

# Weekly NSF Funding Opportunities and News Items

March 1, 2008

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- **CubeSat-based Science Missions for Space Weather and Atmospheric Research (NSF 08-549)**  
The overarching goal of the program is to support the development, construction, launch, operation, and data analysis of small satellite science missions to advance space weather and atmospheric research. Equally important, it will provide essential opportunities to train the next generation of experimental space scientists and aerospace engineers.  
[http://www.nsf.gov/pubs/2008/nsf08549/nsf08549.htm?govDel=USNSF\\_25](http://www.nsf.gov/pubs/2008/nsf08549/nsf08549.htm?govDel=USNSF_25)
- **Small Business Innovation Research Program Phase I Solicitation FY-2009 (SBIR) (NSF 08-548)**  
The Small Business Innovation Research (SBIR) Program stimulates technological innovation in the private sector by strengthening the role of small business concerns in meeting Federal research and development needs, increasing the commercial application of federally supported research results, and fostering and encouraging participation by socially and economically disadvantaged and women-owned small businesses.  
[http://www.nsf.gov/pubs/2008/nsf08548/nsf08548.htm?govDel=USNSF\\_25](http://www.nsf.gov/pubs/2008/nsf08548/nsf08548.htm?govDel=USNSF_25)
- **Tax Rebates Versus Tax Bonuses**  
On Feb. 13, 2008, the president signed a \$168 billion stimulus package designed to give \$300, \$600 or \$1,200 checks to more than 100 million Americans. It was the second time in seven years that lawmakers agreed to return additional tax money in hopes that people would spend it to stimulate a sluggish economy. A key question: Will those receiving checks spend enough to have the desired effect?  
Economic theory says "yes" -- give people money and they will spend it. . . . More at  
[http://www.nsf.gov/news/news\\_summ.jsp?cntn\\_id=111197&govDel=USNSF\\_65](http://www.nsf.gov/news/news_summ.jsp?cntn_id=111197&govDel=USNSF_65)
- **Informal Science Education (ISE) (NSF 08-547)**  
The ISE program invests in projects that develop and implement informal learning experiences designed to increase interest, engagement, and understanding of science, technology, engineering, and mathematics (STEM) by individuals of all ages and backgrounds, as well as projects that advance knowledge and practice of informal science education. Projects may target either public audiences or professionals whose work directly affects informal STEM learning. ISE projects are expected to demonstrate strategic impact, innovation, and collaboration.  
[http://www.nsf.gov/pubs/2008/nsf08547/nsf08547.htm?govDel=USNSF\\_25](http://www.nsf.gov/pubs/2008/nsf08547/nsf08547.htm?govDel=USNSF_25)
- **Course, Curriculum, and Laboratory Improvement (CCLI) (NSF 08-546)**  
The Course, Curriculum, and Laboratory Improvement (CCLI) program seeks to improve the quality of science, technology, engineering, and mathematics (STEM) education for all undergraduate students. The program supports efforts to create, adapt, and disseminate new learning materials and teaching strategies, develop faculty expertise, implement educational innovations, assess learning and evaluate innovations, and conduct research on STEM teaching and learning. The program supports three types of projects representing three different phases of development, ranging from small, exploratory investigations to large, comprehensive projects.  
[http://www.nsf.gov/pubs/2008/nsf08546/nsf08546.htm?govDel=USNSF\\_25](http://www.nsf.gov/pubs/2008/nsf08546/nsf08546.htm?govDel=USNSF_25)
- **Theoretical Foundations 2008 (TF08) (NSF 08-518)**  
The Theoretical Foundations (TF) program supports basic research into the central issues underlying computer and information science and technology. Research and education projects sponsored by the program strengthen the intellectual foundations of algorithms and theoretical computer science, cryptography, network and communication theory, information theory, numeric and scientific computing, signal processing, and geometric algorithms, and

bring advanced mathematical capabilities from these areas to bear on fundamental problems throughout science and engineering. The program encourages investigators to include in their proposals innovative curricula or educational materials to help advance the training of new experts in the cognate areas served by TF.

<http://www.nsf.gov/pubs/2008/nsf08518/nsf08518.htm>

- **Science of Science and Innovation Policy (SciSIP) (NSF 08-520)**

The SciSIP program underwrites fundamental research that creates new explanatory models, analytic tools and datasets designed to inform the nation's public and private sectors about the processes through which investments in science and engineering (S&E) research are transformed into social and economic outcomes. SciSIP's goals are to understand the contexts, structures and processes of S&E research, to evaluate reliably the tangible and intangible returns from investments in research and development (R&D), and to predict the likely returns from future R&D investments within tolerable margins of error and with attention to the full spectrum of potential consequences. Specifically, the research, data collection and community development components of SciSIP's activities will: (1) develop usable knowledge and theories of creative processes and their transformation into social and economic outcomes; (2) develop, improve and expand models and analytical tools that can be applied in the science policy decision making process; (3) improve and expand science metrics, datasets and analytical tools; and (4) develop a community of experts across academic institutions and disciplines focused on SciSIP. For purposes of this solicitation, the term "science metrics" refers to quantitative measures or indicators that provide summary information on the size, scope, quality, and impact of science and engineering activities, with particular focus on inputs and outputs of the science, technology and innovation system. Characterizing the dynamics of discovery and innovation is important for developing valid metrics, for predicting future returns on investments, for constructing fruitful policies, and for developing new forms of workforce education and training.

The FY 2008 competition includes three emphasis areas: Analytical Tools, Model Building, and Data Development and Augmentation. The emergent body of research will develop and utilize techniques for retrospective and prospective analyses. In addition, research will provide insight into factors that propagate new ideas at levels from the molecular functioning of the human brain to the organizational, state, national and international levels. This solicitation also calls for research that improves and expands science metrics and datasets. The utilization of virtual organizations or collaboratories by social and behavioral scientists in the discovery process is included in this call for research proposals.

<http://www.nsf.gov/pubs/2008/nsf08520/nsf08520.htm>

- **Statement by the NSF Director on the FY 2009 Budget Request**

- **Improvements in Facilities, Communications, and Equipment at Biological Field Stations and Marine Laboratories (FSML) (NSF 05-550)**

Biological Field Stations and Marine Laboratories (FSMLs) are off-campus facilities for research and education conducted in the natural habitats of terrestrial, freshwater, and marine ecosystems. FSMLs support biological research and education by preserving access to study areas and organisms, by providing facilities and equipment in close proximity to those study areas, and by fostering an atmosphere of mutual scientific interest and collaboration in research and education.

[http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=5449&govDel=USNSF\\_39](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5449&govDel=USNSF_39)

- **Presidential Awards for Excellence in Science, Mathematics and Engineering Mentoring (NSF 04-525)**

The PAESMEM Program seeks to identify outstanding mentoring efforts that enhance the participation of groups (i.e., women, minorities, and persons with disabilities) that are underrepresented in science, technology, engineering, and mathematics. The awardees serve as leaders in the national effort to develop fully the Nation's human resources in science, technology, engineering, and mathematics.

<http://www.nsf.gov/pubs/2004/nsf04525/nsf04525.htm>

- **Undergraduate Research and Mentoring in the Biological Sciences (URM) (NSF 06-591)**  
The goal of the Undergraduate Research and Mentoring in the Biological Sciences (URM) program is to increase the number and diversity of individuals pursuing graduate studies in all areas of biological research supported by the NSF Directorate for Biological Sciences. Support will be provided to academic institutions to establish innovative programs to engage undergraduates in a year-round research and mentoring activity. Particular emphasis will be placed on broadening participation of members of groups historically underrepresented in science and engineering: African Americans, Alaska Natives, American Indians, Hispanic Americans, Native Pacific Islanders, and persons with disabilities.  
<http://www.nsf.gov/pubs/2006/nsf06591/nsf06591.htm>
- **University Radio Observatories Program (AST-URO) NSF 08-543**  
The URO program provides support for operations, technical enhancements, scientific investigations, and student training at university-based radio facilities. A primary function of funded University Radio Observatories is to provide focused research environments that foster hands-on student access to state-of-the-art radio astronomy instrumentation. UROs also serve the general astronomical community by providing open access to 30% - 50% of available telescope time.  
[http://www.nsf.gov/pubs/2008/nsf08543/nsf08543.htm?govDel=USNSF\\_25](http://www.nsf.gov/pubs/2008/nsf08543/nsf08543.htm?govDel=USNSF_25)
- **Chemical and Biological Separations (CBS) (PD 08-1417)**  
The Chemical and Biological Separations (CBS) program supports fundamental research on novel methods and materials for separation processes. These processes are central to the chemical, biochemical, materials, energy, and pharmaceutical industries. A fundamental understanding of the interfacial, transport, and thermodynamic behavior of multiphase chemical systems as well as quantitative descriptions of processing characteristics in the process-oriented industries ...  
[http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=13363&govDel=USNSF\\_39](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13363&govDel=USNSF_39)
- **Particulate and Multiphase Processes (PD 08-1415)**  
The Particulate and Multiphase Processes program supports fundamental and applied research on mechanisms and phenomena governing particulate and multiphase processes, including granular and granular-fluid flows, particle/bubble/droplet interactions, aerosol science and technology, suspensions, micro- and nano-structured fluids, self- and directed-assembly of nanostructures, and related instrumentation and diagnostics. Innovative research is sought that contributes to improving the basic understanding, design, predictability, efficiency, and control of particulate and multiphase processes with particular emphasis on: new frontiers in nanotechnology, novel manufacturing techniques, nano-metrology, multiphase transport in biological systems, environmental sustainability, critical infrastructure systems, and complex engineering systems.  
[http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=13364&govDel=USNSF\\_39](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13364&govDel=USNSF_39)
- **Foreign Science and Engineering Graduate Students Returning to U.S. Colleges**  
[http://www.nsf.gov/news/news\\_summ.jsp?cntn\\_id=111036&govDel=USNSF\\_51](http://www.nsf.gov/news/news_summ.jsp?cntn_id=111036&govDel=USNSF_51)