**Upcoming Funding Opportunities:**

NOTE: All proposal titles are hyperlinked to program announcement

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**SRC Collaborative Funding Opportunity for NSF Proposals on Environmental Health and Safety of Nanotechnology**

The Nanomanufacturing Science area of the Semiconductor Research Corporation (SRC) proposes to partner with NSF in funding proposals which pass peer review for the NSF Solicitation PD 14-1179 on Environmental, Health and Safety of Nanotechnology.

An area of particular interest to SRC members is Environmental, Health and Safety of engineered nanomaterials in semiconductor manufacturing, for which example topics include:

1. methods for occupational exposure characterization and control of engineered nanoparticles (alumina, ceria, and silica),
2. novel methods for characterization and abatement of nanoparticle emissions in air and wastewater, and
3. research to inform and enable the safe use of engineered nanoparticles with III-V materials.

SRC encourages submissions to this NSF Solicitation on Environmental, Health and Safety aspects of Nanotechnology and invites PIs who are interested in potential collaborative funding on topics of interest to the semiconductor industry to contact Robert Havemann, Director of Nanomanufacturing Sciences (havemann@src.org), if they have any questions about this opportunity.

**Deadline: February 20, 2014**

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**NSF Division of Chemical, Bioengineering, Environmental, and Transport Systems**

**Fluid Dynamics**

The Fluid Dynamics program supports fundamental research and education on mechanisms and phenomena governing fluid flow. Proposed research should contribute to basic understanding; thus enabling the better design; predictability; efficiency; and control of systems that involve fluids. Encouraged are proposals that address innovative uses of fluids in materials development; manufacturing; biotechnology; nanotechnology; clinical diagnostics and drug delivery; sensor development and integration; energy and the environment. While the research should focus on fundamentals, a clear connection to potential application should be outlined. Current research themes include:

- **General Fluid Mechanics:** experimental and theoretical dynamics of Newtonian fluids; laminar flows, transitional flows, and turbulence; hydrodynamic stability; flow of compressible fluids.
- **Flow of Complex Fluids:** non-Newtonian fluid mechanics; viscoelasticity; flow of polymer solutions and melts; gelation; flow instability; flow-induced structuring; DNA dynamics; molecular dynamics simulations.
- **Micro- Nano- Bio- Fluid Mechanics:** micro-and nano-scale flow phenomena; biomedical microdevices; effects of nanoscale inclusions on rheological properties; flow of Brownian suspensions; biomimetics; biological flow processes.
- **Turbulence and Flow Control:** large eddy simulation; direct numerical simulation; high Reynolds number experiments; stability and transition to turbulence; 3-D
boundary layers; multi-phase turbulent flows; flow control; insect flight; gas-liquid interfaces.

- **Instrumentation and Flow Diagnostics:** Instrument development; MEMS; shear stress sensors; Magnetic Resonance Imaging for engineering flow; velocimetry; flows in biomedical assistive devices.

**Deadline:** *February 20, 2014*

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**NSF Exploiting Parallelism and Scalability (XPS)**

The Exploiting Parallelism and Scalability (XPS) program aims to support groundbreaking research leading to a new era of parallel computing. Achieving the needed breakthroughs will require a collaborative effort among researchers representing all areas—from services and applications down to the micro-architecture—and will be built on new concepts, theories, and foundational principles. New approaches to achieve scalable performance and usability need new abstract models and algorithms, new programming models and languages, new hardware architectures, compilers, operating systems and run-time systems, and must exploit domain and application-specific knowledge. Research is also needed on energy efficiency, communication efficiency, and on enabling the division of effort between edge devices and clouds.

**Deadline:** *February 24, 2014*

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**NIH Academic Research Enhancement Award (AREA) Program (R15)**

The AREA program supports small-scale research projects in the biomedical and behavioral sciences conducted by faculty and students at educational institutions that have not been major recipients of NIH research grant funds.

- **Goals of the Program**
  - Support meritorious research
  - Expose students to research
  - Strengthen the research environment of the institution

- **Key Features**
  - Project period is limited to 3 years.
  - Direct costs are limited to $300,000 over the entire project period.
  - Grants are renewable.
  - Preliminary data are not required.

**Deadline:** *February 25, June 25 and October 25, 2014*

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**Silicon Mechanics Third Annual Research Cluster Grant**

A complete High-Performance Computing Cluster using the latest Intel processors and NVIDIA GPUs

Silicon Mechanics, an industry-leading provider of server, storage, and high-performance computing solutions, is dedicated to building relationships and collaborating with professors and researchers at universities and other research institutions. This grant program is open to all US and Canadian qualified post-secondary institutions, university-affiliated research institutions, non-profit research institutions, and researchers at federal labs with university affiliations.

**Deadline:** *Submissions accepted November 15, 2013 through March 1, 2014. Grant recipients announced on or before March 31, 2014*
**NSF Division of Advanced Cyberinfrastructure**

**Petascale Computing Resource Allocations (PRAC)**

In 2013, a new NSF-funded petascale computing system, Blue Waters, was deployed at the University of Illinois. The goal of this project and system is to open up new possibilities in science and engineering by providing computational capability that makes it possible for investigators to tackle much larger and more complex research challenges across a wide spectrum of domains. The purpose of this solicitation is to invite research groups to submit requests for allocations of resources on the Blue Waters system. Proposers must show a compelling science or engineering challenge that will require petascale computing resources. Proposers must also be prepared to demonstrate that they have a science or engineering research problem that requires and can effectively exploit the petascale computing capabilities offered by Blue Waters. Proposals from or including junior researchers are encouraged, as one of the goals of this solicitation is to build a community capable of using petascale computing.

**Deadline:** *March 10, 2014*

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**NSF Directorate for Computer & Information Science & Engineering**

**Expeditions in Computing**

The far-reaching impact and rate of innovation in the computing and information disciplines has been remarkable, generating economic prosperity and enhancing the quality of life for people throughout the world. The Directorate for Computer and Information Science and Engineering (CISE) has created the *Expeditions in Computing (Expeditions)* program to provide the CISE research and education community with the opportunity to pursue ambitious, fundamental research agendas that promise to define the future of computing and information.

In planning *Expeditions* projects, investigators are encouraged to come together within or across departments or institutions to combine their creative talents in the identification of compelling, transformative research agendas that promise disruptive innovations in computing and information for many years to come. Funded at levels up to $2,000,000 per year for five years, *Expeditions* represent some of the largest single investments currently made by the directorate. Together with the Science and Technology Centers CISE supports, *Expeditions* form the centerpiece of the directorate's center-scale award portfolio. With awards funded at levels that promote the formation of research teams, CISE recognizes that concurrent research advances in multiple fields or sub-fields are often necessary to stimulate deep and enduring outcomes. The awards made in this program will complement research areas supported by other CISE programs, which target particular computing or information disciplines or fields.

**Deadline:** *March 12, 2014*

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**Division of Computer and Network Systems**

**Secure and Trustworthy Cyberspace: Secure, Trustworthy, Assured and Resilient Semiconductors and Systems (SaTC: STARSS)**

Cyberspace has transformed the daily lives of people for the better. However, our increasing dependence upon cyberspace has exposed its fragility and vulnerabilities: corporations, agencies, national infrastructure and individuals have been victims of cyber-attacks. In December 2011, the National Science and Technology Council (NSTC) with the cooperation of the National Science Foundation (NSF) issued a broad, coordinated federal strategic plan for cybersecurity
research and development (Trustworthy Cyberspace: Strategic Plan for the Federal Cybersecurity Research and Development Program) to “change the game,” by calling for establishing a science of cybersecurity, transitioning promising cybersecurity research into practice, and bolstering education and training in cybersecurity.

The NSF's Secure and Trustworthy Cyberspace (SaTC) program is supportive of this strategic plan. SaTC recognizes that cyberspace will continue to grow and evolve, and that advances in science and engineering will create new “leap-ahead” opportunities expanding cyberspace. It further recognizes that cybersecurity must also grow and co-evolve, and that a secure and trustworthy cyberspace will ensure continued economic growth and future technological innovation.

Deadline: March 26, 2014

**NSF Industry/University Cooperative Research Centers Program (I/UCRC)**

The I/UCRC program develops long-term partnerships among industry, academe, and government. The centers are catalyzed by a small investment from NSF and are primarily supported by industry center members, with NSF taking a supporting role in the development and evolution of the center. Each center is established to conduct research that is of interest to both the industry members and the center faculty. 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. As appropriate, an I/UCRC uses international collaborations to advance these goals within the global context.

Deadline: Letter of intent June 27, 2014; full proposal September 26, 2014
Graduate Student Fellowship and Scholarship Opportunities:

U.S. DoE Energy Efficiency and Renewable Energy Science and Technology Policy (STP) Fellowships (SunShot Initiative Fellowships)
for Master’s or PhD graduates
Rolling application deadlines: May 31, 2014, September 30, 2014

Society of Women Engineers (SWE) Graduate Scholarships
Deadline: multiple

NSF International Research Experiences for Students (IRES)
Deadline: August 19, 2014

Technical Minority Scholarship Program (Xerox Technical Minority Scholarship)
The scholarship is for qualified minorities enrolled in a technical degree program at the bachelor level or above. Applicants must be academic high-achievers (3.0 or better GPA). Applicants must be US citizens or visa-holding Permanent Residents of African American, Asian, Pacific Island, Native American, Native Alaskan, or Hispanic descent.
Deadline: September 30, 2014

Cyber Security Scholarships
These scholarships will be awarded to students enrolled full-time in degree-granting programs in fields directly related to the support of U.S. intelligence or homeland security enterprises, and/or foreign languages.
Deadline: November 1, 2014

East Asia and Pacific Summer Institutes for U.S. Graduate Students (EAPSI)
NSF and selected foreign counterpart science and technology agencies sponsor international research institutes for U.S. graduate students in seven East Asia and Pacific locations at times set by the counterpart agencies between June and August each year. The Summer Institutes (EAPSI) operate similarly and the research visits to a particular location take place at the same time. Although applicants apply individually to participate in a Summer Institute, awardees become part of the cohort for each location. Applicants must propose a location, host scientist, and research project that is appropriate for the host site and duration of the international visit.

An EAPSI award provides U.S. graduate students in science, engineering, and education: 1) first-hand research experiences in Australia, China, Japan, Korea, New Zealand, Singapore, or Taiwan; 2) an introduction to the science, science policy, and scientific infrastructure of the respective location; and 3) an orientation to the society, culture, and language. It is expected that
EAPSI awards will help students initiate professional relationships to enable future collaboration with foreign counterparts.

The NSF award includes participation in the Pre-Departure Orientation, summer stipend of $5,000, and roundtrip airplane ticket to the host location. EAPSI partner agencies pay in-country living expenses during the Summer Institutes.

Deadline: *November 13, 2014*

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

This program is an opportunity for students pursuing an undergraduate or graduate degree in Science, Technology, Engineering, and Mathematics (STEM) disciplines to receive a full scholarship and be gainfully employed upon degree completion.

Deadline: *December 16, 2014*