

# Upcoming Grant Opportunities

## 1. NSF Engineering Research Centers (ERC)

NSF 07-521 Solicitation

URL: <http://www.nsf.gov/pubs/2007/nsf07521/nsf07521.htm>

### Deadlines:

Letter of Intent Deadline Date:	February 2, 2007
Preliminary Proposal Deadline Date:	May 3, 2007
Full Proposal Deadline Date:	October 30, 2007 (Invited Full Proposals)

The goal of the Generation Three (Gen-3) Engineering Research Centers (ERC) Program is to create a culture of innovation in engineering research and education that links scientific discovery to technological innovation through transformational engineered systems research in order to advance technology and produce engineering graduates who will be creative innovators in a global economy. These ERCs will be at the forefront as the U.S. competes in the 21st century global economy where R&D resources and engineering talent are internationally and domestically distributed. Recognizing that optimizing efficiency and product quality is no longer sufficient for U.S. industry to remain competitive, these ERCs will optimize academic engineering research and education to stimulate increased innovation. They will develop this culture of discovery and innovation through a symbiotic relationship between academic researchers, small innovative firms, and larger industrial and practitioner partners. These ERCs will build bridges from science-based discovery to technological innovation by focusing on research needed to realize transforming engineered systems. They will have the opportunity to partner with foreign universities and provide unique opportunities for research and learning collaboration that will prepare U.S. engineering graduates for leadership in innovation in a global economy. Their faculty will be diverse and talented individuals who will prepare diverse and talented domestic and international graduates who can function in a global world where design and production efforts cross national borders. Their transforming engineering education programs will strategically impart the capacity to create and exploit knowledge for technological innovation.

## 2. NSF Electronics, Photonics & Device Technologies (EPDT)

Solicitation Number: PD 05-1517

URL: [http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=13379](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13379)

**Deadlines:** January 7-February 7, 2007

The Electronics, Photonics and Device Technologies (EPDT) program seeks to improve the fundamental understanding of devices and components based on the principles of electronics, photonics, magnetism, organics, electro-optics, electromechanics, and related physical phenomena. The program invests in advancing the frontiers of spin electronics, molecular electronics, bioelectronics, silicon nanoelectronics and beyond, nonsilicon electronics, flexible electronics, optoelectronics, microwave photonics, MEMS/NEMS, power electronics, and mixed signal devices. EPDT further supports related topics in quantum engineering and novel electromagnetic materials-based device solutions, RF integrated circuits, and reconfigurable

antennas needed for telecommunications, telemedicine, and other wireless applications. ECCS will continue its support of tools for manipulation and measurement with nanoscale precision.

Areas of interest include:

- Bioelectronics
- Flexible Electronics
- MEMS/NEMS
- Micromagnetics
- Microelectronics
- Microwave Photonics
- Molecular Electronics
- Nano-Electronics/Photonics/Magnetics
- Optoelectronics
- Power Electronics
- Sensors and Actuators
- Spin Electronics

### **3. NSF Sensor Innovation and Systems**

Solicitation Number: PD-05-1639

URL: [http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=13349](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13349)

**Deadline:** February 15, 2007 and October 1, 2007

The Sensor Innovation and Systems program supports research on acquiring and using information about civil and mechanical systems to improve their safety, reliability, cost and performance; knowledge base for development of advanced sensors for engineering solutions and strategic decision making for safety, security, and reliability and for implementation of real time adaptive system performance through dynamic response control, smart sensing and innovative actuating capabilities that use the sensed information; innovative sensor technology development including micro devices based on five senses and their embedment, micro and wireless networks, analytical tools and strategies for health monitoring and diagnosis, and engineering for smart structures.

### **4. Environmental Sensors for Personal Exposure Assessment (SBIR [R43/R44])**

Solicitation Number: RFA-ES-07-001

URL: <http://grants.nih.gov/grants/guide/rfa-files/RFA-ES-07-001.html>

**Deadlines:** February 21, 2007

This solicitation is part of an overall effort by NIH in establishing an Exposure Biology Program as part of a larger Gene and Environment Initiative, publicly announced in February, 2006. -This Funding Opportunity Announcement (FOA) solicits Small Business Innovation Research (SBIR) grant applications from small business concerns (SBCs) for the development of field-deployable or wearable personal sensors for monitoring point-of-contact exposures to a broad range of airborne chemical and biological agents; for monitoring exposure in available biosamples (buccal cells, finger prick, exhaled breath, urine or saliva) to assess real time and continuous readout of internal exposures; and/or for developing and refining panels of biomarkers of

biological response to environmental stressors. A central element is that the personal sensors produce quantitative, near real-time measurement of multiple analytes at the point of contact with the body (e.g., nose, mouth, skin) or in available biosamples, and that the biomarkers of response reflect components of key physiologic and pathophysiologic pathways relevant to human disease. It is anticipated that any devices developed through this FOA will be available for application to population studies at the end of the funding period. -This FOA will utilize the SBIR (R43/R44) grant mechanisms for Phase I, Phase II, and Fast-Track applications.

## **5. NSF Explosives and Related Threats: Frontiers in Prediction and Detection**

Solicitation Number: NSF 07-528

URL: [http://www.nsf.gov/publications/pub\\_summ.jsp?ods\\_key=nsf07528](http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf07528)

**Deadlines:** March 1, 2007

In FY 2007, NSF will invest in leading edge, frontier research on sensors and other areas, including social and behavioral sciences, that are potentially relevant to the prediction and detection of explosives and related threats. This is an NSF-wide effort, in coordination with the efforts of other agencies, which seeks to advance fundamental knowledge in new technologies for sensors and sensor networks, and in the use of sensor data in control and decision making, particularly in relation to the prediction and detection of explosives and related threats. This research is seen as critical to our nation's ability to deploy effective homeland security measures, and to protect civilians and our military forces throughout the world. Proposals outside of the scope described in this solicitation will be returned without review. Research on prediction and detection of biological, toxic chemical, and nuclear weapons is excluded from the scope of this solicitation.

## **6. NSF Environmental Engineering Program (EEP)**

Solicitation Number: PD 07-1440

URL: [http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=501029&org=CBET](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=501029&org=CBET)

**Deadlines:**

Full Proposal Window:

February 1, 2007 - March 1, 2007

August 15, 2007 - September 15, 2007

Environmental engineering encompasses those areas of knowledge and technology that are concerned with understanding the impacts of human activities on the natural environment and developing the scientific basis for solving, mitigating or managing environmental problems caused by human activities. The NSF Environmental Engineering Program fosters cutting-edge research based on fundamental science and four types of engineering tools— measurement, analysis, synthesis, and design. Along with the related NSF environmental programs (i.e. Environmental Technology, Environmental Sustainability, and Energy for Sustainability), EEP fosters environmental sustainability through the development of techniques to minimize or avoid generating pollution.

The program supports research and educational activities that seek to apply engineering principles to understanding and reducing harmful effects of solid, liquid, and gaseous discharges

that result from human activity and have their impact on land; inland and coastal waters; and air. Projects that seek to remediate and understand effects that impair the ecological and economic value of those resources are welcome. Major areas of interest and activity in EEP include:

- □ developing innovative biological, chemical, and physical treatment processes to remove and degrade pollutants from water and air;
- □ measuring, modeling and predicting the movement and fate of pollutants in the environment; and
- □ developing and evaluating techniques to clean up polluted sites, such as landfills and contaminated aquifers, restore the quality of polluted water, air, and land resources and rehabilitate degraded ecosystems.

Research may be directed toward improving the cost-effectiveness of pollution avoidance, as well as developing new principles for pollution avoidance technologies. Research for new and improved sensors of environmental conditions and innovative waste reduction and recycling processes also are important components of this program. Visit the above URL for more details and to access current grant offerings.

## **7. NSF Industry/University Cooperative Research Centers Grants (I/UCRC)**

### **Program Solicitation NSF 01-116**

URL: <http://www.nsf.gov/cgi-bin/getpub?nsf01116>

**Deadlines:** Mar 31, Jun 30, Sep 30, Dec 31

This program develops long-term partnerships among industry, academe, and government. The centers are catalyzed by a small investment from the National Science Foundation (NSF) and are primarily supported by industry center members, with NSF taking a supporting role in their development and evolution. Each center is established to conduct research that is of interest to both the industry and the center. An I/UCRC contributes to the Nation's research infrastructure base and enhances the intellectual capacity of the engineering and science workforce through the integration of research and education. A letter of intent is requested by June 30 for the September 30 deadline and December 31 for the March 31 deadline.

Universities and colleges with sufficient research and graduate education capabilities are eligible as lead institutions for I UCRC program support. To be eligible a center is required to obtain a total of at least \$300,000 annually in cash membership fees from a minimum of six center members.

## **8. NSF Partnerships for Innovation**

Program Solicitation NSF 06-550

URL: [http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=5261](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5261)

**Deadlines:** LOI, June; Full, August

The goals of the Partnerships for Innovation Program are to: 1) stimulate the transformation of knowledge created by the research and education enterprise into innovations that create new wealth, build strong local, regional and national economies and improve the national well-being;

2) broaden the participation of all types of academic institutions and all citizens in NSF activities to meet the broad workforce needs of the national innovation enterprise; and 3) catalyze or enhance enabling infrastructure necessary to foster and sustain innovation in the long-term. To develop a set of ideas for pursuing these goals, this competition will support 10-15 promising partnerships among academe, the private sector, and state/local/ federal government that will explore new approaches to support and sustain innovation.

### **9. Air Force Revolutionary Automatic Target Recognition and Sensor Research (RASER)**

Program Solicitation: BAA-03-03-SNK

URL: <http://www.grants.gov/search/search.do?oppId=11011&mode=VIEW>

**Deadlines:** Ongoing through June 2007

This is a four-year open-ended Broad Agency Announcement (BAA) to periodically solicit proposals for conducting innovative research and development efforts that are focused on achieving significant advances in the Air Force's current capabilities in signature and modeling for automatically detecting and recognizing targets of interest. Multiple contract awards are anticipated. There may be a large variability in the total cost and duration of the awards. SAMERI is being initiated with the release of this baseline announcement and amendments to this announcement may be published during the course of this program/project. The objective of this program is to achieve advances in multi-sensor physics based and empirical modeling techniques for Automatic (ATR) and Fusion Technologies. This effort includes the development of multi-sensor phenomenology modeling techniques, modeling and simulation methods, and signature exploitation technologies for ATR and fusion systems, sub-systems and components.