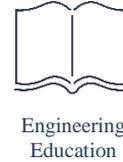
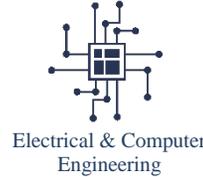


June 12, 2018

Engineering Research Transforming Our World



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Research Funding Opportunities

Organization: NSF RFP/Letter Name: **Civil Infrastructure Systems PD-19-1631 Due**

Date: Anytime **Summary:** The Civil Infrastructure Systems (CIS) program supports fundamental and innovative research in the design, operation and management of civil infrastructure that contributes to creating smart, sustainable and resilient communities at local, national and international scales. This program focuses on civil infrastructure as a system in which interactions between spatially- and functionally- distributed components and intersystem connections exist. All critical civil infrastructure systems are of interest, including transportation, power, water, pipelines and others. The CIS program encourages potentially disruptive ideas that will open new frontiers and significantly broaden and transform relevant research communities. The program particularly welcomes research that addresses novel system and service design, system integration, big data analytics, and socio-technological-infrastructure connections. The program values diverse theoretical, scientific, mathematical, or computational contributions from a broad set of disciplines. While component-level, subject-matter knowledge may be crucial in many research efforts, the program does not support research with a primary contribution pertaining to individual infrastructure components such as materials, sensor technology, extreme event analysis, human factors, climate modeling, structural, geotechnical, hydrologic or environmental engineering. **Link:**

https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13352

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Manager

Organization: NSF RFP/Letter Name: **Computational and Data-Enabled Science and Engineering PD-12-8084 Due Date: December 6, 2018 Summary:** Advanced computational infrastructure and the ability to perform large-scale simulations and accumulate massive amounts of data have revolutionized scientific and engineering disciplines. The goal of the CDS&E program is to identify and capitalize on opportunities for major scientific and engineering breakthroughs through new computational and data analysis approaches. The intellectual drivers may be in an individual discipline or they may cut across more than one discipline in various Directorates. The key identifying factor is that the outcome relies on the development, adaptation, and utilization of one or more of the capabilities offered by advancement of both research and infrastructure in computation and data, either through cross-cutting or disciplinary programs.

Link: https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=504813

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Organization: NSF RFP/Letter Name: Discovery Research PreK-12 17-584

Summary: The Discovery Research PreK-12 program (DRK-12) seeks to significantly enhance the learning and teaching of science, technology, engineering, mathematics and computer science (STEM) by preK-12 students and teachers, through research and development of STEM education innovations and approaches. Projects in the DRK-12 program build on fundamental research in STEM education and prior research and development efforts that provide theoretical and empirical justification for proposed projects. Projects should result in research-informed and field-tested outcomes and products that inform teaching and learning. Teachers and students who participate in DRK-12 studies are expected to enhance their understanding and use of STEM content, practices and skills. The DRK-12 program invites proposals that address immediate challenges that are facing preK-12 STEM education as well as those that anticipate radically different structures and functions of preK-12 teaching and learning. The DRK-12 program has three major research and development strands: (1) Assessment; (2) Learning; and (3) Teaching. The program recognizes the synergy among the three strands and that there is some overlap and interdependence among them. However, proposals should identify a clear focus of the proposed research efforts (i.e., assessment, learning, or teaching) consistent with the proposal's main objectives and research questions. The program supports six types of projects: (1) Exploratory, (2) Design and Development, (3) Impact, (4) Implementation and Improvement, (5) Syntheses, and (6) Conferences. All six types of projects apply to each of the three DRK-12 program strands. **Link:** https://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf17584

Organization: AFRL RFP/Letter Name: Composite Airframe life Extension (CALE)

BAA-RQKPD-2015-0001 Due Date: October 10, 2020 Summary: The Composite Airframe Life Extension (CALE) program will concentrate on identifying, developing, demonstrating and validating technology that will allow USAF airframe structural integrity managers to safely extend the certified service lives of airframes currently in the USAF fleet that contain advanced composite primary structure, without widespread replacement of aged structure with new, and without repeating an extensive, complex building block demonstration process. The CALE program will identify and develop technology to know and/or predict the residual strength, durability and damage tolerance, and reliability of advanced composite structure throughout the original, and if required new service life of the airframe. **Link:** <https://www.grants.gov/web/grants/view-opportunity.html?oppId=276916>

Organization: AFRL RFP/Letter Name: Science and Technology for Autonomous Teammates (STAT) A8650-17-S-6001 Due Date: July 7, 2023 Summary:

The objective of Science and Technology for Autonomous Teammates (STAT) program is to develop and demonstrate autonomy technologies that will enable various AF mission sets. This research will be part of Experimentation Campaigns in: 1 -Multi-domain Command and Control; 2-Intelligence, Surveillance, Recognizance (ISR) Processing Exploitation and Dissemination (PED); and 3- Manned-Unmanned combat Teaming to demonstrate autonomy capabilities to develop and demonstrate autonomy technologies that will improve Air Force operations through human-machine teaming and autonomous decision-making. The technology demonstrations that result from this BAA will

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substantially improve the Air Force's capability to conduct missions in a variety of environments while minimizing the risks to Airmen. The overall impact of integration of autonomous systems into the mission space will enable the Air Force to operate inside of the enemy's decision loop. STAT will develop and apply autonomy technologies to enhance the full mission cycle, including mission planning, mission execution, and post-mission analysis. Particular areas of interest include multi-domain command and control, manned-unmanned teaming, and information analytics. The technology demonstrations that result from this BAA will substantially improve the Air Force's capability to conduct missions in a variety of environments while minimizing the risks to Airmen. The overall impact of integration of autonomous systems into the mission space will enable the Air Force to operate inside of the enemy's decision loop. This effort plans to demonstrate modular, transferable, open system architectures, and deliver autonomy technologies applicable to a spectrum of multi-domain applications. Development efforts will mature a set of technologies that enable airmen to plan, command, control, and execute missions with manageable workloads. The software algorithms and supporting architectures shall:

- Ingest and understand mission taskings and commander's intent
- Respond appropriately to human direction and orders
- Respond intelligently to dynamic threats and unplanned events.

Chosen technologies will be open, reusable, adaptable, platform agnostic, secure, credible, affordable, enduring, and able to be integrated into autonomous systems. The program will be comprised of various technologies developed by AFRL and Industry, integrated into technology demonstrations and deliverables with all the necessary software, hardware, and documentation to support AFRL-owned modeling and simulation environments for future capability developments. Thus, all technology development efforts must adhere to interface designs and standards. **Link:**
<https://www.grants.gov/web/grants/view-opportunity.html?oppId=295281>

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