

August 2007 – Grant Opportunities in Engineering

Dear Engineering Faculty Members –

Here is our August 2007 listing of grant opportunities for faculty members in Engineering. We are still working on establishing a good list of grant opportunities, and would appreciate any suggestions you might have.

All of these notice are posted as PDF file on the Office of Research and Economic Development webpage on the Research Funding webpage (<http://www.research.msstate.edu/funding/>).

Please let my office know if we can help in any way with grant proposals for these or other opportunities.

1. National Science Foundation – Foundations of Data and Visual Analytics
(DEADLINE – November 20, 2007)

Synopsis - Those involved with science, engineering, commerce, health, and national security all increasingly face the challenge of synthesizing information and deriving insight from massive, dynamic, ambiguous and possibly conflicting digital data. The goal of collecting and examining these data is not to merely acquire information, but to derive increased understanding from it and to facilitate effective decision-making. To capitalize on the opportunities provided by these data sets, a new, interdisciplinary field of science is emerging called Data and Visual Analytics, which is defined as the science of analytical reasoning facilitated by interactive visual interfaces. Data and Visual Analytics requires interdisciplinary science, going beyond traditional scientific and information visualization to include statistics, mathematics, knowledge representation, management and discovery technologies, cognitive and perceptual sciences, decision sciences, and more. This solicitation is concerned only with a subset of the overall problem, namely the creation of the mathematical and computational sciences foundations required transform data in ways that permit visual-based understanding.

To facilitate visual-based data exploration, it is necessary to discover new algorithms that will represent and transform all types of digital data into mathematical formulations and computational models that will subsequently enable efficient, effective visualization and analytic reasoning techniques.

With this solicitation, the National Science Foundation (NSF) and the Department of Homeland Security (DHS) invite research proposals that capitalize on knowledge and expertise in the fields of mathematics, computational science, and intelligent systems to produce new data representations and transformations to enable data stakeholders to detect the expected and discover the unexpected in massive data sets. New mathematical and computational algorithms and techniques are sought that will fundamentally improve our ability to transform large, often streaming data sets into representations that better support visualization and analytic reasoning.

In order to provide a cohesive structure for advancing the science of Data and Visual Analytics, two types of proposals are sought:

- * FODAVA-Lead proposals will be submitted by research teams where all team members belong to a single academic institution willing to assume a leadership and coordination role. FODAVA-Lead proposals will compete for a single award with the successful institution expected to play a key role in the development of FODAVA. In addition to forming the lead scientific research team, the FODAVA-Lead organization will be responsible for performing a variety of functions as defined in Section II of this solicitation in order to assure that results are disseminated to the FODAVA community, that effective liaison between FODAVA researchers and the DHS National Visualization and Analytics Center (NVAC) takes place, that testbed data sets are developed and disseminated, and that the mathematics and computer science research communities become increasingly aware of the need for FODAVA-related research

- * FODAVA-Partner proposals will be submissions for two-to-three year research grants. Recipients will perform fundamental research but will also actively participate with the FODAVA-Lead institute in developing FODAVA as a field.

Awards made are expected to develop the mathematics and computational science required to transform data in ways that will better enable the visual-based analysis of massive data sets. The solicitation's goal is to develop new data reduction and transformation algorithms that will be applicable across broad application areas, laying the scientific base for systems of the future. Proposals should focus on fundamental research advances that will be widely applicable across scientific, engineering, commercial, and governmental domains that utilize visualization and analytics to gain insight and derive knowledge from massive data sets. FODAVA is focused on highly innovative, transformational research that offers the potential to fundamentally change data transformation algorithms. Proposals to extend ongoing research thrusts should be directed elsewhere.

More information - http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf07583

2. FELLOWSHIP OPPORTUNITIES. ASEE administers a number of federal programs that offer fellowship opportunities, including the following:

Summer Faculty Fellowship

The Office of Naval Research (ONR) Summer Faculty Research and Sabbatical Leave Program. This program is intended for US citizens who hold teaching

or research appointments relating to science and/or engineering at U.S. academic institutions. A competitive stipend, relocation and travel allowances, and a pre-program site visit are offered. Application deadline is December 4, 2007. Go to: <http://www.asee.org/summer> .

The Air Force Summer Faculty Fellowship Program (SFFP).

This program is intended for US citizens or permanent residents who have an earned doctorate in science or engineering and who hold full-time science or engineering faculty positions at US colleges, community colleges and universities. The duration of this summer fellowship is from 8 to 12 continuous weeks and research is performed on-site at Air Force laboratories. There is a competitive weekly stipend, and relocation and daily expense allowances are available for those who qualify. The application opened on August 1st, 2007. To apply online, go to: <http://www.asee.org/sffp> .

Undergraduate/Graduate

The National Science Foundation Graduate Research Fellowship Program (GRFP). For U.S. citizens, nationals, or permanent resident aliens at or near the beginning of their graduate studies, this program offers a stipend of \$30,000 a year for three years and a \$10,500 cost of education allowance and a one-time \$1,000 travel allowance. For application and deadline information, go to: <http://www.fastlane.nsf.gov>. For additional program information, go to: www.nsf.gov/grfp .

Science, Mathematics and Research for Transformation (SMART) Scholarship for Service Program.

The purpose is to promote the education, recruitment and retention of outstanding undergraduate and graduate students in science, mathematics, and engineering studies; the DoD is also interested in supporting the education of future scientists and engineers in a number of interdisciplinary areas. Scholarships and fellowships awarded include salary or stipend, full tuition, required fees, federal employee benefits, and up to \$1000 book allowance per year. The SMART Program will allow individuals to acquire an education in exchange for a period of employment with the Department of Defense. The program is intended for citizens and nationals of the United States; students must be at least 18 years of age to be eligible for an award. Application deadline is December 14, 2007. For information and to apply online, go to <http://www.asee.org/smart> .

The National Defense Science and Engineering Graduate Fellowship Program (NDSEG).

The fellowship program is sponsored by the Army Research Office, Office of Naval Research, Air Force Office of Scientific Research and the DoD High Performance Computing Modernization Program. This program is intended for U.S. citizens at or near the beginning of their doctoral studies in science or engineering programs. The fellowships are for three year tenures and include full tuition and fees, a competitive stipend, and a health insurance allowance. The application deadline is January 7, 2008. Go to: <http://www.asee.org/ndseg> for applications and detailed program information.