resources to tasks, how to optimally complete tasks with given resources, how to control platforms during the execution of tasks, and so on. Underlying each decision there is typically some optimization problem, potentially with governing dynamics, that would yield an acceptable decision if solved in isolation. Deadline: March 3 – White paper; April 21 – Proposal by invite

DOD U.S. Army STEM Education Consortium (ASEC) Cooperative Agreement Army STEM seeks to enter into a cooperative agreement with a Consortium of like-minded organizations to provide a continuum of meaningful STEM learning experiences for students and educators through effective STEM education and outreach programs. The purpose of the Consortium is to establish a collaborative partnership between an array of non-federal entities, including state and local government, institutions of higher education (IHEs) and others, that will push forward the Army's STEM education strategy. The Consortium will align itself with the Federal STEM Strategic Plan and the DoD

STEM Strategic Plan to form scientists and engineers by engaging in a variety of STEM experiences. *A webinar will be held on January 30. Contact, Aiden Witt, at aiden.b.witt.civ@army.mil and Sarah Eggerling, at sarah.e.eggerling.civ@army.mil to register for the webinar with the subject heading "W911SR-25-R-ASEC – Opportunity Day."* Deadline: March 14

USDA-NIFA Youth Farm Safety Education and Certification (YFSEC) Youth Farm Safety Education and Certification (YFSEC) Program supports national efforts to deliver timely, pertinent, and appropriate farm safety education to youth seeking employment or already employed in agricultural production. Submission is restricted to Cooperative Extension Services. Deadline: March 20

USDA-NIFA Agriculture and Food Research Initiative Sustainable Agricultural Systems Application to this program must focus on approaches that promote transformational changes in the U.S. food and agriculture system. NIFA seeks creative and visionary applications that take a systems approach for projects are expected to significantly improve the supply of affordable, safe, nutritious, and accessible agricultural products, while fostering economic development and rural prosperity in America. These approaches must demonstrate current needs and anticipate future social, cultural, behavioral, economic, health, and environmental impacts. Additionally, the outcomes of the work being proposed should result in societal benefits, including promotion of rural prosperity and enhancement of quality of life for all those involved in food and agricultural value chains from production to utilization and consumption. Deadlines: March 27 – NOI; May 15 - Application

USDA-NIFA Potato Breeding Research The purpose of this grant program is to support potato (Solanum tuberosum L.) research programs that focus on varietal development and testing and potato varieties for commercial production. As used herein, varietal development and testing is research using conventional breeding and/or biotechnological genetics to develop improved potato varieties. Aspects of evaluation, screening and testing must support variety development. Deadline: March 20

USDA-NIFA Higher Education Challenge Grants Program Projects supported by the Higher Education Challenge Grants Program will: (1) address a state, regional, national, or international educational need; (2) involve a creative or non-traditional approach toward addressing that need that can serve as a model to others; (3) encourage and facilitate better working relationships in the university science and education community, as well as between universities and the private sector, to enhance program quality and supplement available resources; and (4) result in benefits that will likely transcend the project duration and USDA support. Deadline: March 11

USDA-NIFA Agricultural Genome to Phenome Initiative (AG2PI) The AG2PI focuses on collaborative science engagement that intends to develop a community of researchers across both crops and animals that will lay the foundation for expanding knowledge concerning genomes and phenomes of importance to the agriculture sector of the United States. Success of the initiative will inform approaches to understanding how variable weather, environments, and production systems interact with genetic diversity present in crops and animals to impact growth and productivity. Deadline: March 20

USDA-NIFA Methyl Bromide Transition Program (MBT) The MBT addresses the immediate needs and the costs of transition that have resulted from the phase-out of the pesticide methyl bromide. Methyl bromide has been a pest and disease control tactic critical to pest management systems for decades for soilborne and postharvest pests. The program focuses on integrated commercial-scale research on methyl bromide alternatives and associated extension activity that will foster the adoption of these solutions. Projects should cover a broad range of new methodologies, technologies, systems, and strategies for controlling economically important pests for which methyl bromide has been the only effective pest control option. Research projects must address commodities with critical issues and include a focused economic analysis of the cost of implementing the transition on a commercial scale. Deadline: March 20

DoED Teacher Preparation Grants: Supporting Effective Educator Development (SEED) Program The SEED program provides funding to increase the number of highly effective educators by supporting the implementation of evidence-based practices that prepare, develop, or enhance the skills of educators. These grants will allow

eligible entities to develop, expand, and evaluate practices that can serve as models to be sustained and disseminated. Deadlines: February 18 – NOI; March 18 – Application

DoED Technical Assistance and Dissemination to Improve Services and Results for Children with Disabilities and Demonstration and Training Programs The purpose of the Demonstration and Training program is to provide competitive grants, including cooperative agreements, to, or enter into contracts with, eligible entities to expand and improve the provision of vocational rehabilitation (VR) and other services authorized under the Rehabilitation Act of 1973 by supporting activities that increase the provision, extent, availability, scope, and quality of rehabilitation services under the Rehabilitation Act, including related research and evaluation activities. Deadline: March 17

NEH State and Impact of the Humanities Humanities Initiatives grants can help strengthen the teaching and study of the humanities at colleges and universities by supporting the development of new or enhancement of existing programs, educational resources, or courses that explore, interpret, and preserve the diversity of human cultures, ideas, and practices, past and present. NEH welcomes applications for projects that are modest in scope, duration, and budget, as well as applications for expansive, long-term projects. Deadline: April 16

NEH Fellowships for Advanced Social Science Research on Japan Awards support research and writing on modern Japanese society and political economy, Japan's international relations, and U.S.-Japan relations. The program encourages innovative research that puts these subjects in wider regional and global contexts, is comparative and contemporary in nature, and contributes to scholarly knowledge or to the general public's understanding. Appropriate disciplines include anthropology, economics, geography, history, international relations, linguistics, political science, psychology, and sociology. Awards must lead to a product, such as an article, monograph, book, e-book, digital material, translation, edition, or other scholarly resource. Deadline: April 23

Humanities Initiatives at Colleges and Universities The National Endowment for the Humanities (NEH) Division of Education Programs is accepting applications for the five Humanities Initiatives programs. These programs strengthen the teaching and study of the humanities at institutions of higher education by developing new or improving existing humanities programs, educational resources, or coursework. Deadline: May 6

The Mark Foundation Early Detection Award This program requests proposals for projects focused on accelerating the development of effective new approaches to the early detection of cancer. The projects funded through this initiative will advance our understanding of the origins and risk stratification of recalcitrant cancers and accelerate the development of technological and methodological innovation in early cancer detection and interception. Ideas that are broadly applicable to early detection across multiple cancer types are encouraged, including the development of novel clinical trial statistical methodologies that aim to assess the validity of early detection biomarkers. Deadlines: March 10 – LOI; June 17 – Full application

3. **Other:**

DOE Draft National Landscape of High-Impact Crosscutting Opportunities for Next Generation Harsh Environment Materials and Manufacturing Process Research, Development, and Demonstration Request for Information

DOE Request for Information (RFI) on Public Feedback on AMMTO Wide Bandgap Power Electronics Strategic Framework