Office of Research and Sponsored Programs
Newsletter, August 2010

ANNOUNCEMENTS

Upcoming Proposal-Writing Workshops

If you want to hone your proposal-writing skills, consider these two upcoming workshops:

November 1-5	Jacksonville, FL	*Grantsmanship Training Program*
November 17-18	Boca Raton, FL	*Essential Grant Skills*

ORSP will pay up to $1,000 for faculty to attend but you are required to submit a proposal as a result of the workshop.

NIH Downloads and Transcripts

Free Podcast/itunes downloads and transcripts are available on the following topics:

Grant Writing for New Investigators
Considerations for Early Stage Investigators
Jump Starting Your Research Program for New Faculty Members

http://grants.nih.gov/podcasts/All_About_Grants/index.htm

NSF Handbook on International REU Sites

NSF has published a handbook of best practices for International Research Experiences for Undergraduates. *http://www.nsf.gov/pubs/2006/nsf06204/index.html* takes you right to it.

NSF's New Grant Guidelines for 2010

Follow *http://www.nsf.gov/pubs/policydocs/pappguide/nsf10_1/index.jsp* to download the PDF of the 2010 grant guidelines. A summary of significant changes is also posted at this site.

Grants.gov Submission Guidelines

Due to heavy traffic on the grants.gov server, ORSP has been advised to begin the submissions process to grants.gov two working days prior to the submission deadline date. This means ORSP needs your completed proposal **four** days prior to the submission deadline. If you wish to apply for a grant through grants.gov, contact Beth Rieger at *brieger@fgcu.edu.*

ORSP Services for Proposal Preparation and Submission

ORSP offers a multitude of services to assist you in preparing and submitting grant applications. Please ask us to assist in developing your budget. If we do so, we will complete the proposal's budget forms, thereby saving you much frustration and time. We ensure all the required forms are attached and that your proposal is compliant with the specifications outlined in the RFP/RFA. ORSP needs to receive your completed proposal package three business days (four business days for grants.gov) before the submission deadline. If ORSP receives the completed proposal with less than the three (or four) business days' lead time, we cannot guarantee that the proposal will be submitted.

ORSP Website

We would like to include links to websites associated with the many externally funded projects currently active. Send the URLs to *dstremke@fgcu.edu* and the link will be added to ORSP's site.

Automatic Notifications of Funding Opportunities

ORSP offers, free of charge, an electronic notification system of just-announced funding opportunities that match your specific interests. Please contact us to create your profile. If you have a profile but the funding opportunities are no longer appropriate, please contact us to help you edit your profile.

ORSP Program: Student Travel Awards

ORSP supports enrolled FGCU students by providing funds on a first-come, first-serve basis so they can present their scholarly works at conferences. ORSP staff will assist the students with the necessary paperwork, both before and after the travel. Within 30 days of travel completion, all awardees are required to submit a one-page report to ORSP describing the benefit of the award and the overall experience. Awardees are required to participate in Research Day in April. The guidelines and application form are at: *http://www.fgcu.edu/orsp/internalPrograms.html*

ORSP Program: Faculty Travel Awards

ORSP provides travel awards up to $1,000 for faculty to attend technical workshops or other related activities for the purpose of increasing chances of obtaining a grant. The trip must result in a proposal submission through ORSP. The application consists of the following items: a 50-100 word abstract of the proposed project; workshop information or the specific purpose of the trip; and an estimated budget for travel expenses. Guidelines and application are at: *http://www.fgcu.edu/orsp/internalPrograms.html*

CONGRATULATION$

Awards During the Past Two Months

College of Arts & Sciences			
CORCORAN, Peter B.	Rockefeller Philanthropic Collaborative	Earth Charter Scholarship Project	$10,000.00
COX, John	Florida Department of Education	Commissioner's Task Force on Holocaust Education	$ 10,000.00
COX, John	ORSP Internal Grant	To Kill a People: Genocide in the 20th Century	$ 4,396.00
FAUERBACH, Michael	ORSP Internal Grant	Enhancing the Imaging Capabilities of the Egan Observatory	$4,288.75
FUGATE, David	ORSP Internal Grant	Salt Plug Density Driven Circulation in the Ten Thousand Islands	$5,000.00
GOGATE, Lakshmi	ORSP Internal Grant	A Developmental Study of Infants' Learning of Verb-Action Relations	$5,400.00
LAGIER, Michael	ORSP Internal Grant	The Development of Genetic Tools for Characterizing the Virulence Factors	$5,000.00
MacDONALD, James	ORSP Internal Grant	Mineral Carbon-Dioxide Sequestration Potential	$5,000.00
MUJTABA, Mustafa	ORSP Internal Grant	Development of a Rapid Detection Dipstick Assay for Enterotoxins	$5,000.00
PARSONS, Michael Tolley, Greg; Fugate, David; Loh, Ai Ning; Rumbold, Darren; Savarese, Mike; Urakawa, Hideotoshi; Volety, Aswani	US Department of Education	The Impacts of Variable Freshwater Inflow and Sea Level Rise	$350,000.00
RUMBOLD, Darren	FGCU/ORSP	Marine Science Equipment and Student Support	$46,000.00
URAKAWA, Hidetoshi	ORSP Internal Grant	Ecological role of microbial community on a nutrient pool in the Caloosahatchee River and Estuary	$5,000.00
VOLETY, Aswani Rumbold, Darren Wasno, Robert	West Coast Inland Navigation District	Shark Ecology and Environmental Education Program	$30,240.00
WATANABE, Ken	National Aeronautics and Space Administration	Additional Observations to Search for Unpredicted Gamma-Ray	$40,000.00
LOH, Ai Ning Denham, Susan Parsons, Michael	National Oceanic and Atmospheric Administration	Is Thalassia testudinum and Halodule wrightii growth light limited in Southwest Florida?	$20,000.00
Lutgert College of Business			
PEGNETTER, Richard	Alico Corporation	Alico Corporation Endowed Chairs	$37,000.00
YAZICI, Hulya Julie	ORSP Internal Grant	Assessment of Supply Chain Visibility	$5,000.00
College of Health Professions			
POLK, Marydelle	Department of Health and Human Services	Advanced Education Nurse Traineeship 2010-11	$32,224.00
RODGERS, Marianne	FGCU Foundation	Edith Potter Deats Professorship	$2,100.00
RODGERS, Marianne	FGCU Foundation	Southwest Florida Endowed Nursing Chair	$14,500.00
VENGLAR, Mollie	ORSP Internal Grant	The Effects of Spinal Mobilization in People with Parkinson's Disease	$5,000.00
College of Professional Studies			
WALSH-HANEY, Heather	Foundation to Promote Open Society	Feminicide in Guatemala	$22,665.00
BUSSON, Terry Banyan, Margaret	Tindale, Oliver, and Associates	Lee Tran JARC and New Freedom Task	$5,082.00
Academic Affairs			
HARTKE, Joanne	Florida Institute of Government	FGCU IOG 2010-2011	$67,500.00
Administrative Services			
MOORE, Chief Steven	Florida Department of Education	FGCU Emergency Notification Enhancements 2010	$161,500.00

Submissions During the Past Two Months

College of Arts and Sciences			
ALLMAN, Phillip	FL Institute of Oceanography	Assessing The Potential Impact of Oil Spill on Terrapins	$150,035.00
BARRETO, Jose Sweeney, James D. Torres, Jorge	Office of Naval Research	Developing decontamination and detection technologies for bio-defense,	$1,200,000.00
DUKE, L. Donald	FL Institute of Oceanography	Baseline Data, Caps Analysis, and Response Monitoring	$103,942.00
FUGATE, David	FL Institute of Oceanography	Shiptime Support for FGCU's Marine Science Curriculum	$3,600.00
GOEBEL, Anna	U.S. Geological Survey	Identifying Patterns of Divergence, Divergence Times	$99,413.00
GOGATE, Lakshmi	National Science Foundation	Multisensory Underpinnings of Lexical Comprehension	$669,018.00
ISERN, Sharon Michael, Scott	National Institute of Health	Characterization of a dengue virus entry inhibitory peptide	$315,374.00
JACKSON, Jerry	FL Institute of Oceanography	Movements and Behavioral Ecology of Birds	$143,998.00
MEYER, Angela Mon, Manuel J.	FL Space Grant Consortium	The Lunar Phases Project	$1,053.00
RUMBOLD, Darren Hammerschlag, Neil	University of Miami	Rapid baseline assessment of shark distribution patterns, migration, trophic dynamics & PAH exposure	$83,458.00
RUMBOLD, Darren Barreto, Jose Loh, Ai Ning Volety, Aswani	FL Institute of Oceanography	Impacts from MC252 Oil on Ecologically Plankton of the Gulf of Mexico	$350,779.00
MCSHANE, Megan	US Department of State	Institute for Scholars	$122,288.00
College of Business			
RODRIGUEZ, Walter	San Diego Workforce Partnership Inc.	Military Spouse Career Advancement Account/SDWP	$59,950.00
RODRIGUEZ, Walter	Economic Development Administration	uC: A New Breed of Ubiquitous Collaboration Tech Enterprise	$1,000,000.00
College of Education			
ELLIOTT, Elizabeth Vazquez-Montilla, Elia	Special Education Improvement Grants	Preparing Preservice Teachers	$299,860.00
KOHLER, Susan Hibbard, Susan	National Association for Alternative Certification	After the Immersion	$1,995.38
College of Health Professions			
CHAPA, Deborah Hunt, Dennis Lupe, Lori	National Institute of Health	CARE	$296,886.00
RODGERS, Marianne	Everglades Area Health Education	Tobacco Training & Cessation	$2,700.00
College of Professional Studies			
MESLOH, Charlie	National Institute of Justice	FGCU Law Enforcement And Public Safety	$200,000.00
SMITH, Howard Banyan, Margaret	Cape Coral Police Department	Take Home Vehicle Program Evaluation	$5,775.00
Academic Affairs			
ROBERTS, Thomas	U.S. Department of Commerce-National Institute for Standards and Technology	FGCU Innovation Hub (Ihub) Construction	$11,936,689.00
Administrative Services			
MOORE, Chief Steven	U.S. Department of Justice	FGCU COPS Hiring 2010	$187,453.00

FUNDING PROGRAM$
Business/Entrepreneurship

Partnerships for Innovation

One of the general goals of the Partnerships for Innovation Program (PFI) is to 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. Aligned with this goal, the PFI competition for FY 2011 funds will provide support for innovation capacity building to sustained, dynamic interactive knowledge-enhancing partnership groups composed of academic researchers and small business (as defined by the Small Business Administration (SBA)) practitioners focused on intense exploration, redefinition, and creation of novel platforms for translating research and moving it towards impact. The basic organizational core of each proposed knowledge-enhancing partnership group must be composed of an academic lead institution and, at a minimum, two small businesses. These newly created partnership groups will provide small group process models for innovation, their hallmark being a collaboration in which research and its translation paths are shaped and expanded from both the research and the business perspectives. While the center-piece of this group is academe and small business, large businesses and non-profits may participate in this core knowledge-enhancement partnership unit.

The ideal project would consist of exploration, re-definition, and creation of a novel platform, that is, one that can be applied to many markets and problems/opportunities (multi-product or process platforms). Some examples of platforms include the following: laser-based technologies that have multiple applications in product verticals; software algorithms that can be customized in different applications to provide multiple functionalities; nano-structured materials that may have multiple applications, environmental remediation technologies; re-manufacturing technologies--a more sustainable approach than conventional manufacturing involving a process of returning used products to at least original performance--that can be applied to diverse industries; energy conservation or storage technologies; innovation through design or education in innovation with widespread impact; and personalized medicine/genetic testing. Partnerships that support areas pertaining to energy, sustainability, or education of next generation entrepreneurs are particularly desirable. Some examples of the kinds of activities that could be engaged in by the knowledge-enhancing partner companies working with academe are feasibility research, alpha-prototype development, design, and product conceptualization.

This competition will support 9 to 11 promising partnerships between academic researchers and small business practitioners that engage in the important process of dynamic knowledge enhancement to build capacity to generate and sustain innovation. Partnerships may also include other academic institutions, other private sector organizations (such as large businesses and not-for-profit organizations) and state/local/federal government.

http://www.nsf.gov/pubs/2010/nsf10581/nsf10581.htm?WT.mc_id=USNSF_25&WT.mc_ev=click

Deadline: October 1, 2010 (Letter of Intent)
December 4, 2010 (Full Proposal)

Small Business Technology Transfer Program

The primary objective of the STTR Program is to increase the incentive and opportunity for small firms to undertake cutting-edge, high risk, high quality scientific, engineering, or science and engineering education research that would have a high potential economic payoff if the research is successful. The STTR program expands the public and private partnership to include collaborative opportunities for small businesses and non-profit research institutions. A team approach is required in an STTR project where at least one research investigator is employed by the small business concern and at least one investigator is employed by a collaborating research institution.

The fundamental mission of NSF is to promote discoveries and to advance education across the frontiers of knowledge in science and engineering. Consistent with that mission, NSF encourages and supports a wide range of proposals from the research and education community and also from the private small business sector. These proposals are reviewed under NSF's merit review criteria, which cover both the quality of research (intellectual or technical merit) and its potential impact on society (broader/commercial impacts).

The STTR program solicits proposals from the small business sector consistent with NSF's mission. The program is governed by Public Law 107-50. A main purpose of the legislation is to stimulate technological innovation and increase private sector commercialization. The NSF STTR program is therefore in a unique position to meet both the goals of NSF and the purpose of the STTR legislation by transforming scientific discovery into both social and economic benefit, and by emphasizing private sector commercialization. Accordingly, **NSF has formulated a broad solicitation topic for STTR (Digial Gaming in Education (DGE) see section A.10).**

Successful proposers will conduct Research and Development (R&D) on projects that:

1. Provide evidence of a commercially viable product, process, device, or system, and
2. Meet an important social or economic need.

Projects should have the following:

- High potential commercial payback, and
- High-risk efforts.

Projects may also address:

- Research tools which meet significant commercial market needs, or,
- Applications that result in multipurpose commercially viable functions.

For more in-depth program information please reference the following web site:
http://www.nsf.gov/eng/iip/sbir/program_reqs.jsp.

Deadline: November 17, 2010

Sustainable Vision Grants

National Collegiate Inventors and Innovators Alliance funds transformational education programs where breakthrough technologies are created and commercialized for the benefit of people living in poverty in the US and abroad. Sustainable Vision has both a domestic and global outlook. To date, 24 US universities have received funding through the program to develop, commercialize, and disseminate technologies in 23 countries throughout Asia, Africa, and Latin America.

Sustainable Vision grants fund transformational education programs where breakthrough technologies are created and commercialized through entrepreneurial models for the benefit of people living in poverty in the US and abroad. Funds are awarded to US-based colleges and

universities and can then be shared with partners (other universities, NGOs, etc.) in the US and abroad.

Focus areas include, but are not limited to, health, clean air and water, energy, nutrition, and shelter. The grants support enrichment and deepening of ongoing programs by building and strengthening interpersonal and inter-institutional networks, and by creating new initiatives within existing programs.

Successful Sustainable Vision proposals meet the following criteria:

- *Technology:* market-driven affordable technology innovations that meet basic human needs (such as medical devices, mobile phone software for income generation, energy alternatives, etc.)
- *Entrepreneurship:* economically sustainable business model(s) with proven customer and market needs instead of a philanthropic or aid model
- *Commercial potential:* programs that lead to the creation of economically sustainable social ventures (for profit and/or non- profit) with a business model that includes manufacturing, marketing, distribution, and repair (as applicable)
- *Education:* experiential curricula with measureable objectives and an emphasis on multidisciplinary teams (engineering, science, technology, social science, business, etc.)
- *Partners:* to support the project from the nonprofit, for profit and/or government sectors, including collaboration with customers
- *Replicable and sustainable:* models that can be replicated and programs that continue after the grant period ends
- *Impact* includes potential for:
  - widespread adoption across communities, regions, and/or nations, and potential for an impact on a global scale
  - affecting a significant number of people and having a real and measurable impact on the problem being addressed
  - improving the quality of life for people living in poverty
  - positive (or neutral) environmental impact

Sustainable Vision grant recipients are required to attend a summit-style workshop in March at the NCIIA Annual Conference where they will share their work, learn about periodic program evaluation and follow-through, and define/refine an evaluation plan and developing, documenting, and disseminating transferable models.

Sustainable Vision grant recipients are required to participate in an Advanced Invention to Venture (AI2V) workshop (or provide explanation of an equivalent experience) in order to develop a solid commercialization strategy. AI2V workshops are held around the country throughout the year. A small pool of scholarships are available for (NCIIA) funded teams without adequate travel funds.

Sustainable Vision grants support programs that apply technology entrepreneurship to address poverty and environmental degradation, and/or meet basic human needs such as clean air and water, nutrition, health care, and shelter. Preferred proposals address the proposal criteria and:

- Follow a collaborative and entrepreneurial, rather than an aid or donation model
- Generate entrepreneurial opportunities and define an economically sustainable business model
- Build upon existing relationships (e.g., historic collaborative or exchange programs between the applicant institution and an institution overseas)

- Establish measurable educational objectives
- Plan to engage beneficiaries of new technologies in their design and development
- Demonstrate sustainability after the end of the grant period
- Include documentation of market potential
- Examine environmental and social outcomes
- Apply technological innovation or innovative use of resources
- Show potential global impact
- Address the needs of people living in poverty

All proposals must be submitted to the NCIIA online. ORSP will submit the proposal. Please contact Beth Rieger at ext. 7027 for details. Award amounts are $10,000 to $50,000, and the grant period is one to three years

http://nciia.org/grants/sustainablevision

Deadline: October 15, 2010

Health

Childhood Obesity

Healthy Eating Research, a national program of the Robert Wood Johnson Foundation, supports studies to identify and evaluate policies and environmental approaches that have the greatest potential to improve children's diets and energy balance to reverse the nation's levels of childhood obesity.

Healthy Eating Research issues CFPs to solicit scientifically rigorous, solution-oriented proposals from investigators representing diverse disciplines and backgrounds. The program's overall aims are to identify strategies likely to have important population-level impacts and to provide decision- and policy-makers with evidence to guide and accelerate effective action to reverse the childhood obesity epidemic.

The three types of funding opportunities included in this CFP are Round 5 grants, rapid-response grants and *New Connections* grants through *Healthy Eating Research*. All applicants are encouraged to visit the web site at *www.healthyeatingresearch.org* and view the abstracts for studies previously funded through the program. The Web site also has other pertinent applicant resources, such as examples of studies, a bibliography related to the research topics, syntheses of research recommendations from the Institute of Medicine and other authoritative groups, examples of nationally representative data sources, key reports, and research briefs and syntheses.

http://www.rwjf.org/files/applications/cfp/cfp_HER2010.pdf

Deadlines: March 15–September 1, 2010—Concept papers may be submitted

(This program first appeared in the ORSP April Newsletter.)

Diversity in Health-Related Research

The NIH recognizes a unique and compelling need to promote diversity in the biomedical, behavioral, clinical and social sciences research workforce. The NIH expects efforts to diversify the workforce to lead to the recruitment of the most talented researchers from all groups; to improve the quality of the educational and training environment; to balance and broaden the perspective in setting research priorities; to improve the ability to recruit subjects from diverse backgrounds into clinical research protocols; and to improve the Nation's capacity to address and eliminate health disparities. This FOA issued by the National Heart, Lung, and Blood Institute, National Institutes of Health, solicits Research Education (R25) applications from institutions/ organizations to promote diversity in undergraduate and health professional student populations

by providing short-term research education support to stimulate career development in cardiovascular, pulmonary, and hematologic diseases research.

The total project period for an application submitted in response to this funding opportunity may not exceed 5 years. Although the size of award may vary with the scope of the research education program proposed, it is expected that applications will stay within the following budgetary guidelines: the maximum total direct costs should not exceed $311,088.

The applicant institution must have a strong research program in the area(s) proposed for research training and must have the requisite staff and facilities to carry out the proposed program.

This is a limited submission proposal. Please send an e-mail outlining your intentions to Tom Roberts in ORSP, troberts@fgcu.edu. If multiple faculty desire to submit proposals, an internal review will be scheduled.

http://apps.research.ufl.edu/research/fyi/article.cfm?id=22215

Deadline: October 1, 2010.

Effects of the Social Environment on Health

This FOA, issued by the NIH Basic Behavioral and Social Science Opportunity Network (OppNet), solicits Research Project Grant (R01) applications from institutions/organizations that propose to investigate structural, behavioral, sociocultural, environmental, cognitive, emotional, and/or biological mechanisms through which the social environment affects health outcomes.

To address this objective, applicants should propose research studies that will:

1. deepen our understanding of which aspects of social environments affect health outcomes for women and men at different stages of the lifecourse and in different social, economic, geographic, racial and ethnic sub-populations;
2. lead to a clearer understanding of mechanisms through which social environments have such effects; or
3. improve measurement methods and/or contribute to advances in analytic methods used in the study of social environments and health.

For this FOA, components of the social environments may include (and are not limited by): policies and regulations; institutional characteristics of schools, workplace, prisons, etc.; neighborhood and community physical and social features; social networks; social norms, climate and culture (including those that reflect gender differences); residential/living arrangements; labor, financial or drug markets; and systems delivery components for health care or education. In addition, the health outcomes used may include (and are not limited by) positive health behaviors or behavioral risk factors (e.g., desistance of substance use/abuse, healthy or unhealthy or dietary patterns, physical activity or sedentary behaviors, smoking cessation or smoking, substance use/abuse,) and clinical events or disease outcomes (e.g., cancer, cardiovascular events, deaths, diabetes, stroke incidence, substance use disorder, as well as a host of other clinical outcomes or their absence).

Examples of research questions that fall within the scope of this FOA include the following:

- How do social environments influence health across the lifecourse?
- How do social structures (e.g., public policies, neighborhood built environment, etc.) improve or protect health?

- What intermediate structural characteristics of macro-level social environments serve as conduits to effect health outcomes?
- To what extent do the characteristics of the social environment interact with biological/physiological pathways in women and men to influence health outcomes or health-related behaviors?

Successful applicants will be invited to two investigators' meetings to facilitate collaboration, exchanges, and potential intervention research during the initiative's implementation.

http://grants.nih.gov/grants/guide/rfa-files/RFA-DA-11-003.html

Deadlines December 6, 2010 (Letters of Intent)
January 6, 2011 (Full application)

Improving Access to Health Care Grants Program

The Blue Foundation for a Healthy Florida, Inc. accepts applications for the Improving Access to Health Care grants program during two proposal cycles in the summer and winter. Grants are strategically awarded to diverse, philanthropic, community-based solutions that:

- Improve program capacity and reduce barriers to access;
- Nurture community health leadership to reinforce local solutions, foster innovation and sustain quality;
- Leverage financial, human and other resources to maximize measurable impact.
- IMPACT Health Care grants are rich in diversity, from mobile clinics to provide health care to children, to training physicians on women's heart disease symptoms, to improving the lives of Hispanics with diabetes. These grants educate, train and improve the lives of individuals and families throughout Florida.
- The current focus for the IMPACT Health Care grants program is on community-based health clinics and outreach programs.
- Within the community health clinic arena, the Blue Foundation prefers to focus funding on:
- Philanthropic, innovative approaches to health care education, awareness and training programs, especially those that have a grassroots or community outreach component;
- Demonstration and/or research projects that attempt to find a new way to deliver health care or to increase access to health care services for the uninsured and underserved;
- Projects that use innovative techniques or use collaborative methods to address a specific problem in a geographic area or target population.

The Blue Foundation will consider funding for:

- Direct health care services, but must not serve as a replacement for insurance reimbursements or as a supplement to insurance reimbursements from Blue Cross and Blue Shield of Florida.
- General operating support alone or capital campaigns, but this is not a priority area.
- Equipment and supply purchases within proposals.

Requests will generally be considered for proposals of all sizes from $10,000 up to $100,000. Multi-year commitments up to three years may be made, depending upon the request, the need, and the funds available, but the total dollar request should not exceed $100,000. Indirect Costs are not allowed.

http://apps.research.ufl.edu/research/fyi/article.cfm?id=22266

Deadline: September 10, 2010

Investigators in the Pathogenesisof Infectious Disease

The Investigators in the Pathogenesis of Infectious Disease program provides opportunities for assistant professors to bring multidisciplinary approaches to the study of human infectious diseases. This award provides $500,000 over a period of five years ($100,000 per year).

The goal of the program is to provide opportunities for accomplished investigators still early in their careers to study the pathogenesis of infectious disease at its most fundamental level—the points where human and microbial systems connect. The program supports research that sheds light on the fundamentals that affect the outcomes of this encounter: how colonization, infection, commensalism and other relationships play out at levels ranging from molecular interactions to systemic ones.

BWF is particularly interested in work focused on the host, as well as host-pathogen studies originating in viral, bacterial, fungal, or parasite systems. Studies supported by the program may have their roots in the pathogen, but the focus of the work should be on the interplay of host and microbe.

While work on AIDS, malaria, tuberculosis, and microbes of interest for biodefense is allowed, the program emphasizes research that opens up unexplored areas of pathogenesis. Research on under-studied infectious diseases, including pathogenic fungi, protozoan and metazoan diseases, and emerging infections is especially of interest. In addition, excellent animal models of human disease, including work done in veterinary research settings, are within the program's scope. Interdisciplinary approaches are encouraged.

The awards are intended to give recipients the freedom and flexibility to pursue high-risk projects and new avenues of inquiry. Work supported will be efforts that have the potential to significantly advance the understanding of how microbes and the human system interact, especially in the context of infection. Biochemical, pharmacological, molecular, genetic, immunologic, and other approaches are all appropriate for support by the program. Areas of particular interest include:

- **Cell/Pathogen interactions**—studies of host responses at the cell surface, cell signaling in response to infection, microbial persistence in host cells, and other work.
- **Host/Pathogen interactions**—studies of how host genetics influences resistance and susceptibility to infection, innate and adaptive immune responses to microbes, pathogen modulation of the immune system, and other work.
- **Novel routes to disease causation**—studies of the role of infectious agents in the etiology of chronic, autoimmune, and immunologic diseases, and other work.

Approaches that fit into these frameworks might include the study of host susceptibility to particular pathogens, host resistance to chronic or acute disease, or basic studies of infectious microbes—as long as the work is oriented toward understanding how the organism interacts with the host. Virulence factors, immune mechanisms, and genetic studies in microbes and the host all provide fertile ground for this kind of study. Work on AIDS, malaria, tuberculosis, and organisms of interest for biodefense may be submitted, but nominating institutions should note that research on under-funded and under-studied organisms is especially of interest: proposed work in well-funded systems may be viewed as less relevant to the program's goals.

http://www.bwfund.org/pages/105/Investigators-in-the-Pathogenesis-of-Infectious-Disease/

Deadline: November 1, 2010

Humanities

Archaeology

The NSF Archaeology Program provides support for anthropologically relevant archaeological research at both a "senior" and doctoral dissertation level. It also funds anthropologically significant archaeometric research. High risk exploratory research proposals are accepted for consideration and a description of these competitions is provided in the Archaeology Program Overview. For more information about the Crosscutting Research and Training Opportunities, please visit the *Cross-Directorate Activities* webpage. Here, you will find a brief synopsis about each program, as well as links guiding you to the appropriate Program Solicitations.

Also, for more information on the Doctoral Dissertation Improvement Grants please visit the *Archaeology specific page.*

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=11690&org=NSF&sel_org=NSF&from=fund

~~**July 1, 2010**~~	**December 1, 2010**	**December 1, 2010**
~~**Archaeology – Senior Research**~~	**Archaeometry**	**Archaeology - Senior Research**
~~**July, Annually Thereafter**~~	**December 1, Annually Thereafter**	**December 1, Annually Thereafter**

Cultural Anthropology Scholars Awards

The National Science Foundation announces an opportunity for methodological training by cultural anthropologists who are active researchers. The purpose is to help cultural anthropologists upgrade their methodological skills by learning a specific analytical technique which will improve their research abilities.

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5321&govDel=USNSF_39

Deadlines: August 16, 2010; January 16, 2011

Improving Historical Records

The National Historical Publications and Records Commission seeks proposals to develop new strategies and tools that can improve the preservation, public discovery, or use of historical records. Projects may also focus on techniques and tools that will improve the professional performance and effectiveness of those who work with such records, such as archivists, documentary editors, and records managers. Projects must anticipate results that will affect more than a single institution or a single state.

A grant normally is for one to three years. The Commission expects to make one to three grants of between $50K and $150K. The total amount allocated to this category is up to $350K. Cost sharing is required. The Commission provides no more than 75% of total project costs.

http://www.archives.gov/nhprc/announcement/strategies.html

Deadline: October 7, 2010

(This program first appeared in the ORSP January Newsletter.)

Publishing Historical Records

The National Historical Publications and Records Commission seeks proposals to publish historical records of national significance. Projects may focus on the papers of major figures from American life or cover broad historical movements in politics, military, business, social reform, the arts, and other aspects of the national experience. The historical value of the records and their expected usefulness to broad audiences must justify the costs of the project. Grants are awarded for collecting, describing, preserving, compiling, editing, and publishing documentary source materials. The NHPRC does *not* fund proposals to purchase historical records or proposals to publish the papers of anyone who has been deceased for fewer than 10 years.

Applicants may apply for funding up to three years. Applicants should be aware that the Commission normally awards grants on an annual basis; subsequent funding is conditioned on previous years' project performance. Award amounts ordinarily range from $20K to $250K annually. Cost sharing is required.

http://www.archives.gov/nhprc/announcement/publishing.html

Deadline: October 7, 2010, (New Republic through the Modern Era)

(This program first appeared in the ORSP January Newsletter.)

Sustaining Cultural Heritage Collections

NEH Sustaining Cultural Heritage Collections helps cultural institutions meet the complex challenge of preserving large and diverse holdings of humanities materials for future generations by supporting preventive conservation measures that mitigate deterioration and prolong the useful life of collections. To help institutions develop sound preventive conservation projects, NEH encourages collaborative and interdisciplinary planning, which is important for identifying sustainable strategies. Such planning should include consideration of the following factors: the nature of the materials in a collection; the performance of the building, its envelope, and its systems in moderating internal environmental conditions; the capabilities of the institution; the nature of the local climate and the effects of climate change; the cost-effectiveness and energy efficiency of various approaches to preventive conservation; and the project's impact on the environment. Sustaining Cultural Heritage Collections offers two kinds of awards:

1. **Grants for planning**. To help an institution develop and assess preventive conservation strategies, grants up to $40,000 will support planning projects, which may encompass such activities as site visits, planning sessions, monitoring, testing, project-specific research, and preliminary designs for implementation projects. Planning grants focused on exploring sustainable preventive conservation strategies are especially encouraged. These grants might be used to:
   - examine passive and low-energy alternatives to conventional energy-intensive mechanized systems for managing environmental conditions;
   - analyze existing climate control systems and the performance characteristics of buildings and building envelopes to develop a plan for improved operation, effectiveness, and energy efficiency; or
   - evaluate the effectiveness of preventive conservation strategies previously implemented, including energy-efficient upgrades to existing systems and performance upgrades to buildings and building envelopes.

   Planning projects must involve an interdisciplinary team appropriate to the goals of the project. The team may consist of consultants and members of the institution's staff and might include architects, building engineers, conservation scientists, conservators, curators, and facilities managers, among others.

   It is expected that SCHC planning grants would address complex preservation challenges that require an interdisciplinary team to arrive at possible solutions. Therefore, an applicant for a planning grant must have completed its basic preservation planning and identified its preservation challenges and priorities. Such basic activities as completing general preservation assessments and establishing environmental monitoring programs are eligible for support through NEH's Preservation Assistance Grants for Smaller Institutions and would not be appropriate as the focus of an SCHC planning grant.

For projects that focus on serving the field by developing new technical standards, best practices, and tools for preserving humanities collections, please see Preservation and Access Research and Development grants.

2. **Grants for implementation**. To help an institution implement a preventive conservation project, grants of up to $400,000 are available. Implementation projects should be based on planning that has been specific to the needs of the institution and its collections within the context of its local environment. It is not necessary to receive an NEH planning grant to be eligible for an implementation grant. Planning could be supported by NEH, other federal agencies, private foundations, or an institution's internal funds. Implementation grants to preserve humanities collections might be used to:
   - manage interior relative humidity and temperature by passive methods such as creating buffered spaces and housing, controlling moisture at its sources, or improving the thermal and moisture performance of a building envelope;
   - install or re-commission heating, ventilating, and air conditioning systems;
   - install storage systems and rehouse collections;
   - improve security and the protection of collections from fire, flood, and other disasters; or
   - upgrade lighting systems and controls, to achieve energy efficiency and levels suitable for collections.

   Implementation grants may also cover costs associated with renovation required to implement preventive conservation measures. Because SCHC grants may **not** fund new construction, the costs of installing climate control, security, and fire protection systems in a building under construction are not eligible. However, grants may support the purchase of storage furniture and the rehousing of collections that will be moved into a new building. Applicants may request support for cataloging, documenting, and digitizing collections only when these activities are integral to the proposed project.

http://www.neh.gov/grants/guidelines/SCHC.html

Deadline: November 16, 2010

INTERDISCLIPLINARY

CISE Cross-Cutting Programs

This solicitation seeks proposals in areas that are scientifically timely, and that benefit from the intellectual contributions of researchers with expertise in a number of computing fields and/or sub-fields. The cross-cutting programs for FY 2011 are:

- **Network Science and Engineering;**
- **Smart Health and Wellbeing; and**
- **Trustworthy Computing.**

CISE expects that these cross-cutting programs will evolve or be absorbed into the core programs, and that new cross-cutting programs will be introduced. For example, the FY 2009-2010 Data-intensive Computing program is absorbed into the CISE core programs for FY 2011, and the Smart Health and Wellbeing cross-cutting program is being introduced in FY 2011. CISE anticipates that the FY 2009-2011 Network Science and Engineering program will be absorbed into the CISE core programs next year, in FY 2012.

For Smart Health and Wellbeing and Trustworthy Computing, proposers are invited to submit proposals in three project classes, which are defined as follows:

- **Small Projects**: up to $500,000 total budget with durations up to three years;

- **Medium Projects**: $500,001 to $1,200,000 total budget with durations up to four years;
- **Large Projects**: $1,200,001 to $3,000,000 total budget with durations up to five years.

Network Science and Engineering proposals may be submitted only in two of the three project classes defined above: Medium and Large. A more complete description of the project classes can be found in section *II. Program Description*, of this document.

CISE investments in Small, Medium and Large projects complement the directorate's investments in the Expeditions in Computing program, http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503169&org=CISE&from=home, where projects are funded at levels of up to $10,000,000 total for durations up to 5 years.
http://www.nsf.gov/pubs/2010/nsf10575/nsf10575.htm?WT.mc_id=USNSF_25&WT.mc_ev=click

Deadlines: December 01, 2010 - December 17, 2010 (SMALL projects)
September 01, 2010 - September 15, 2010 (MEDIUM Projects)
November 01, 2010 - November 28, 2010 (LARGE Projects)

Education, Innovation and Entrepreneurship

Course and Program grants are awarded to strengthen existing curricular programs or build new courses and programs in invention, innovation, and technology entrepreneurship, with an increasing emphasis on environmental and social entrepreneurship. Successful proposals present creative pedagogical approaches that generate and deploy student E-Teams, bringing real-life applications into the classroom setting and beyond.

An E-Team is a multidisciplinary group of faculty, students, and industry mentors working together to bring a product or technology to market. The "E" stands for excellence and entrepreneurship. Award amounts are $2,000 to $50,000, and the grant period is one to three years.
http://nciia.org/grants/courseandprogram

Deadlines: December 3, 2010; May 6, 2011

Interface between Computer Science and Economics & Social Sciences

The histories and intellectual approaches of social and economic science and computer science have been strongly influenced by the crosscurrents among them. Worst-case computational complexity analysis, so prevalent in computer science, is a form of game-theoretic analysis--perhaps not surprising considering that one of the founders of game theory, John von Neumann, was also a pioneering figure in computer science. Game theory is widely used in social and economic science. Social and economic scientists use concepts that are linked to computer science. For example, decision scientists and economists consider the *bounded rationality* of individuals making economic decisions; one aspect of bounded rationality is that economic agents may be limited by their "*computational*" resources, for example in evaluating complicated strategic situations.

The ubiquity of socio-technical networks has led to new, more intimate ties between these two fields. New kinds of interactions and transactions have been enabled by such networks. Key features of these new transactions include:

- parties who do not know or trust each other
- parties represented by software agents
- real-time adaptation, decision making, and chain reactions by agents

Designing decision mechanisms that can govern these increasingly important types of transactions in ways that meet criteria such as fairness, revenue maximization, or efficient resource

use is a challenge that requires the expertise of both social and economic scientists and computer scientists.

Internet traffic (as also physical traffic on our road networks), email, the use of network bandwidth, the allocation of computing resources to competing processes, etc., may be managed using economic and social choice mechanisms to achieve better utilization and reduction of the nuisance and harm caused by intruders and spammers. Good incentive mechanisms are also needed to mediate the interactions among infrastructure providers, service providers, and clients for computing and communication infrastructure. Mechanisms are also important in driving multi-agent software systems towards socially desirable goals. These questions may require a new understanding of simultaneous collaboration and competition among economic agents.

Computational thinking has the potential to change the types of questions considered by social and economic scientists. For example, Nash (and other) equilibria lie at the heart of theories about the behavior of economic agents. Computational thinking can help characterize the range and robustness of possible equilibria and markets for which the computation of equilibria is intractable. Theories of strategic learning by computational agents, studied both in economics and computer science, can shed light on the dynamics of how agents arrive at equilibria. Theories of the spread of contagion or gossip in networks can help explain and contain the chain reactions that can arise. Social/behavioral/economic and computer scientists can jointly study the dynamic functioning and evolution of social and economic networks with mutual benefit to both fields of study. Some important examples of such systems are recommender systems, voting systems, and reputation management systems.

This program seeks innovative research at this interdisciplinary boundary, including both projects that use computational thinking for economic and social decision problems and/or ideas from economics and other social sciences for computing and communication systems and multi-agents systems. Computational economics research involving simulation and modeling of economic systems is not appropriate for this program.

Illustrative examples of the kinds of research this program seeks to support can be found at: *http://www.nsf.gov/cise/ccf/ices_pgm.jsp*

Deadline: October 05, 2010

SOCIAL, BEHAVIORAL AND ECONOMIC SCIENCES

Future Research

At the end of the first decade of the 21st century, the social, behavioral, and economic sciences face extraordinary opportunities to address next-generation research challenges. The landscape is vast and complex, stretching across temporal and spatial dimensions and multiple levels of analysis -- from studying the human brain to implications of decision making in a dynamic and fragmented yet interconnected world. As we look forward 10 or even 20 years, the Directorate for the Social, Behavioral, and Economic Sciences of the National Science Foundation seeks to frame innovative research for the year 2020 and beyond that enhances fundamental knowledge and benefits society in many ways.

This request is part of a process that will help NSF/SBE make plans to support future research. Other activities will include a report by the Directorate's Advisory Committee about the grand challenges facing the SBE sciences over the next decade and recommendations from the Directorate's staff. The insights resulting from this process are threefold: They will inform the substance of future research, the capacities to pursue that research, and the infrastructure to

enable investigations that will be increasingly interdisciplinary and international and will involve multiple perspectives and intellectual frameworks, differing scales and contexts, and diverse approaches and methodologies.

As a first step in engaging its community, NSF/SBE invites individuals and groups to contribute white papers outlining grand challenge questions that are both foundational and transformative. They are foundational in the sense that they reflect deep issues that engage fundamental assumptions behind disciplinary research traditions and are transformative because they seek to leverage current findings to unlock a new cycle of research. We expect these white papers to advance SBE's mission to study human characteristics and human behaviors in its Social and Economic Sciences and Behavioral and Cognitive Sciences divisions, as well as to be the nation's resource for understanding the structure and development of science through its Science Resources Statistics division.

http://www.nsf.gov/pubs/2010/nsf10069/nsf10069.jsp?WT.mc_id=USNSF_80

Deadline: September 30, 2010

STEM

Agricultural Development

NSF and the Bill & Melinda Gates Foundation are partnering to support a new research program to be administered by NSF. The objective of the BREAD Program is to support innovative basic scientific research designed to address key constraints to smallholder agriculture in the developing world. A significant distinction between BREAD and other NSF programs is that proposals to BREAD must make a clear and well-defined connection between the outcomes of the proposed basic research and its direct relevance and potential application to agriculture in the developing world. The BREAD Program takes the activities of the Plant Genome Research Program to the next level by supporting a broader range of scientific research and by enabling funding to be allocated to international collaborators through subawards.

The Program's focus is on novel, transformative basic research at the proof-of-concept stage rather than its application or development. Especially encouraged are original proposals that address major constraints to the productivity of crops important to smallholder farmers, or on the development of novel and efficient production practices. Although the Program places an initial emphasis on crop improvement, it will also consider innovative basic research proposals from scientists in all fields of research and engineering as long as the proposed research is consistent with the Program objectives. Proposals are also expected to address project outcomes in the context of broader societal impacts, and as appropriate to the research proposed, engage international partners in scientific collaborations.

http://www.nsf.gov/pubs/2010/nsf10589/nsf10589.pdf?WT.mc_id=USNSF_25&WT.mc_ev=click

Deadlines: September 16, 2010 (Required Letter of Intent)
November 16, 2010 (full application)

Algebra, Number Theory and Combinatorics

NSF supports research in algebra, including algebraic structures, general algebra, and linear algebra; number theory, including algebraic, analytic number theory, arithmetic geometry, quadratic forms, and automorphic forms; combinatorics, including graph theory; and algebraic geometry. The web site offers abstracts of recent grants.

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5431

Deadline: October 5, 2010

Astronomy and Astrophysics Research Grants

The Astronomy and Astrophysics Research Grants Program provides individual investigator and collaborative research grants for observational, theoretical, laboratory and archival data studies in all areas of astronomy and astrophysics, including but not limited to the following areas of study:

- *Planetary Astronomy:* Studies of the detailed structure and composition of the surfaces, interiors and atmospheres of the planets and satellites in the Solar System; the nature of small bodies (asteroids and comets); the inter-planetary medium; and the origin and development of the Solar System.
- *Stellar Astronomy and Astrophysics*: Studies of the structure and activity of the Sun and other stars; the physical properties and composition of all types of single and multiple stars; compact objects and their interactions; extra-solar system planet formation and detection; star formation and stellar evolution; stellar nucleosynthesis; and the properties of atoms and molecules of relevance to stellar astronomy.
- *Galactic Astronomy:* Studies on the composition, structure and evolution of the Milky Way galaxy and nearby galaxies. Research may focus on the stellar populations in these galaxies; the characteristics of star clusters; the interstellar medium; and the properties of atomic and molecular constituents of the interstellar medium.
- *Extragalactic Astronomy and Cosmology:* Studies of the more distant Universe. Research topics include galaxy formation, evolution and interaction; active galaxies; quasars; large-scale structure; and all areas of cosmology.

Proposals submitted to the AAG Program do not require categorization into one of the study areas identified above. Proposals may span multiple disciplines and/or areas of study and may utilize multiple techniques. Principal Investigators are encouraged to contact one of the Program Officers listed in this announcement prior to submitting a proposal to the AAG Program, particularly if the proposal will include investigators at multiple institutions.

http://www.nsf.gov/pubs/2005/nsf05608/nsf05608.htm

Deadline: September 15 , 2010

Basic, Applied, and Advanced Research White Papers

The Naval Surface Warfare Center solicits scientific and engineering research "white papers" to identify capabilities of University and Non-Profit Institutions to conduct basic research, applied research, and advanced research projects in a wide variety of scientific and engineering disciplines. NSWC is seeking submission of capability statements only. Research projects are expected to require a high level of technical expertise, primarily involving PhD level personnel; personnel requirements include, but are not limited to, the following categories: distinguished postdoctoral, senior postdoctoral, postdoctoral, professors, and graduate students.

NSWC anticipates making multiple awards of grants, cooperative agreements, other transactions, or contracts. When appropriate, research grants will be the preferred award method.

https://www.fbo.gov/index?s=opportunity&mode=form&id=19bed3b41180fea87997eb9fcfc8a1b3&tab=core&_cview=0&cck=1&au=&ck=

Deadline September 30, 2010

(This program first appeared in the ORSP January Newsletter.)

Bioengineering Research Partnerships

The primary objective of this program announcement is to encourage basic, applied, and translational or clinical bioengineering research that could make a significant contribution to improving human health. Bioengineering integrates physical, engineering, and computational science principles for the study of biology, medicine, behavior, or health. It advances fundamental concepts, creates knowledge from the molecular/cellular to the organ systems and holistic level, and develops innovative biologicals, materials, processes, implants, devices, and informatics approaches for the prevention, diagnosis, and treatment of disease, for patient rehabilitation, and for improving health. Some BRP projects may propose research that could lead to a novel device as a product. Partnership with companies that have relevant expertise or that may eventually be involved in commercialization is appropriate under the BRP program. It is expected that a BRP will have a well-defined goal or deliverable that will be achieved within the 5-10 year funding period. Projects with a translational focus are encouraged.

A second objective is to encourage collaborations and partnerships among the allied quantitative and biomedical disciplines. A BRP must bring together the necessary physical, engineering, and computational science expertise with biological or clinical expertise and resources to address a significant area of bioengineering research within the mission of the NIH. The value of strategic partnerships is well supported by the literature of both economics and science and technology policy, which documents greater success at R&D by groups that work in strategic alliances, often involving multiple institutions, compared to those working separately. In addition to the benefits to be derived from the research, the collaborations and partnerships can create opportunities for trans-disciplinary communication and training for a new generation of scientists capable of interacting across traditional technical boundaries. Each partner is expected to provide substantive contributions to intellectual and/or technical aspects of the project that are clearly differentiated from simple subcontractual arrangements.

An application for a BRP award should focus bioengineering research on an area of basic, applied, translational, behavioral, or clinical research that supports a mission of one or more of the participating NIH institutes and centers and where progress is likely to make a significant contribution to improving human health. Some NIH institutes and centers have indicated that they will only consider BRP applications in specific focus areas. These institutes and focus areas are available at http://www.nibib.nih.gov/Funding/Bioengineering/Contacts.

Deadlines: ***October 11, 2010 (Full Proposals)***
March 28, 2011 (Phase II)
Phase I, by invitation only

Chemical Catalysis

The Chemical Catalysis Program supports fundamental experimental and theoretical research directed towards the synthesis and characterization of catalysts and pre-catalysts. This Program accepts proposals on catalytic approaches which facilitate, direct, and accelerate efficient chemical transformations and include, but are not limited to: the design and synthesis of organic, inorganic and hybrid catalytic and pre-catalytic species on the molecular, supramolecular, and nanometer scales; kinetic, mechanistic, and dynamic studies of homogeneous, heterogeneous, biomimetic and biologically-inspired catalytic reactions; characterization of chemical and biochemical catalytic reactions occurring at solid surfaces and/or interfaces; polymerization catalysis; single site catalysis; electrocatalysis (such as water splitting), photocatalysis (such as solar energy conversion); catalytic conversions of fossil fuel feedstocks, biomass conversions, CO_2

activation and other energy-related, catalytic processes; combinatorial catalysis approaches; environmentally-friendly catalytic processes; and applications of modeling, theory, and simulation to catalytic reactions.

The Chemical Catalysis Program does not support scale-up, processing, transport dynamics, long-term stability studies, and other engineering aspects of catalysis. Biological catalysis using cellular systems (systems that are not biological model or biological mimics) should be directed to other programs--Chemistry of Living Systems Program or the Division of Molecular and Cellular Biosciences or the National Institutes of Health.

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503418&org=NSF&sel_org=NSF&from=fund

Deadline: November 1, 2010 - November 30, 2010

(This program first appeared in the ORSP June Newsletter.)

Conferences and Workshops in the Mathematical Sciences

Conferences, workshops, and related activities provide opportunities to disseminate scholarly work widely, to reveal and plan new directions for research, and to engage and encourage students and junior scientists early in their careers, all of which help deepen connections among the mathematical sciences community. DMS particularly welcomes proposals for activities that can increase the number of mathematical scientists who participate in NSF-supported activities.

DMS priorities for this solicitation include:

- Breadth and diversity of participation, in order to help more mathematical scientists stay abreast of developments in the discipline;
- Involvement of students and junior investigators and of individuals from under-represented groups, in order to contribute to the development of the nation's science personnel base;
- Connection to frontiers in the mathematical sciences, to NSF research priorities, and to federal initiatives and strategic areas, in order to advance the mathematical sciences and to strengthen the interchanges between the mathematical sciences and other science and engineering disciplines;
- Overall impact on the US mathematical sciences community.

Diversity and breadth of participation should be understood as applying to institutions as well as to individuals. In particular, it includes those institutions and individuals lacking other federal support.

For conference, workshop, and similar proposals, most funds are expected to be devoted to the support of participants who have no other federal support and participants who are students, post-doctoral scholars, or members of groups that are under-represented in the mathematical sciences.

Requests for international travel by groups of US based mathematical scientists ordinarily originate with US educational institutions or professional scientific societies. Shared support by several federal agencies/states/private organizations is permissible and encouraged. The DMS supports individual requests for international travel as part of regular research proposals and will **not** consider separate proposals for support of an individual's international travel. In general, funding to support participation in conferences held abroad has been limited. Other opportunities for cooperation between US mathematical scientists and those of other countries are provided by the Office of International Science and Engineering (OISE) at NSF.

http://www.nsf.gov/pubs/2010/nsf10578/nsf10578.htm?WT.mc_id=USNSF_25&WT.mc_ev=click

Deadline: Proposals Accepted Anytime; However, proposals must be submitted in accordance with the due date for the appropriate disciplinary program.

East Asia and Pacific Summer Institutes for U.S. Graduate Students

EAPSI awards are available in any area of science and engineering research or education supported by NSF. Applicants are reminded that NSF does not support research with public health or disease-related goals, including the etiology, diagnosis, or treatment of physical or mental disease, abnormality or malfunction in humans or animals. Animal models of such conditions or the development or testing of drugs or other procedures for their treatment also are not eligible for support.

EAPSI aims to provide an international experience to those individuals who have never had one previously. Previous awardees may apply to a new host location, but priority will be given to new applicants. As this program is open to all research fields and disciplines supported by NSF, as well as suitable research institutions, efforts will be made to ensure appropriate distribution of fellowships across disciplinary fields.

The East Asia and Pacific Summer Institutes are administered in the United States by the National Science Foundation. In East Asia and the Pacific, the Summer Institutes are co-sponsored by:

- Australian Academy of Science;
- Chinese Ministry of Science and Technology, Chinese Academy of Sciences, and National Natural Science Foundation of China;
- Japan Society for the Promotion of Science;
- National Research Foundation of Korea;
- Royal Society of New Zealand;
- National Research Foundation of Singapore; and
- National Science Council of Taiwan.

The EAPSI program is designed for U.S. graduate students wishing to conduct research in a foreign setting and to experience the culture(s) of the participating locations. Foreign language capability is not required for acceptance into the EAPSI program, however, applicants are strongly encouraged to obtain language training prior to the Fellowship period.

Selected students attend a 2-3 day pre-departure orientation session in the Washington, D.C. area in late March or early April. The Summer Institutes occur between June and August each year. The Summer Institutes are designed to provide an introduction to the society, culture, language, and research facilities of the host location.

Approximately seven weeks (9 weeks for Japan) are spent on research activities at the host institution. Students work collaboratively with host researchers on projects of mutual interest.

Participants are encouraged to visit other research sites in their host location (Australia, China, Japan, Korea, New Zealand, Singapore or Taiwan) in order to learn about research being conducted in their field and to cultivate additional contacts for future collaboration. Such visits should be scheduled in consultation with host researchers and foreign co-sponsoring organizations, and be planned to occur following the conclusion of the Summer Institutes.

http://www.nsf.gov/pubs/2010/nsf10591/nsf10591.htm?WT.mc_id=USNSF_179

Deadline: November 10, 2010

Environmental Engineering

In broadest terms, the field of Environmental Engineering is concerned with understanding the impacts of human activities on the public health, natural environmental quality, and natural resources and with developing the scientific basis for identifying, analyzing, solving, mitigating, or managing environmental problems caused by human activities.

The Environmental Engineering program supports fundamental research and educational activities across the broad field it serves. The goal of this program is to encourage transformative research which applies scientific principles to minimize solid, liquid, and gaseous discharges into land, inland and coastal waters, and air that result from human activity, and to evaluate adverse impacts of these discharges on human health and environmental quality. The program fosters cutting-edge scientific research based on fundamental science for identifying, evaluating, and developing new methods and technologies for assessing the waste assimilative capacity of the natural environment and for removing or reducing conventional and emerging contaminants from polluted air, water and soils. The program is based on four types of engineering tools - - measurement, analysis, synthesis, and design.

Major areas of interest and activity in the program 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
- Developing and evaluating techniques to clean up polluted sites by preserving and enhancing the self-purification ability or waste assimilative capacity of natural environmental systems, such as landfills and contaminated aquifers; restoring the quality of polluted water, air, and land resources, and rehabilitating degraded ecosystems.

Along with its sibling environmental programs (Energy for Sustainability, Environmental Implications of Emerging Technologies, and Environmental Sustainability), the program fosters environmental sustainability through pollution control and resource management/conservation, and development of techniques to minimize or avoid generating pollution. 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.

Proposals should address the novelty of the concept being proposed, compared to previous work in the field. Also, it is important to address why the novelty might be important in terms of engineering science, as well as to also project the potential impact on society and /or industry of success in the research.

The duration of unsolicited awards is generally one to three years. The average annual award size for the program is $100,000. Small equipment proposals of less than $100,000 will also be considered and may be submitted during these windows.

Proposals for Conferences, Workshops, and Supplements may be submitted at any time, but must be discussed with the program director before submission.

Grants for Rapid Response Research (RAPID) and EArly-concept Grants for Exploratory Research (EAGER) replace the SGER program. Please note that proposals of these types must be discussed with the program director before submission.

Please refer to the Proposal and Award Policies and Procedures Guide (PAPPG), January 2010, (NSF 10-1) when you prepare your proposal. The PAPPG is available for download at:
http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf101

Deadline: August 15, 2010 - September 23, 2010

(This program first appeared in the ORSP June Newsletter.)

Geography and Spatial Sciences

The goals of the NSF Geography and Spatial Sciences (GSS) Program are:

- To promote scientific research in geography and the spatial sciences that advances theory and basic understanding and that addresses the challenges facing society
- To promote the integration of geographers and spatial scientists in interdisciplinary research
- To promote education and training of geographers and spatial scientists in order to enhance the capabilities of current and future generations of researchers
- To promote the development and use of scientific methods and tools for geographic research

The GSS Program sponsors research on the geographic distributions and interactions of human, physical, and biotic systems on the Earth's surface. Investigations are encouraged into the nature, causes, and consequences of human activity and natural environmental processes across a range of scales. Projects on a variety of topics (both domestic and international) qualify for support if they offer promise of contributing to scholarship by enhancing geographical knowledge, concepts, theories, methods, and their application to societal problems and concerns. GSS encourages projects that explicitly integrate undergraduate and graduate education into the overall research agenda.

Proposals submitted for consideration by the GSS Program at NSF tend to be most competetive if the research is grounded in relevant geographical theory, if it focuses on one or a few core questions grounded in the theoretical framework that has been established, if it articulates how scientifically sound methods will be used to explore the validity of answers to the core questions, and if the results are likely to contribute not only specific answers to those specific questions but also to the enhancement of broader geographic and/or spatial scientific theory. The project can draw on and contribute to theory in other fields, too, but to obtain at least some funding from GSS, efforts should be made to enhance fundamental geographic theory, and the investigators should plan to disseminate their results through presentations and publications for geographers and spatial scientists as well as other relevant communities.

GSS frequently engages in joint review of regular research proposals with other NSF programs. Such joint review entails multiple programs coordinating the review of a single project proposal submitted to NSF. Efforts are made to enable such joint review to provide "double opportunity" rather than "double jeopardy" for applicants, because a single program can provide support for proposed work it finds meritorious even if other programs are not as enthusiastic about the proposed work. Investigators who believe that their work might be appropriate for joint review are encouraged to contact program officers for all programs they think might have interest in their work well in advance of proposal-submission target dates or deadlines in order to assess whether joint review may be a viable option and to write their proposal accordingly.

Regular proposals submitted to the GSS Program should be fully compliant with specifications in the *Grant Proposal Guide (GPG).*
http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5410&org=NSF

Deadline: January 15, 2011

(This program first appeared in the ORSP June Newsletter.)

Information and Intelligent Systems: Core Programs

CISE's Division of Information and Intelligent Systems (IIS) supports research and education projects that develop new knowledge in three **core programs:**

1. The Human-Centered Computing program;
2. The Information Integration and Informatics program; and
3. The Robust Intelligence program.

IIS is also responsible for managing the review process for proposals in Computer Graphics and Visualization; these proposals may be submitted to any of the three core programs described above. Proposers are invited to submit proposals in three project classes, which are defined as follows:

- *Small Projects:* up to $500,000 total budget with durations up to three years;
- *Medium Projects* : $500,001 to $1,200,000 total budget with durations up to four years; and
- *Large Projects:* $1,200,001 to $3,000,000 total budget with durations up to five years.

http://www.nsf.gov/pubs/2010/nsf10571/nsf10571.htm?WT.mc_id=USNSF_25&WT.mc_ev=click

Deadlines: ***December 01, 2010 - December 17, 2010 (SMALL Projects)***
September 01, 2010 - September 15, 2010 (MEDIUM Projects)
November 01, 2010 - November 28, 2010 (LARGE Projects)

Instrument Development for Biomedical Applications

The primary intent of this FOA is to stimulate the development of instrumentation for biomedical research that will support achievement of biomedical breakthroughs. Because the R21 Research Strategy Section is limited to six pages, the application does not need to include substantial background material or preliminary data as is expected for an R01 application. High-risk applications are encouraged.

The FOA's purpose is to invite innovative proposals focused on the development of new or improved instrumentation. Development of methodologies and software may be included to the extent that they advance instrument development. Projects should propose tools that can be used by a wide range of biomedical or clinical researchers. Projects that are focused on a specific organ or disease will be withdrawn without review; however, a specific organ or disease may be used as a model system to evaluate the new instrumentation. Since the R21 mechanism is designed to support applications with few or no preliminary findings, investigators with substantial preliminary data should submit under a different mechanism.

Proposals primarily focused in the areas of biomedical imaging, sensors, biomaterials, tissue engineering and rehabilitation engineering will be considered nonresponsive and withdrawn without review. Investigators considering research in the excluded areas should look at the NIBIB (http://www.nibib.nih.gov/FundingMain) web pages for funding opportunities in bioengineering and biomedical imaging research. Questions about the suitability of proposals should be addressed to program staff listed in the "Agency Contacts" section well before submission.

The proposed research may involve conceptualization, design, fabrication, and/or testing of new instruments or devices, including control software. However, proposals with a focus in medical informatics or bioinformatics are excluded. The overall objective of applications for new instruments should be the development of more powerful and more precise technology with broad applicability to biomedical research.

Examples of new tools and techniques that are responsive to this FOA include optical spectroscopy, mass spectrometry, electrophoresis and other separation techniques, microscopy, lasers and optics, X-ray tools, nuclear magnetic resonance spectroscopy, bioreactors, centrifugation, proteomics, genomic sequencing, functional genomics, comparative genomics, microarrays, and human sequence variation (e.g., genotyping). This list is not exhaustive, but investigators with topics outside of these areas are strongly encouraged to contact program staff to ensure that their applications are responsive.
http://grants.nih.gov/grants/guide/rfa-files/RFA-RR-10-009.html
Deadline: October 8, 2010

Presidential Awards Science, Mathematics and Engineering Mentoring

The PAESMEM Program seeks to identify outstanding mentoring efforts that enhance the participation of groups (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.

Approximately 16 awards will be made in each nomination round. These will be distributed over the individuals and organizations as is appropriate in a given round. The PI is the nominee and only one nomination per individual or program will be considered. An individual may wish to make a self nomination. This is allowable; no Co-PI is necessary. There is no limit on the number of submissions by an organization. Multiple programs or individuals from one institution may be nominated in a year; however a program or individual can be nominated only one time.
http://www.nsf.gov/pubs/2010/nsf10520/nsf10520.htm?WT.mc_id=USNSF_25
Deadlines: October 6, 2010

(This program first appeared in the ORSP January Newsletter.)

Research Experiences for Undergraduates

The Research Experiences for Undergraduates (REU) program supports active research participation by undergraduate students in any of the areas of research funded by NSF. REU projects involve students in meaningful ways in ongoing research programs or in research projects specifically designed for the REU program. This solicitation features two mechanisms for support of student research:

(1) *REU Sites* are based on independent proposals to initiate and conduct projects that engage a number of students in research. REU Sites may be based in a single discipline or academic department, or on interdisciplinary or multidepartment research opportunities with a coherent intellectual theme. Proposals with an international dimension are welcome. A partnership with the Department of Defense supports REU Sites in DoD-relevant research areas.

(2) *REU Supplements* may be requested for ongoing NSF-funded research projects or may be included as a component of proposals for new or renewal NSF grants or cooperative agreements.

Undergraduate student participants in either Sites or Supplements must be citizens or permanent residents of the United States or its possessions.
http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5517&from=fund
Deadline: August 25, 2010

(This program first appeared in the ORSP April Newsletter

Research Experiences for Teachers in Engineering

The NSF Directorate for Engineering (ENG), Research Experiences for Teachers (RET) in Engineering program supports the active involvement of K-12 teachers and community college faculty in engineering research in order to bring knowledge of engineering and technological innovation into their classrooms. The goal is to help build long-term collaborative partnerships between K-12 science, technology, engineering, and mathematics (STEM) teachers, community college faculty, and the NSF university research community by involving the teachers in engineering research and helping them translate their research experiences and new knowledge of engineering into classroom activities. Partnerships with inner city schools or other high need schools are especially encouraged, as is participation by underrepresented minorities, women, and persons with disabilities.

This announcement features two mechanisms for support of in-service and pre-service K-12 teachers and/or community college faculty: RET Supplements to ongoing ENG awards and new RET Site awards.

RET Supplements may be included in proposals for new or renewed NSF Directorate for Engineering (ENG) grants or as supplements to ongoing NSF ENG funded projects. RET supplements are limited to a maximum of $10,000 per teacher for a duration of one year subject to the availability of funds.

An RET Site project is an independent proposal, submitted at an annual deadline date, to provide groups of in-service and pre-service K-12 teachers and if desired, community college faculty with discovery-based learning experiences in engineering laboratories and facilities, which will then be incorporated into their classroom activities during the school year. An RET Site project may be conducted during the summer, academic year, or both, and must have a well-defined focus, with clearly articulated projects and activities for teachers or community college faculty. An RET Site proposal must be submitted by a College, School, or Department of Engineering and must involve teachers and/or community college faculty in an engineering research project for a duration of at least six weeks. The RET program encourages PIs to involve teachers in international research experiences in their proposals.

This is a limited submission proposal. Please send an e-mail outlining your intentions to Tom Roberts in ORSP, troberts@fgcu.edu. If multiple faculty desire to submit proposals, an internal review will be scheduled.

http://apps.research.ufl.edu/research/fyi/article.cfm?id=22222

Deadline: November 15, 2010.

Research and Evaluation on Education in Science and Engineering

The Research and Evaluation on Education in Science and Engineering (REESE) program seeks to advance research at the frontiers of STEM learning, education, and evaluation, and to provide the foundational knowledge necessary to improve STEM teaching and learning at all educational levels and in all settings. This solicitation calls for four types of proposals—Pathways, Synthesis, Empirical Research, and Large Empirical Research.

The goals of the REESE program are: (1) to catalyze discovery and innovation at the frontiers of STEM learning, education, and evaluation; (2) to stimulate the field to produce high quality and robust research results through the progress of theory, method, and human resources; and (3) to coordinate and transform advances in education, learning research, and evaluation.

The REESE program challenges scholarly communities to put forward groundbreaking ideas, concepts, theories, and measurement and methodological approaches that focus on one or more

of the following topical strands. These strands do not constitute an exhaustive or mutually exclusive set of priorities or possibilities.

REESE Research Strands:

1. *National STEM education policies.* REESE encourages STEM education related policy research that seeks to understand the ways organizations and whole systems respond to laws, regulations, and other interventions across various levels (e.g., international, national, state, district, school, or university and college). Policy studies may address such entities as K-12 school systems, informal educational organizations, institutions of higher education (including minority serving institutions), community organizations, and the general public.
2. *STEM learning in formal and informal settings.* REESE seeks to expand and improve upon novel, fundamental, and transformative research and theory about how people learn in and across STEM disciplines and in applied learning contexts with the intent that these contributions will serve as the knowledge precursors necessary for the development and enactment of future educational improvements. Such research may address characteristics of students, instructors, administrators, parents, students, policymakers, or others. REESE welcomes proposals that explore: (1) the interrelationships among teaching, learning, and assessment such as learning progressions that create new models for STEM learning across grade levels; (2) affective dimensions of learning, such as what motivates and sustains learner interest in STEM and what fosters engagement and persistence; (3) informal contexts and contexts that blur the boundary between formal and informal, such as early-childhood learning and parent-child interactions, home schooling, out-of-school programs, programs that broaden participation and diversity, programs for at-risk students, technical training programs, alternative organizational designs for education and learning, and emergent virtual learning structures and environments; (4) learning contexts such as small and large group environments, socio-economics, culture, language, politics, and geography; and (5) the effectiveness of different instructional strategies in particular organizational and social situations (e.g., peer tutoring, inquiry-based, laboratory experiences, and cooperative). REESE encourages research proposals that explore these areas in concert and at multiple organizational or systems levels. Note that informal STEM education research projects that place greater emphasis on practice should be submitted to the Informal Science Education (ISE) Program.
3. *Cyberlearning and learning technologies.* REESE encourages proposals that test claims that cyberlearning and the use of learning technologies promote different and improved ways of learning STEM content or allow for the learning of STEM content that would not otherwise be possible. Cyberlearning can be defined as learning that is mediated by networked computing and communications technologies (NSF Task Force on Cyberlearning, 2008). Learning technologies are the array of computer-based tools and systems are that designed to improve learning and other outcomes of interest (e.g., visualization and simulation technologies, games, cognitive tutors, mobile technological devices). REESE welcomes proposals about cyberlearning and educational technology that focus on topics such as: (1) the types of STEM content that are most effectively learned in such environments, whether individually or collaboratively; (2) how best to represent, make accessible, and deliver content; (3) how best to support teaching using learning technologies and environments; (4) how to determine the validity of technology enhanced approaches

to learning and instruction; and (5) how to use cyberlearning and educational technology to enhance interest in and positive attitudes toward STEM topics and careers.

4. *Methods, models, and measures for research and evaluation.* The REESE program is committed to advancing the state of the art in STEM education research and evaluation by supporting projects to improve or develop new qualitative and quantitative methods, analytic tools, models, and measures related to STEM education and learning. This may include the development of novel methods, the expansion or refinement of existing methods and measures, or the transfer and application of methods and models from other disciplines (e.g., anthropology, computer and information science, economics, engineering, and epidemiology). REESE supports: (1) development and application of innovative methods and analytic techniques including novel approaches to cause, explanation, and prediction; the integration and reduction of data; new means of data collection and analysis; cross-method verification (e.g., triangulation); narrative and text analysis; and ways of dealing with multiple levels of data and units of analysis; (2) the development, testing, refinement, and application of qualitative, statistical, mathematical, and conceptual models, including hierarchical or structural, value-added, qualitative inductive, Bayesian, hazard or survival, propensity score matching, and machine learning or agent-based models; and (3) the theoretical and empirical development and psychometric testing of measures and instruments as applied to STEM education and learning research, such as the assessment of cognitive (e.g., knowledge, ability, performance), behavioral, and affecttive (e.g., attitude, engagement) outcomes at the individual, program, organization, or systems levels.
5. *Cognitive underpinnings of STEM learning.* REESE encourages proposals about the cognitive processes underlying the learning and teaching of STEM content. This research should produce knowledge about the nature of STEM learning, teaching, and thinking that has important implications for research and development efforts, as assumptions about cognitive processes are implicit, and often explicit, in a range of STEM instructional materials (e.g., curricula, standards, and museum exhibit design), teaching practices, and assessments in both formal and informal contexts. REESE invites proposals that address a range of cognitive questions central to STEM learning such as: (1) how the initial, transitional, and target knowledge states of the learners ought best to be characterized; (2) what the developmental course of such learning is and how it can be enhanced; (3) what the component concepts are that learners must know in order to understand more complex STEM concepts and how can that understanding be measured; (4) why some concepts are easy to learn or intuitive while others are difficult to learn or counterintuitive and prone to alternative interpretation or misconception, (5) what individual or group differences have valid implications for STEM learning (e.g., culturally-relevant curricula or assessment); and (6) how multi-media and representations of knowledge can affect a diverse set of learners. REESE encourages proposals that focus on executive functioning, reasoning, conceptual representation, attention, memory, problem-solving, language, categorization, and statistical learning in these and related STEM learning topics.
6. *Neural bases of STEM learning.* In order to gain traction on fundamental questions of mind and body as related to STEM learning, REESE supports innovative combinations of theory, empirical techniques, and levels of analysis from a wide range of disciplines. An important goal of these activities is to identify paths by which multidisciplinary research

anchored in the neural and physiological bases of human learning has the potential to inform practice. REESE encourages projects that have implications - even if indirect and in the long-term - for such topics as: (1) how one might begin to derive principles for the development STEM instructional materials and practices based on what we know of relatively fixed constraints on neural systems; (2) whether aspects of executive functioning are relatively less constrained and how they might be manipulated by structured interventions or experiences to optimize STEM learning; (3) how advances in our understandings of neural and physiological systems can support or undermine claims made at another level of analysis (e.g., the computational or behavioral) about the nature of STEM learning and its developmental course; (4) what we know about the aging brain (including not only the very young or adolescent, but also the middle and old aged brain) and what are its implications for STEM learning or for expert decision-making and problem solving; and (5) what implications cognitive neuroscientific studies have for educational measurement and the assessment of individual differences and for claims about the range of intellectual abilities that might be involved in STEM expertise.

http://www.nsf.gov/pubs/2010/nsf10586/nsf10586.htm?WT.mc_id=USNSF_25&WT.mc_ev=click

Deadline: November 15, 2010

Research to Aid Persons with Disabilities

The Research to Aid Persons with Disabilities program supports research that will lead to the development of new technologies, devices, or software for persons with disabilities. Research may be supported that is directed to the characterization, restoration, and/or substitution of human functional ability or cognition, or to the interaction of persons with disabilities and their environment. Areas of particular recent interest are disability-related research in neuroscience/ neuroengineering and rehabilitation robotics. Emphasis is placed on significant advancement of fundamental engineering and scientific knowledge and not on incremental improvements. Proposals should advance discovery or innovation beyond the frontiers of current knowledge in disability-related research. Applicants are encouraged to contact the Program Director prior to submitting a proposal.

Undergraduate Engineering Design Projects are also supported, especially those that provide prototype "custom-designed" devices or software for persons with disabilities. The education of undergraduate engineering students is enhanced through Undergraduate Engineering Design Projects' awards supported by the RAPD program. Characteristics of undergraduate engineering design projects to aid persons with disabilities include:

- The primary goal of this activity is to provide a meaningful design experience for the engineering student that will directly aid a specific individual with a disability. Undergraduate student engineers or engineering technology students develop prototype "custom-designed" devices and software in this regard.
- The PI and the students work with institutions providing care or education for individuals with disabilities.
- The proposal must include a short description of ten possible design projects. These projects should be suitable for an undergraduate student, or a small team of students, to complete in about one year. The proposal should include a letter of support from an appropriate administrator of an institution providing care or education to individuals with disabilities. The letter should certify that the institution and the university will work cooperatively on the design projects.

- The PI provides an annual report that includes a description of the successfully completed design projects during the previous academic year. Each PI is expected to implement a high percentage of projects each year. It is also expected that the projects will contain appropriate levels of quantitative engineering analysis.

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=501021&org=NSF&sel_org=NSF&from=fund

Deadlines: August 15, 2010 - September 23, 2010

(This program first appeared in the ORSP June Newsletter.)

Research Networks in the Mathematical Sciences

The Research Networks in the Mathematical Sciences (RNMS) Program creates an award mechanism that supports researchers in ways that are intermediate in scale, scope, and duration to existing individual investigator awards and research institute awards. The RNMS Program recognizes that, over the past quarter century, mathematical research has become increasingly collaborative and interactive, because effectively overcoming core scientific challenges frequently requires the sharing of ideas and expertise. A Research Network is not a substitute for existing funding mechanisms. In particular, it is intended to complement (rather than replace) individual investigator awards by providing additional layers of interaction. Through the involvement of postdoctoral researchers and students and the promotion of international collaborations, the RNMS will not only focus on problems at the frontier of the mathematical sciences but also lead to robust and diverse training of the next generation of mathematicians and statisticians.

A Research Network will address scientific challenges that appear to be of lasting and significant importance, described against the backdrop of current national and international scientific activity. It should (a) configure the aggregate assets of the nodes to have broader range, greater capacity, and higher impact than can be achieved by any subset of nodes; (b) achieve scientific productivity that exceeds that of the nodes considered in isolation; and (c) create unique education and training opportunities for junior personnel, present unique growth and retraining opportunities for senior personnel, and provide unique opportunities for the involvement of active researchers who enjoy little or no federal support. It is important to note that RNMS funding is not intended to replace or supplement research support at any node. Instead, the focus is on the interactions between nodes. The fundamental question that a successful RNMS proposal will have to address is the following: How will collaborative efforts within the network provide outcomes beyond what individual participants, or subsets of them, could achieve without the network or, stated differently, how will the network as a whole be greater than the sum of its parts?

Each Research Network proposal must:

- describe the participating community of researchers and the research agenda that unites them
- identify three hubs and as many additional nodes as deemed appropriate for the network's mission, and describe the edges (i.e., describe the modes of interaction between the different nodes)
- indicate the potential scientific impact of the network's activity on the mathematical sciences and on other fields of science, technology, and engineering, as appropriate
- include a detailed and comprehensive management plan that describes how the network will achieve its objectives of being dynamic, modular, educational, and inclusive

A successful Research Network should lead to potentially transformative outcomes by enabling the creation of new ideas, novel collaborations, and unique interactions leading to discoveries that would be difficult or impossible to achieve under existing funding mechanisms. Its

effects should significantly enhance the productivity and impact of its component parts. In addition, it should empower participating researchers to "think big" by allowing them to increase the scope and range of scientific questions they address, widen the variety of possible collaborations, and leverage complementary funding sources. However, a Research Network should not be looked at as a substitute for a collection of individual research grants. Finally, a Research Network should not be so large that effective management of it could present serious problems.
http://www.nsf.gov/pubs/2010/nsf10584/nsf10584.htm?WT.mc_id=USNSF_25&WT.mc_ev=click
Deadline: November 09, 2010

STEM Talent Expansion Program

The Science, Technology, Engineering, and Mathematics Talent Expansion Program seeks to increase the number of students receiving associate or baccalaureate degrees in established or emerging fields within science, technology, engineering, and mathematics. Type 1 proposals provide for full implementation efforts at academic institutions. Type 2 proposals support educational research projects on associate or baccalaureate degree attainment in STEM.

Program activities under the STEP Type 1 competition should be efforts aimed at adapting and implementing best practices that will lead to an increase in the number of students (US citizens or permanent residents) obtaining STEM degrees at institutions with baccalaureate degree programs; or completing associate degrees in STEM fields or completing credits toward transfer to a baccalaureate degree program in STEM fields at community colleges. The goal of the project must be to increase the total graduation numbers of such students at the institution(s), and all STEP proposals must include specific numerical targets for these increases. If a project focuses efforts on only a subset of STEM fields, increases in those fields must not be at the expense of degrees in other STEM fields. Projects may focus on the retention and/or recruitment of undergraduate students into STEM fields. Outreach efforts are appropriate only if the efforts can be expected to result in additional STEM majors and graduates at the submitting institution(s) within the grant period.

For projects that are considering outreach to high school students, such activities are only appropriate if they will recruit students to the proposing institution(s) and if the high school students will be entering and progressing through undergraduate STEM majors within the five-year period of the proposed project. In most cases, this requires that outreach and recruitment efforts be limited to juniors and seniors in high schools that have a history of sending their graduates to the proposing institution(s).
http://www.nsf.gov/pubs/2008/nsf08569/nsf08569.htm
Deadline: September 28, 2010

(This program first appeared in the ORSP March Newsletter.)

Transforming Undergraduate Education in STEM

The NSF Transforming Undergraduate Education in Science, Technology, Engineering, and Mathematics program seeks to improve the quality of science, technology, engineering, and mathematics education for all undergraduate students. This solicitation especially encourages projects that have the potential to transform undergraduate STEM education, for example, by bringing about widespread adoption of classroom practices that embody under-standing of how students learn most effectively. Thus transferability and dissemination are critical aspects for projects developing instructional materials and methods and should be considered throughout the project's lifetime. More advanced projects should involve efforts to facilitate adaptation at other sites.

The program supports efforts to create, adapt, and disseminate new learning materials and teaching strategies to reflect advances both in STEM disciplines and in what is known about teaching and learning. It funds projects that develop faculty expertise, implement educational innovations, assess learning and evaluate innovations, prepare K-12 teachers, or conduct research on STEM teaching and learning. It also supports projects that further the work of the program itself, for example, synthesis and dissemination of findings across the program. The program supports projects representing different stages of development, ranging from small, exploratory investigations to large, comprehensive projects.

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5741&org=NSF

Deadline: January 14, 2011 (Type 2 & 3 proposals, Central Resource Project proposals)
Deadline: May 26, 2011 (Type 1 proposals).

(This program first appeared in the ORSP June Newsletter.)

Wendy Schmidt Oil Cleanup X CHALLENGE

The X PRIZE Foundation (www.xprize.org) is an educational nonprofit organization whose mission is to create radical breakthroughs for the benefit of humanity thereby inspiring the formation of new industries, jobs, and the revitalization of markets, which currently have barriers to success. Today, the X PRIZE Foundation is widely recognized as the leader in fostering innovation through open competition.

- In 2004, the X PRIZE Foundation awarded the $10M purse for the successful flight of SpaceShipOne, which flew twice into space during a two week period.
- In September 2010, the Foundation will be awarding the $10M Progressive Insurance Automotive X PRIZE.
- Current incentivized competitions include: the Progressive Insurance Automotive X PRIZE; the Archon Genomics X PRIZE; the Google Lunar X PRIZE; and the Wendy Schmidt Oil Cleanup X CHALLENGE.

Teams from around the world are invited to register for this competition. In the registration process, teams will submit their approach to clean up oil spills from land drainage and waste disposal, offshore drilling and production spills (e.g. Deepwater Horizon), and surface oil from ships or tankers (e.g. Exxon Valdez). X PRIZE will be finalizing the details over the next 30 days, and will post final rules in September. We encourage you to pre-register as a team and we will keep you informed of any changes and when the detailed rules are posted.

Phase I: From August 2010 – April 2011, teams from around the world are invited to register for this competition, and submit their approach. An expert panel of judges from industry and academia will evaluate team proposals using a weighted score based on the following criteria: technical approach and commercialization plan; minimal negative environmental impact; scalability of and ability to deploy technology; cost and human labor of implementation; and improvement of technology over today's baseline "booms and skimmers."

Phase II: The judges will select the top teams to demonstrate their ability to efficiently and rapidly clean up oil on the ocean surface in a head-to-head competition. These demonstrations, which will determine the winner, will take place at the National Oil Spill Response Research & Renewable Energy Test Facility (OHSMETT) in New Jersey, USA.

Winners: The team that demonstrates the ability to recover oil on the seawater surface at the highest oil recovery rate (ORR) and highest recovery efficiency (RE) will win. The top performer will receive a $1 Million Grand Prize; the second place performer will receive $300,000 and the third place performer will receive $100,000.

Competition Goals are to:

1. Inspire entrepreneurs, engineers, and scientists worldwide to develop innovative, rapidly deployable, and highly efficient methods of capturing crude oil from the ocean surface;
2. Provide a global platform where new technologies can compete head-to-head;
3. Demonstrate, recognize, and showcase the best approaches and prepare for future catastrophies; and
4. Attract a balanced set of entrepreneurs, donors, sponsors, and partners to help competitors succeed.

http://iprizecleanoceans.org/Page/MediaCenter

Women in Academic Science and Engineering Careers

The goal of the *ADVANCE Increasing the Participation and Advancement of Women in Academic Science and Engineering Careers* program is to develop systemic approaches to increase the representation and advancement of women in academic science, technology, engineering and mathematics (STEM) careers, thereby contributing to the development of a more diverse science and engineering workforce. ADVANCE focuses on ensuring that women faculty with earned STEM degrees consider academia as a viable and attractive career option. This program does not support projects to increase or retain the number of women entering into or persisting in STEM doctoral degree programs. Thus, efforts to impact the STEM pipeline are not considered appropriate for the ADVANCE Program.

Creative strategies to realize the ADVANCE program goal are sought from women and men. Members of underrepresented minority groups and individuals with disabilities are especially encouraged to apply. Proposals that address the participation and advancement of academic STEM women from underrepresented minority groups and women with disabilities are particularly encouraged. Further, given the increasing emphasis on international collaborations in many STEM disciplines, and the importance of international recognition to career advancement, proposal components that systemically enhance and provide access to international collaborations are encouraged.

Proposals from community colleges, primarily undergraduate institutions, minority-serving institutions (e.g. Tribal Colleges and Universities, Historically Black Colleges and Universities, Hispanic-Serving Institutions, Native Hawaiian Serving Institutions and Tribal Colleges and Universities), women's colleges, and institutions primarily serving persons with disabilities are encouraged. In 2011-2012, this program will support the following types of ADVANCE Projects:

Institutional Transformation (IT) awards are expected to include innovative systemic organizational approaches to transform institutions of higher education in ways that will increase the participation and advancement of women in STEM academic careers. These awards support comprehensive programs for institution-wide change. IT projects must include a 5-page research component designed to study the effectiveness of the proposed innovations in order to contribute to the knowledge base informing academic institutional transformation. Previous or current funding from ADVANCE is not a prerequisite for submitting an IT proposal. *Any* institution meeting the minimum eligibility may apply for an IT award. Proposals for IT awards from community colleges, primarily undergraduate institutions, minority-serving institutions (e.g. Tribal Colleges and Universities, Historically Black Colleges and Universities, Hispanic-Serving Institutions, Native Hawaiian Serving Institutions), women's colleges, and institutions primarily serving persons with disabilities are strongly encouraged. It is anticipated that there may be significant differences in the issues facing faculty in these institutions, compared to faculty in other types of

institutions that will warrant development of unique strategies and/or adaptation of proven strategies in a unique way to achieve ADVANCE Program goals.

Institutional Transformation Catalyst (IT-Catalyst) awards are designed to support historically resource-challenged institutions in efforts to conduct institutional self-assessment activities, such as data collection and analysis and policy review, in order to identify specific issues in the recruitment, retention and promotion of women faculty in STEM academics within an institution of higher education. This type of work is fundamental for institutions that plan to undertake institutional transformation.

http://www.nsf.gov/pubs/2010/nsf10593/nsf10593.htm?WT.mc_id=USNSF_25&WT.mc_ev=click

Deadlines: October 04, 2010 (required Letter of Intent)
November 08, 2010 (full proposal)

Youth STEM Education

The American Honda Foundation helps meet the needs of American society in the areas of youth and scientific education by awarding grants to nonprofits, while strategically assisting communities in deriving long-term benefits. The American Honda Foundation engages in grant making that reflects the basic tenets, beliefs and philosophies of Honda companies, which are characterized by the following qualities: imaginative, creative, youthful, forward-thinking, scientific, humanistic and innovative. We support youth education with a specific focus on the STEM (science, technology, engineering and mathematics) subjects in addition to the environment. When considering the American Honda Foundation as a potential funding source, please note the following:

Funding Priority: Youth education, specifically in the areas of science, technology, engineering, mathematics, the environment, job training and literacy.

Organizations may only submit **one** request in a 12-month period. This includes colleges and universities with several departments/outreach programs. The grant range is $20K to $60K over a one-year period. Please send an e-mail outlining your intentions to Tom Roberts in ORSP, troberts@fgcu.edu. If multiple faculty desire to submit proposals, an internal review will be scheduled.

http://corporate.honda.com/america/philanthropy.aspx?id=ahf

Deadline: November 1, 2010

FELLOWSHIPS

Fellowships for Creative and Performing Artists and Writers

The American Antiquarian Society is calling for applications for visiting fellowships for historical research by creative and performing artists, writers, film makers, journalists, and other persons whose goals are to produce imaginative, non-formulaic works dealing with pre-twentieth-century American history. Successful applicants are those whose work is for the general public rather than for academic or educational audiences. The goal is to multiply and improve the ways in which an understanding of history is communicated to the American people. Fellowship projects may include (but are not limited to):

- historical novels
- performance of historical music/drama
- poetry
- documentary films
- television programs
- radio broadcasts
- plays/libretti/screenplays
- magazine/newspaper articles
- costume/set designs
- illustrations/ ther graphic arts
- book designs
- sculpture
- paintings

- other works of fine/applied art
- nonfiction works of history designed for general audiences of adults or children

The fellowships will provide the opportunity for a period of uninterrupted research, reading, and collegial discussion at the Society in Worcester, MA. At least 3 fellowships will be awarded for residence of 4 weeks at any time during the period January l through December 31. The stipend will be $1,350 for fellows residing on campus (rent-free) in the Society's scholars' housing, located next to the main library building or $1,850 for fellows residing off campus.
http://www.americanantiquarian.org/artistfellowship.htm
Deadline: October 5, 2010

NSF Ocean Bottom Seismic Instrument Pools Management Office

The academic community is addressing science questions as described, for example, in the 1996 Future of Marine Geology and Geophysics (FUMAGES) report, that require short- and long-term deployments of large numbers of ocean-bottom seismometers and/or ocean-bottom hydrophones. In addition to supporting research funded through the NSF Division of Ocean Sciences (OCE) Marine Geology & Geophysics Core Program, there is increasing use of ocean bottom seismometers by the EarthScope, Continental Dynamics, Ocean Drilling Program, Ridge2000, and MARGINS Programs. To provide the large number of instruments needed to support these programs, maintain the necessary technical capability, and provide access to Ocean-Bottom Seismic Instruments for a broad user community, the Ocean-Bottom Seismic Instrument Pools (OBSIP) were established in 1999. In light of the continuing demand for ocean bottom seismometers, the Marine Geology and Geophysics Program of OCE invites proposals to establish a Management Office for OBSIP.

The OBSIP Management Office (OMO) will serve as the interface between NSF/OCE, Institutional Instrument Contributors (IICs), and the OBS user community. It is anticipated that proposals will include a complete work breakdown structure aimed at accomplishing the following tasks and oversight responsibilities. At a minimum the OMO will:

- Provide a mechanism for monitoring OBSIP IICs;
- Subcontract IICs for OBSIP services to the broader community;
- Provide oversight and manage funding of IICs;
- Provide a mechanism for timely feedback by the user community regarding OBSIP performance;
- Establish an Oversight Committee to assess the OBSIP and OMO operations;
- Manage deployments and deployment schedules in cooperation with NSF/University-National Oceanographic Laboratory System (UNOLS);
- At technical level, work with IICs to ensure high and consistent data quality
- Maintain an OBSIP website to inform the community about OBSIP services and instruments and OBS deployment schedules and availability;
- Ensure that OBS data are entered into the Incorporated Research Institutions for Seismology (IRIS) Data Management System in a timely fashion;
- Provide a quarterly Activity Report and an annual progress report to NSF; and
- Submit an annual program plan to NSF with budgets for support of the management office and baseline operations of the approved IICs.

http://www.nsf.gov/pubs/2010/nsf10570/nsf10570.htm?WT.mc_id=USNSF_25&WT.mc_ev=click
Deadline: December 01, 2010