

## September 2008 – Grant Opportunities

Here is our September 2008 listing of grant opportunities and other information of interest 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.

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

### **Cyber-Physical Systems (CPS)**

Program Solicitation – National Science Foundation

Directorate for Computer & Information Science & Engineering

Directorate for Engineering

**Full Proposal Deadline(s)** (due by 5 p.m. proposer's local time):

February 27, 2009

Last Friday in February, Annually Thereafter

#### **Synopsis of Program:**

Congruent with the recommendations in the August 2007 report of the President's Council of Advisors on Science and Technology (PCAST), *Leadership Under Challenge: Information Technology R&D in a Competitive World*, NSF's Directorates for Computer and Information Science and Engineering (CISE) and Engineering (ENG) are spear-heading the Cyber-Physical Systems (CPS) program because of its scientific and technological importance as well as its potential impact on grand challenges in a number of sectors critical to U.S. security and competitiveness, including aerospace, automotive, chemical production, civil infrastructure, energy, healthcare, manufacturing, materials and transportation. By abstracting from the particulars of specific applications in these domains, the CPS program aims to reveal cross-cutting fundamental scientific and engineering principles that underpin the integration of cyber and physical elements across all application sectors. The CPS program will also support the development of methods and tools as well as hardware and software components, run-time substrates, and systems based upon these principles to expedite and accelerate the realization of cyber-physical systems in a wide range of applications. Furthermore, the program aims to create a new research and education community committed to the study and application of cyber-physical system innovations, through the establishment of a CPS Virtual Organization (CPS-VO) and regular PI meetings.

The CPS program is seeking proposals that address research challenges in three CPS themes: *Foundations*; *Methods and Tools*; and *Components, Run-time Substrates, and Systems*. *Foundations* research will develop new scientific and engineering principles, algorithms, models, and theories for the analysis and design of cyber-physical systems. Research on *Methods and Tools* will bridge the gaps between approaches to the cyber and physical elements of systems through innovations such as novel support for multiple views, new programming languages, and algorithms for reasoning about and formally verifying properties of complex integrations of cyber and physical resources. The third

CPS theme concerns new hardware and software *Components, Run-time Substrates* (infrastructure and platforms), *and* (engineered) *Systems* motivated by grand challenge applications.

Three sizes of research and education projects will be considered:

- Small Projects are individual or small-team efforts that focus on one or more of the three defined CPS themes. Funding for Small Projects will be provided at levels of up to \$200,000/year for up to three years.
- Medium Projects also span one or more CPS themes and may include one or more PIs and a research team of students and/or postdocs. Funding for Medium Projects will be provided at levels up to \$500,000/year for up to three years.
- Large Projects are multi-investigator projects involving teams of researchers and their students and/or postdocs representing the same or multiple disciplines in computer science, engineering, and physical application domains, who together address a coherent set of research issues that either cut across multiple CPS themes or that explore in great depth a particular theme. Funding for Large Projects will be provided at levels up to \$1,000,000/year for up to five years.

In addition, NSF will consider proposals to establish a CPS-VO. Only one award will be made, at annual levels of up to \$200,000 for up to five years. It is expected that more modest levels of funding will be provided in the first year or two of this award.

[http://www.nsf.gov/pubs/2008/nsf08611/nsf08611.htm?govDel=USNSF\\_30](http://www.nsf.gov/pubs/2008/nsf08611/nsf08611.htm?govDel=USNSF_30)

#### **ABSTRACT SUBMISSION FOR 2009 ANNUAL CONFERENCE.**

Submission of abstracts for the 2009 Annual Conference and Exposition, Austin, TX, June 22-25, 2009, opens September 8, 2008. Abstracts must be submitted through the ASEE SmoothPaper system (<http://www.asee.org/smoothpaper>) by October 10, 2008. The ASEE Board of Directors has initiated a policy of "Publish to Present" at the ASEE annual conference. Under this new directive, all conference papers must be submitted for peer review in order to be presented at the conference and, subsequently, published in the conference proceedings. The process is as follows: authors submit an abstract to be reviewed. Authors of accepted abstracts are invited to submit a full paper draft for review. Successfully reviewed and accepted paper drafts will produce a final paper to be presented at the annual conference. For further information, go to: <http://www.asee.org/conferences/annual/2008/index.cfm>.

**GEM/ASEE FELLOWSHIP.** The National GEM Consortium and ASEE are looking for applicants for a joint GEM-ASEE fellowship position. This fellowship is aimed at minority graduate students. The fellow will help develop one or more college-level online introductory engineering courses for the web site, [www.curriki.org](http://www.curriki.org), which provides free educational resources for students and educators in third world countries and across the globe. Under

the guidance of an ASEE staff member, course creation will take place through an internship at ASEE headquarters in Washington, DC during the summer of 2009. Prior to this time, the fellow will be expected to gather course materials from ASEE-member (and other) professors, and propose outlines for one or more courses. A technical background in electrical, materials, mechanical, aerospace, civil, or related engineering fields is a plus. M.S. program applicants (preferred) and Ph.D. program applicants will apply through the existing GEM fellowship module and adhere to all guidelines set forth by GEM ([http://www.gemfellowship.org/apply/general\\_instructions.php](http://www.gemfellowship.org/apply/general_instructions.php)). For full consideration, applications must be received by November 15, 2008.

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

**NASA Aeronautics Scholarship Program.** The purpose of this NASA program is to help advance the nation's aeronautics enterprise by investing in the educational development of the future aeronautics workforce and to provide opportunities to attract highly motivated undergraduate and graduate students to aeronautics and related fields. Scholarships awarded include competitive stipend payments anticipated amount for undergrad up to \$15,000 and up to \$35,000 for graduate. There is an option to attend a summer internship (up to \$10,000 per summer) at a participating NASA Research Center. The undergraduate program is open to U.S. citizens, and applicants should have completed their sophomore year of college by fall of 2009, and should be in good standing at an accredited college or university. The graduate program is open to U.S. citizens, the applicants should be accepted or enrolled in an accredited program, and remain in good academic standing at their respected college or university. Application opens September 1, 2008. For more information, contact [nasa.asp@asee.org](mailto:nasa.asp@asee.org)

**The Naval Research Laboratory (NRL) Postdoctoral Fellowship Program.** This program is open to US citizens and legal permanent residents and offers a competitive stipend as well as insurance, relocation, and travel allowances. This program offers one to three year postdoctoral fellowships designed to increase the involvement of scientists and engineers from academia and industry to scientific and technical areas of interest and relevance to the Navy. This program has a rolling admission. Go to: <http://www.asee.org/nrl/> .

**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, 2008. To apply online, go to: <http://www.asee.org/sffp> .

**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 5, 2009. Go to: <http://www.asee.org/ndseg> for applications and detailed program information.

**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, a \$10,500 cost of education allowance and a one-time \$1,000 travel allowance. There are 900-1,600 anticipated awards in FY09 pending availability of funds. For application and deadline information, go to: <http://www.fastlane.nsf.gov> . For additional program information, go to: <http://www.nsfgrfp.org> .

**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 of the United States; students must be at least 18 years of age to be eligible for an award. Application deadline is December 15, 2008. For information and to apply online, go to <http://www.asee.org/smart> .

**The East Asia and Pacific Summer Institutes (EAPSI).** These programs are designed to provide U.S. graduate students in science and engineering: 1) first-hand research experience in Australia, China, Japan, Korea, New Zealand, Singapore or Taiwan; 2) an introduction to the science and science policy infrastructure of the respective location; and 3) orientation to the society, culture and language. The goals of EAPSI are to introduce students to East Asia and Pacific science and engineering in the context of a

research setting, and to help students initiate scientific relationships that will better enable future collaboration with foreign counterparts. The institutes last approximately 8-10 weeks from June to August. New EAPSI solicitation for summer 2009 will be available in late Aug/Sept 2008. Application deadline: December 9, 2008. For more information, please visit: <http://www.nsf.gov/eapsi> or <http://www.nsf.gov> .

**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. The application will open September 2, 2008. For more information go to <http://www.asee.org/summer>, or contact [onrsummer@asee.org](mailto:onrsummer@asee.org) .