

May 1, 2017

## Engineering Research Transforming Our World



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### Research Funding Opportunities

**Organization: USDA RFP/Letter Name: Agriculture and Food Research Initiative - Foundational Program USDA-NIFA-AFRI-006351 Due Date: September 30, 2017**

**Summary:** The purpose of the Agriculture and Food Research Initiative (AFRI) is to support research, education, and extension work by awarding grants to solve key problems of local, regional, national, and global importance in sustaining conventional, organic, and urban agricultural systems. These include farm efficiency, profitability and sustainability, ranching, bioenergy, forestry, aquaculture, rural communities and entrepreneurship, human nutrition, mitigating impacts of biotic and abiotic constraints on food production, food safety, mitigating food waste and food loss, physical and social sciences, home economics and rural human ecology, biotechnology, and classical breeding. Through this support, AFRI advances knowledge in both fundamental and applied sciences important to agriculture. It also allows AFRI to support education and extension activities that deliver science-based knowledge to end users, allowing them to make informed, practical decisions. This AFRI RFA provides funding for research only, and integrated research, education, and/or extension projects addressing the six priorities of the 2014 Farm Bill as indicated in Part I, A. **Link:**

[https://nifa.usda.gov/sites/default/files/rfa/FY%202017\\_AFRI%20Foundational\\_RFA.pdf](https://nifa.usda.gov/sites/default/files/rfa/FY%202017_AFRI%20Foundational_RFA.pdf)

**Organization: DARPA RFP/Letter Name: Lifelong Learning Machines (L2M)**

**HR001117S0016 Due Date: June 21, 2017 Summary:** 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. The goal of the Lifelong Learning Machines (L2M) program is to develop substantially more capable systems that are continually improving and updating from experience. Proposed research should investigate innovative approaches that support key lifelong learning machines technologies and enable revolutionary advances in the science of adaptive and intelligent systems.

Specifically excluded is research that results in incremental improvements to the existing state of practice. **Link:**

<https://www.fbo.gov/index?s=opportunity&mode=form&id=557cc1ffdb7ef3a1a9792a890086c488&tab=core&cvview=0>

**Organization: NSF RFP/Letter Name: Design of Engineering Material Systems**

**(DEMS) PD 12-8086 Due Date: September 15, 2017 Summary:** The Design of Engineering Material Systems (DEMS) program supports fundamental research intended

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to lead to new paradigms of design, development, and insertion of advanced engineering material systems. Fundamental research that develops and creatively integrates theory, processing/manufacturing, data/informatics, experimental, and/or computational approaches with rigorous engineering design principles, approaches, and tools to enable the accelerated design and development of materials is welcome. **Link:**  
[https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=504809](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=504809)

**Organization: NSF RFP/Letter Name: Cellular and Biochemical Engineering (CBE) PD 17-1491 Due Date: October 20, 2017 Summary:** The Cellular and Biochemical Engineering (CBE) program supports fundamental engineering research that advances the understanding of cellular and biomolecular processes in engineering biology and eventually leads to the development of enabling technology for advanced biomanufacturing in support of the therapeutic cells, biochemical, biopharmaceutical and biotechnology industries. A quantitative treatment of biological and engineering problems of biological processes is considered vital to successful research projects in the CBE program. Major areas of interest in the program include: Metabolic engineering and synthetic biology for biomanufacturing; Quantitative systems biotechnology; Cell culture technologies; Protein and enzyme engineering; Single cell dynamics and modeling in the context of biomanufacturing; and Development of novel "omics" tools for biomanufacturing applications. **Link:**  
[https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=505334](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505334)

**Organization: NSF RFP/Letter Name: Process Systems, Reaction Engineering and Molecular Thermodynamics PD 17-1403 Due Date: October 20, 2017 Summary:** The goal of the Process Systems, Reaction Engineering and Molecular Thermodynamics (PRM) program is to advance fundamental engineering research on the rates and mechanisms of chemical reactions, systems engineering and molecular thermodynamics as they relate to the design and optimization of chemical reactors and the production of specialized materials that have important impacts on society. The program supports the development of advanced optimization and control algorithms for chemical processes, molecular and multi-scale modeling of complex chemical systems, fundamental studies on molecular thermodynamics, and the integration of this information into the design of complex chemical reactors. An important area supported by the program focuses on the development of energy-efficient and environmentally-friendly chemical processes and materials. Proposals should focus on: Chemical Reaction Engineering; Process Design, Optimization, and Control; Reactive Polymer Processing; Molecular Thermodynamics. **Link:**  
[https://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=505324](https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505324)

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