



Office of Research and Sponsored Programs

Newsletter, January, 2009

ANNOUNCEMENTS.....	3
ORSP HAS MOVED TO HOLMES ENGINEERING	3
GRANTS.GOV SUBMISSION GUIDELINES	3
ORSP WEBSITE.....	3
HAVE YOU COMPLETED YOUR GENIUS/SMARTS PROFILE IN INFO ED?	3
ORSP PROGRAM: STUDENT TRAVEL AWARDS	3
ORSP PROGRAM: FACULTY TRAVEL AWARDS	3
DO YOU NEED HELP WITH PROPOSAL PREPARATION?	4
CALL FOR ECOLOGY AND EVOLUTION ABSTRACTS	4
CONGRATULATION\$.....	5
AWARDS DURING THE LAST MONTH	5
SUBMISSIONS DURING THE LAST MONTH	6
FUNDING OPPORTUNITIE\$.....	7
ARTS AND HUMANITIES.....	7
GRANTS FOR ARTS PROJECTS	7
BIOLOGY.....	8
MICROBIAL GENOME SEQUENCING PROGRAM	8
EDUCATION.....	9
FOUNDATIONS FOR LEARNING GRANTS	9
WOMEN'S EDUCATIONAL EQUITY	9
TEACHING AMERICAN HISTORY	9
ENGINEERING AND TECHNOLOGY.....	10
ENVIRONMENTAL IMPLICATIONS OF EMERGING TECHNOLOGIES	10
TECHNOLOGY INNOVATION PROGRAM.....	11
YOUNG FACULTY AWARD.....	12
ENVIRONMENTAL ENGINEERING	12
ENVIRONMENTAL SUSTAINABILITY.....	13
ENERGY FOR SUSTAINABILITY	14
BIOTECHNOLOGY, BIOCHEMICAL, AND BIOMASS ENGINEERING	15
CRIMINAL JUSTICE.....	16
FORENSIC SCIENCE TRAINING DEVELOPMENT AND DELIVERY	16
ELECTRONIC CRIME AND DIGITAL EVIDENCE RECOVERY	16
HOMELAND SECURITY SCIENCE CAREER DEVELOPMENT GRANTS	17
ENVIRONMENTAL PROGRAMS.....	17
GULF OF MEXICO CALL FOR PRE-PROPOSALS	17
BIOTECHNOLOGY RISK ASSESSMENT RESEARCH GRANTS PROGRAM	18
NOAA BAY WATERSHED EDUCATION AND TRAINING PROGRAM	20
ENVIRONMENTAL REMEDIATION SCIENCE PROGRAM	20
NATIONAL OCEANOGRAPHIC PARTNERSHIP PROGRAM	21
AVAILABILITY OF NOAA GRANT FUNDS FOR FISCAL YEAR 2009.....	21

INTERNATIONAL RESEARCH	23
CHINA PROGRAMS	23
MATHEMATICAL AND PHYSICAL SCIENCES	24
CHEMICAL AND BIOLOGICAL SEPARATIONS	24

ANNOUNCEMENTS

ORSP HAS MOVED TO HOLMES ENGINEERING

The Office of Research and Sponsored Programs has moved to the new Holmes Engineering (HE) building. Please come visit us at our new location in HE, Suite 112.

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. The Grants.gov icon is shown next to this month's Funding Announcements that require this submission process. If you wish to apply for a grant through grants.gov, contact Beth Rieger at brieger@fgcu.edu.

ORSP WEBSITE

ORSP offers a multitude of services to assist you in preparing and submitting grant applications. Our website at <http://www.fgcu.edu/orsp> provides easy access to the forms, announcements, and other useful materials. 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.

HAVE YOU COMPLETED YOUR GENIUS/SMARTS PROFILE IN INFO ED?

In order to process your proposals, ORSP needs a GENIUS/SMARTS investigator profile in our web-based database system. To edit a Genius profile, use an on-campus computer and go to <http://fgcu-mako.primary.ad.fgcu.edu>. Click on "Login"; then on "Profile"; and proceed to edit the information contained in your profile. Please select keywords that describe your research interests. For further assistance or if you have any questions about these InfoEd products please contact Lucia Soria at asoria@fgcu.edu. If you have a GENIUS/SMARTS profile, you can search InfoEd's SPIN Plus from any on-campus computer to find funding. Call Lucia at ext.7020 to send you instructions.

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 on our web page at: <http://www.fgcu.edu/orsp/internalPrograms.html>

[DO YOU NEED HELP WITH PROPOSAL PREPARATION?](#)

Please contact Beth Rieger at brieger@fgcu.edu to assist you set up your budget and to complete your proposal/application package. ORSP will then enter the budget information into the sponsor's budget form for you and provide you with a copy to help you prepare the budget justification. ORSP needs to receive your completed proposal package three business days (four business days for grants.gov) before the submission deadline. We ensure all the required forms are attached and that your proposal is compliant with the specifications outlined in the RFP/RFA. Remember that additional forms, releases, and agreements may be required, so make sure [you](#) allow enough time for these documents to be prepared. 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.

[CALL FOR ECOLOGY AND EVOLUTION ABSTRACTS](#)

Abstracts for papers and posters are now being accepted for the Southeastern Ecology and Evolution Conference (SEEC), to be held March 27-29, 2009 at the University of Florida in Gainesville. Graduate students, undergraduate students, and postdoctoral researchers are invited to submit an abstract for SEEC. Presenters should be affiliated with a college or university in the southeastern United States, or with a school from outside the region but doing their research in the southeast. Abstracts related to ecology and evolution are welcomed. Topics from previous conferences include behavior, biodiversity, conservation, functional morphology, population ecology, and systematics.

Abstracts should be no more than 250 words, and may be sent to seec2009@gmail.com. Along with your abstract please submit the following:

Name
Institutional affiliation
Status (undergraduate, graduate, or post doc)
Whether the abstract is for a paper or poster presentation
If you would like to volunteer to moderate paper presentations

Abstracts will be reviewed by the SEEC 2009 Program Committee, and presenters will receive notification with further details about the presentations (time, format, etc.). Awards will be given for the best talk and best poster at the conclusion of the conference. Registration information and further details about the conference may be found at our website, <http://snre.ufl.edu/seec>.

Due Date: Friday, January 30, 2009.

CONGRATULATIONS

AWARDS DURING THE LAST MONTH

College of Arts and Sciences			
ALLMAN, Phillip	International Commission for the Conservation of Atlantic Tuna	ATVs for Ghana	\$15,250.00
CEILLEY, David	South Florida Water Management District	Lake Trafford Phase III	\$50,000.00
COX, John	Florida Department of Education	Commissioner's Task Force on Holocaust Education	\$20,000.00
PIRES, Ricky	South Florida Water Management District / Big Cypress Basin	Wings of Hope 2009 (Big Cypress Basin)	\$20,000.00
VOLETY, Aswani	South Florida Water Management District	Oyster Reef Restoration in Estero Bay	\$30,000.00
VOLETY, Aswani	South Florida Water Management District	Salinity and Shellfish Responses	\$30,000.00
College of Business			
JACKSON, Gary	Southwest Florida Regional Planning Council	Regional Incubator Network Study	\$57,000.00
College of Education			
GREENE, Marci	University of South Florida	Center for Autism & Related Disorders 2009	\$24,000.00
HIBBARD, Susan	Southwest Florida Workforce Development	Miracle 2 Project	\$7,000.00
SULLIVAN, Peg	Florida Department of Education	Personnel Development Partnership 08-09	\$60,000.00
College of Health Professions			
KIRSNER, Kenneth	Health Resource & Services Administration	Nurse Anesthetist Training Program	\$276.00
WOLF, Donna	Daved Rosensweet, MD	Laboratory Hormone Optimal Ranges	\$4,973.43
College of Professional Studies			
MCGAHA, Johnny	Lee County Sheriff's Office	LCSO Human Trafficking Project	\$100,440.00
Curriculum Instruction			
SUMMERS, Linda	Corporation for National and Community Service	Charlotte-Collier-Lee VISTA Consortium	\$520,000.00
Student Affairs			
DOYLE, Cathy Yovanovich, Michele	United Way	United Way Scholars Program 2009	\$20,000.00

SUBMISSIONS DURING THE LAST MONTH

College of Arts and Sciences			
MICHAEL, Scott	Ruth L. Kirschstein National Research Service Award	Fusion peptide Inhibitors of Flavivirus and Alphavirus Infectivity	\$56,980.00
CORCORAN, Peter Blaze	Center for Respect of Life and Environment	Center for Respect for Life and Environment Collaboration 2008 - 2009	\$15,271.00
DEMERS, Nora	Charlotte Harbor National Estuary Program	Determining Bio-indicators suitable for assessing restoration success in San Carlos Park Waterbodies	\$12,269.00
DUKE, Donald	National Oceanic and Atmospheric Administration	Uncertainty Analysis for Nutrient Water Quality Targets in Gulf of Mexico Estuarine Waters	\$90,032.00
KELLY, Sean	Florida Coalition Against Human Trafficking	Human Trafficking Awareness	\$15,000.00
McDONALD, Michael Kakareka, Joe Snapp, Annette	Environmental Research and Education Foundation	FGCU Food Waste Behavior Study	\$55,808.00
SAVERESE, Michael Hartley, Anne	National Oceanic and Atmospheric Administration	Evolution of Coastal Landscape Geomorphology and Community Composition in Response to Sea-Level Rise and Anthropogenic Water Management in the Ten Thousand Islands	\$19,898.00
THOMAS, Serge Parsons, Michael Loh, Ai Ning	South Florida Water Management District	Measurements of Primary Production in the Caloosahatchee Estuary	\$87,207.00
TOLLEY, S. Gregory Parsons, Michael Fugate, David	South Florida Water Management District	The Responses of Turbidity, CDOM, Benthic Microalgae, Phytoplankton and Zooplankton to Variation in Seasonal Freshwater Inflow to the Caloosahatchee Estuary 2009 - 2010	\$100,000.00
VOLETY, Aswani Parsons, Michael	National Oceanic and Atmospheric Administration	Impacts of the Red-Tide Organism, <i>Karenia brevis</i> on Reproduction and Potential Recruitment of Bivalve Molluses	\$108,883.00
College of Business			
REGELSKI, Dan	University of West Florida	Small Business Development Center (SBDC) 2008 - 2009	\$303,262.00
RODRIGUEZ, Walter	National Science Foundation	RI: HCC: Medium: RUI: uC: Ubiquitous Collaboration Platform for Multimodal Team Interaction Support	\$92,267.00
College of Education			
GREENE, Marci	Florida Department of Education	Parents Educating Parents (PEP) 2008 - 2009	\$ 90,000.00
AMTS			
JOHNSON, Rick	WETA	National Parks in Person	\$10,000.00

FUNDING OPPORTUNITIES

ARTS AND HUMANITIES

GRANTS FOR ARTS PROJECTS



Through the National Endowment for the Arts Grants for Arts Projects Program, assistance is available to eligible organizations of all sizes for projects in:

- Arts Education
- Dance
- Design
- Folk & Traditional Arts
- Literature
- Local Arts Agencies
- Media Arts: Film/Radio/
Television
- Museums
- Music
- Musical Theater
- Opera
- State and Regional
Theater
- Visual Arts

Within each field or discipline above, organizations may apply through one of the following categories:

Access to Artistic Excellence: To foster and preserve excellence in the arts and provide access to the arts for all Americans. This category supports projects that provide short-term arts exposure or arts appreciation for children and youth as well as intergenerational education projects. An organization may request a grant amount from \$5,000 - \$150,000. **Due Date: March 12 & August 13, 2009**, depending on the type of project. ***An organization may submit only one application through this program. Anyone interested in applying to this program must contact Donna Stremke at dstremke@fgcu.edu in ORSP by February 4, 2009 for internal coordination.***

Challenge America Fast-Track Review Grants: To support primarily small and mid- sized organizations for projects that extend the reach of the arts to underserved populations. Grants are for \$10,000. Funding is not available for curriculum-based instruction in the arts. **Due Date: May 28, 2009.** ***An organization may submit only one application through this program. Anyone interested in applying to this program must contact Donna Stremke at dstremke@fgcu.edu in ORSP by April 1, 2009 for internal coordination.***

Learning in the Arts for Children and Youth: To advance learning in the arts for children and youth. This category supports in-depth, curriculum-based arts education experiences that occur over an extended period. Project must provide participatory learning and engage students with skilled artists, teachers, and excellent art. An organization may request a grant amount from \$5,000 - \$150,000. **Due Date: June 11, 2009.** ***An organization may submit only one application through this program. Anyone interested in applying to this program must contact Donna Stremke at dstremke@fgcu.edu in ORSP by April 1, 2009 for internal coordination.***

<http://arts.endow.gov/grants/apply/index.html>

MICROBIAL GENOME SEQUENCING PROGRAM



This collaborative effort between the U.S. Department of Agriculture and the National Science Foundation invites research proposals (i) to support high-throughput sequencing of the genomes of microorganisms (including plasmids, viruses, bacteria, archaea, fungi, oomycetes, protists, microeukaryotes and agriculturally important nematodes) and the metagenomes of mixed microbial communities and (ii) to develop and implement strategies, tools and technologies to make currently available and novel genome sequences more valuable to the user community.

The availability of genome sequences provides the foundation for understanding how microorganisms function and live, and how they interact with their environments and with other organisms. The sequences are expected to be available to and used by a community of investigators to address issues of scientific and societal importance including:

- Novel aspects of microbial biochemistry, physiology, metabolism, development and cellular biology;
- The diversity and the roles microorganisms play in complex ecosystems and in global geochemical cycles;
- The impact that microorganisms have on the productivity and sustainability of agriculture and natural resources (e.g., forestry, soil and water), and on the safety and quality of the nation's food supply; and
- The organization and evolution of microbial genomes, and the mechanisms of transmission, exchange and reshuffling of genetic information.

This program supports (i) the high-throughput sequencing of the genomes from a wide range of microorganisms (including plasmids, viruses, bacteria, archaea, fungi, oomycetes, protists, microeukaryotes and agriculturally important nematodes) and the metagenomes of mixed microbial communities that are either of fundamental biological interest, are important to the productivity and sustainability of agriculture and forestry, or to the safety and quality of the nation's food supply and (ii) the development and implementation of strategies, tools and technologies to make currently available genome sequences more valuable to the user community. The results will be partial or whole genome sequence data, more extensive and reliable annotation and whole genome mapping or scaffolding information. Proposers are encouraged to incorporate teaching, training, or outreach components within the scope of the project to facilitate the dissemination of knowledge and the education of students and the public.

Proposers should justify organism selection on the basis of biological interest or agricultural importance, as well as community involvement, education and training, and societal impact. Factors to consider include metabolic potential, novel biochemical, structural or developmental features, phylogenetic affiliation, ecological or evolutionary significance, economic importance, and relevance to national security.

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503366&govDel=USNSF_25

Due Date: March 2, 2009

EDUCATION

FOUNDATIONS FOR LEARNING GRANTS



This US Department of Education program provides assistance to eligible children to become ready for school. To be eligible for funding, a project must propose to:

- Deliver services to eligible children and their families that foster eligible children's emotional, behavioral, and social development;
- Coordinate and facilitate access by eligible children and their families to the services available through community resources, including those related to mental health, physical health, substance abuse, education, domestic violence prevention, child welfare, and social services; and
- Develop or enhance early childhood community partnerships and build toward a community system of care that brings together child-serving agencies or organizations to provide individualized supports for eligible children and their families.

<http://www.ed.gov/programs/learningfoundations/applicant.html>

Due Date: February 24, 2009

WOMEN'S EDUCATIONAL EQUITY



This program promotes education equity for women and girls through competitive grants. The program designates most of its funding for local implementation of gender-equity policies and practices. Research, development, and dissemination activities also may be funded. Projects may be funded for up to four years.

Examples of allowable activities include:

- Training for teachers and other school personnel to encourage gender equity in the classroom;
- Evaluating exemplary model programs to advance gender equity;
- School-to-work transition programs;
- Guidance and counseling activities to increase opportunities for women in technologically demanding workplaces; and,
- Developing strategies to assist LEAs in evaluating, disseminating, and replicating gender-equity programs.

<http://www.ed.gov/programs/equity/applicant.html>

Deadline: February 23, 2009

TEACHING AMERICAN HISTORY



The Teaching American History Grant program is a discretionary grant program funded under Title II-C, Subpart 4 of the Elementary and Secondary Education Act. The goal of the program is to support programs that raise student achievement by improving teachers' knowledge, understanding, and appreciation of American history.

The program supports competitive grants to local educational agencies. The purpose of these grants is to promote the teaching of traditional American history in elementary and secondary schools as a separate academic subject. Grants are used to improve the quality of history instruction by supporting professional development for teachers of American history. In order to receive a grant, a local educational agency must agree to carry out the proposed activities in partnership with one or more of the following: institutions of higher education, nonprofit history or humanities organizations, libraries, or museums.

Grant awards will assist local educational agencies (LEAs), in partnership with entities that have extensive content expertise, to design, implement, and demonstrate effective, research-based professional development programs.

By helping teachers to develop a deeper understanding and appreciation of American history as a separate subject matter within the core curriculum, funded programs will improve instruction and raise student achievement.

The goal of this program is to demonstrate how school districts and institutions with expertise in American history can collaborate over a three-year period to ensure that teachers develop the knowledge and skills necessary to teach traditional American history in an exciting and engaging way. Through these projects, districts will demonstrate comprehensive professional development approaches for providing high-quality American history instruction. Students will develop an appreciation for the great ideas of American history.

Deadline for Notice of Intent to Apply: January 22, 2009

<http://www.ed.gov/programs/teachinghistory/applicant.html>

ENGINEERING AND TECHNOLOGY

ENVIRONMENTAL IMPLICATIONS OF EMERGING TECHNOLOGIES

The NSF Environmental Implications of Emerging Technologies program provides support to develop and test the environmental effects of new technologies. Fundamental and basic research is sought to establish and understand outcomes as a result of the implementation of new technologies such as nanotechnology, biotechnology, and information technology. The program also supports research on the development and refinement of sensors and sensor network technologies that can be used to measure a wide variety of physical, chemical, and biological properties of interest in characterizing, monitoring, and understanding environmental impacts.

The program emphasizes engineering principles underlying technology impacts. Innovative production processes, waste reduction, recycling, and industrial ecology technologies are of interest. All of these have implications that would be relevant to this program. Current areas of support include:

- Understanding and mitigating how new developments in nanotechnology, biotechnology, and information technology will interact with the environment.

- Nanotechnology environmental, health, and safety implications and applications,
- Predictive methodology for the interaction of nanoparticles with the environment and with the human body, including predictive approaches for toxicity,
- Fate and transport of natural, engineered, and incidental (by-product) nanoparticles
- Risk assessment and management of the effect of nanomaterials in the environment
- Evaluation of the effect of increased usage of renewable resources on water supply and land use
- Sensor and sensor network technologies as they relate to the measurement of these environmental implications

Deadline: February 1, 2009 - March 1, 2009, and August 15, 2009 - September 15, 2009
http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=501030

TECHNOLOGY INNOVATION PROGRAM

The Technology Innovation Program (TIP) at the National Institute of Standards and Technology within the US Department of Commerce was established for the purpose of assisting U.S. businesses and institutions of higher education or other organizations, such as national laboratories and nonprofit research institutions, to support, promote, and accelerate innovation in the United States through high-risk, high-reward research in areas of Critical National Need. The key concepts, enumerated below, are the foundation of TIP and should form the basis of an effective white paper:

- a. *An area of critical national need* means an area that justifies government attention because the magnitude of the problem is large and the associated societal challenges that need to be overcome are not being addressed, but could be addressed through high-risk, high-reward research.
- b. *A societal challenge* is a problem or issue confronted by society that when not addressed could negatively affect the overall function and quality of life of the Nation, and as such, justifies government action. A societal challenge is associated with barriers preventing the successful development of solutions to the area of critical national need. TIP's mission is to tackle the technical issues that can be addressed through high-risk, high-reward research. The results of the high-risk, high-reward research should have the potential for transformational results.
- c. *A transformational result* is a potential project outcome that enables disruptive changes over and above current methods and strategies. Transformational results have the potential to radically improve our understanding of systems and technologies, challenging the status quo of research approaches and applications.

The white papers are expected to contain: A description of an area of critical national need and the associated societal challenge(s) (what is the problem, why is it a problem, and why is it challenging), why government support is needed, and what could happen if that support is not provided in the proposed timeframe, and a high level discussion of potential technical solutions and an indication of the types of entities or groups who might be interested in developing proposal submissions to fund these solutions. Do not include ideas for specific proposals in the white paper.

White papers must not contain proprietary information. Information contained in these white papers will be considered and combined with information from other resources— including the vision of the Administration, NIST, other government agencies, technical communities, the TIP Advisory Board, and other stakeholders—to select the scope of future competitions and to shape TIP’s collaborative outreach. White papers are a valuable resource that adds to TIP’s understanding of the significance and scope of critical national needs and associated societal challenges. White papers may discuss any critical national need area of interest to the submitter.

Deadlines: January 15, 2009, March 9, 2009, May 11, 2009, and July 13, 2009.

<http://edocket.access.gpo.gov/2008/pdf/E8-29745.pdf>

YOUNG FACULTY AWARD



The DARPA Young Faculty Award (YFA) program will identify and engage rising research stars in junior faculty positions in academia and expose them to Department of Defense (DoD) needs and DARPA's program development process. The YFA program will provide high-impact funding to these rising stars early in their careers in order to develop their research ideas in the context of DoD needs. The long term goal is to develop the next generation of academic scientists, engineers, and mathematicians in key disciplines who will focus a significant portion of their career on DoD and National Security issues. This RA solicits single investigator proposals for research and development in the areas of the Physical Sciences, Engineering and Mathematics of interest to DARPA’s Microsystems Technology Office (MTO) and Defense Sciences Office (DSO) as described in the topic list below. Proposed research should focus on innovations that will enable revolutionary advances in the selected topic area. High-risk/high-payoff ideas are strongly encouraged. Administrative, technical or contractual questions should be sent via e-mail to RA09-14@darpa.mil.

<http://www07.grants.gov/search/search.do;jsessionid=CgVPJmJVhMnPJn0Q0hhp9rs5MGZQgmqLHq92fWpwGw2rcKfqL8wp!1216815379?mode=VIEWREVISIONS&revNum=0>

Due Date: February 16, 2009

ENVIRONMENTAL ENGINEERING



The field of Environmental Engineering is concerned with understanding the impacts of human activities on the natural environment and developing the scientific basis for solving, mitigating, or managing environmental problems caused by human activities. The field emerged as a separate engineering discipline during the middle third of the 20th century, in response to widespread public concern about water and air pollution and increasingly extensive environmental degradation. However, its roots extend back to early efforts in public health engineering in the late 19th century and to ancient times with regard to urban drinking water systems.

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 research based on fundamental science and 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, such as landfills and contaminated aquifers, restore the quality of polluted water, air, and land resources and rehabilitate degraded ecosystems

Along with its sibling environmental programs (Environmental Technology, Environmental Sustainability, and Energy for Sustainability), the program fosters environmental sustainability through the 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.

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=501029

Deadline: February 1, 2009 - March 1, 2009, and August 15, 2009 - September 15, 2009

The submission deadline for Engineering CAREER proposals is in July every year. Please see the following URL for more information: <http://www.nsf.gov/pubs/2005/nsf05027/nsf05027.jsp>

ENVIRONMENTAL SUSTAINABILITY



The Environmental Sustainability program supports engineering research with the goal of promoting sustainable engineered systems that support human well-being and that are also compatible with sustaining natural (environmental) systems. These systems provide ecological services vital for human survival. The long-term viability of natural capital is critical for many areas of human endeavor. Research in Environmental Sustainability considers long time horizons and incorporates contributions from the social sciences and ethics. This program supports engineering research that seeks to balance society's need to provide ecological protection and maintain stable economic conditions. There are four principal general research areas which are supported:

- Industrial Ecology
- Green Engineering
- Ecological Engineering
- Earth Systems Engineering

Topics of interest in Industrial Ecology include advancements in modeling such as life cycle assessment, materials flow analysis, input/output economic models, and novel metrics for measuring sustainable systems. Understanding materials flow and taking advantage of such

understanding to substitute less toxic, longer lived materials are important areas for consideration. The effects of substituted materials on waste streams can be explored. Innovations in industrial ecology are encouraged. Engineering tools for estimating costs and ramifications of sustainable development must be developed, tested, and evaluated.

In Green Engineering, research is encouraged to advance the sustainability of chemical processes, manufacturing processes, green building, and infrastructure. Many programs in the Engineering Directorate support research in environmentally benign manufacturing or chemical processes. The Environmental Sustainability program supports research that would affect more than one chemical or manufacturing process or that takes a systems or holistic approach to green engineering for infrastructure or green building. Of particular interest is the next generation of water and wastewater treatment that will dramatically decrease material and energy use, consider new paradigms for delivery of services, and promote longer life for engineered systems. Improvements in distribution and collection systems that will advance smart growth strategies and ameliorate effects of growth are research areas that are supported by Environmental Sustainability. Innovations in prevention and management of storm water, wastewater technology, indoor air quality, recycling and reuse of drinking water, and other green engineering techniques to support sustainable construction projects may also be fruitful areas for research.

Ecological Engineering topics should focus on the engineering aspects of restoring ecological function to natural systems. Engineering research in enhancement of natural capital to foster sustainable development is encouraged. Many communities are involved in stream restoration, revitalization of urban rivers, and rehabilitation of wetlands that require engineering input. What is the fundamental engineering knowledge that is necessary for ecological engineering to function sustainability?

Earth Systems Engineering considers aspects of large scale engineering research that involve mitigation of greenhouse gas emissions, adaptation to climate change, and other global scale concerns.

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=501027

Deadline: February 1, 2009 - March 1, 2009, and August 15, 2009 - September 15, 2009

ENERGY FOR SUSTAINABILITY



This program supports fundamental research and education in energy production, conversion, and storage and is focused on energy sources that are environmentally friendly and renewable. Most world energy needs are currently met through the combustion of fossil fuels. With projected increases in global energy needs, more sustainable methods for energy production will need to be developed, and production of greenhouse gases will need to be reduced. Sources of sustainable energy include sunlight, wind, and biomass.

Hydrogen and alcohols are potential energy carriers that can be derived from renewable sources. Research that generates enabling science and technologies for more efficient hydrogen generation and storage is supported by the program. Potential sources of hydrogen include

conversion from biomass and from electrolysis, photolysis or thermolysis of water. Biomass is available from agricultural crop residues, forest products, aquatic plants, and municipal wastes. In addition to hydrogen, biomass can be a source of liquid, solid, and gaseous fuels including biofuels such as ethanol.

Fuel cells have the potential to convert fuels such as hydrogen and alcohols to electricity at high efficiencies and should play an increasing role in energy conversion. Critical components of fuel cells requiring additional research include catalysts and electrolytes. Development of these components also requires fundamental research on the reaction and transport mechanisms at the catalyst and membrane electrolyte interface. Advances in these areas are needed to address key challenges in efficiency, durability, power density, and environmental impacts. The engineering aspects of fuel-cell design and operation also require further study in areas such as water and thermal management.

Wind power is a growing source of electrical energy. Increased efficiency requires a fundamental knowledge of the interaction of wind with the blade structure. Understanding the fluid flow, and optimizing blade design are important aspects in developing more efficient wind generators. Photovoltaic devices have the potential to supply a significant fraction of electrical energy to the power grid. Although silicon-based materials have been most widely used, other semiconducting materials and titanium dioxide also have potential. New materials and novel fabrication techniques for solar energy conversion are supported by the program.

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=501026

Deadline: February 1, 2009 - March 1, 2009, and August 15, 2009 - September 15, 2009

BIOTECHNOLOGY, BIOCHEMICAL, AND BIOMASS ENGINEERING



The BBBE program deals with fundamental problems involved in the processing and manufacturing of products of economic importance by effectively utilizing renewable resources of biological origin and bioinformatics originating from genomic and proteomic information.

This program emphasizes basic engineering and biological research that advances the fundamental knowledge base that contributes to a better understanding of cellular and biomolecular processes (in vivo, in vitro, and/or ex vivo) and eventually to the development of generic enabling technology and practical application.

Quantitative assessments of bioprocesses and their rates at the levels of gene regulation and expression, signal transduction pathways, posttranslational protein processing, enzymes in reaction systems, metabolic pathways, cells and tissues in cultivation, and biological systems including animal, plant, microbial and insect cells, etc. are considered vital to the successful research projects in the BBBE program.

Research projects supported through the BBBE program include, but are not limited to:

- Fermentation technology
- Enzyme technology
- Recombinant DNA technology
- Cell culture technology
- Ex vivo and therapeutic stem cell culture technology

- Metabolic engineering
- Tissue engineering
- Nanobiotechnology
- Quantitative systems biotechnology
- Biosensor development
- Food processing with special focus on the safety of the nation's food supply

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=501024

Deadlines: February 1, 2009 - March 1, 2009, and August 15, 2009 - September 15, 2009

CRIMINAL JUSTICE

FORENSIC SCIENCE TRAINING DEVELOPMENT AND DELIVERY



The National Institute of Justice provides objective, independent, evidence-based knowledge and tools to enhance the administration of justice and public safety. NIJ solicits applications to inform its search for the knowledge and tools to guide policy and practice.

The forensic science community has a critical need for trained forensic scientists in public crime laboratories. Additionally, there is a need to inform other criminal justice practitioners and policymakers on developments in forensic science. To that end, NIJ seeks applications from training provider(s), and other relevant entities, to develop and/or deliver knowledge-based forensic science curricula at the State and/or local level to train forensic scientists and to inform other criminal justice practitioners and policymakers.

Applicants are encouraged to propose enhancements or modifications to existing training programs for computer-based or Web-based delivery. Dissemination of the product and sustainability of these initiatives is a priority. Applicants that propose to deliver training will be responsible for all aspects of the training delivery, including, but not limited to, travel, lodging, and per diem for participants, and any other training-related logistics. The project period for proposals submitted under this solicitation is up to 24 months.

<http://www.ncjrs.gov/pdffiles1/nij/sl000855.pdf>

Deadline: January 26, 2009

ELECTRONIC CRIME AND DIGITAL EVIDENCE RECOVERY

NIJ is seeking applications for funding to research, develop, and demonstrate emerging digital evidence recovery technology solutions for law enforcement agencies. Specific areas of interest include Cell Phone Forensics Tools, Digital Evidence Forensic Examination Tools, and Computer Crime Investigative Tools.

<http://www.ncjrs.gov/pdffiles1/nij/sl000858.pdf>

Deadline: January 26, 2009

HOMELAND SECURITY SCIENCE CAREER DEVELOPMENT GRANTS

The Department of Homeland Security, Science and Technology Directorate, Office of University Programs announces the third annual competition for the Homeland Security Science Technology Engineering and Mathematics (HS-STEM) Career Development Grants (CDG). The CDG program enables colleges and universities with existing or proposed programs in homeland security-related science, technology, engineering or mathematics to award undergraduate scholarships and/or graduate fellowships to qualified students who intend to pursue homeland security scientific and engineering careers. This award requires a commitment from students to engage in one year of professional employment at a DHS-approved scientific or engineering venue as a condition of receiving the grant. DHS requires sponsored students to participate in HS-STEM research or studies in one of these 16 areas:

- Explosives Detection, Mitigation and Response;
- Social, Behavioral, and Economic Sciences;
- Risk and Decision Sciences;
- Human Factors Aspects of Technology;
- Chemical Threats and Countermeasures;
- Biological Threats and Countermeasures;
- Food and Agriculture Security;
- Transportation Security;
- Border Security;
- Immigration Studies;
- Maritime and Port Security;
- Infrastructure Protection;
- Natural Disasters and Related Geophysical Studies;
- Emergency Preparedness and Response;
- Communications and Interoperability;
- Advanced Data Analysis and Visualization.

An individual institution can receive a maximum of \$200,000 for four year colleges to fund multiple scholarships for two years and maximum of \$500,000 for graduate fellowships to fund multiple scholarships for three years.

Each institution may submit only ONE application per department. Institutions may submit applications from multiple departments, however, only one grant will be awarded per institution, and only for research and support for students, in one of the HS-STEM areas listed above. Those interested in this program should contact Donna Stremke in ORSP by **February 4, 2009 if an application will be submitted.**

<http://www07.grants.gov/search/search.do?&mode=VIEW&flag2006=false&oppId=44394>

Due Date: February 28, 2009.

ENVIRONMENTAL PROGRAMS

GULF OF MEXICO CALL FOR PRE-PROPOSALS

Florida Sea Grant is pleased to announce a request for pre-proposals that address natural-hazard and climate-change resiliency in coastal communities located within states that border the Gulf of Mexico (GOM).

Projects will be funded within the following six regional priorities:

- Develop and/or evaluate the effectiveness of innovative approaches to increase public understanding of risks associated with coastal hazards and sea level rise and to encourage adaptive behaviors.
- Develop new technologies, construction products, planning tools and guidelines, and/or model policies that can be used by local governments to increase resiliency to coastal hazards and sea level rise.
- Determine the socioeconomic costs and benefits of implementing different adaptation and resilience actions for GOM communities and states.
- Predict socioeconomic impacts of climate and sea level change on population dynamics, community infrastructure, short- and long-term community demographic shifts, social capital, and commerce centers for county and community planners and local governments.
- Design updated real-time storm surge models and products that include meteorological, land use and land cover, and improved boundary data to better predict impacts from storms at a scale that is relevant for local and regional decision-making.
- Determine linkages between human actions (e.g., physical alterations to coasts, groundwater depletion) and natural systems that can either increase or compromise ecological integrity and community resiliency to storm events and climate change.

This initiative encourages interdisciplinary projects and requires collaboration between investigators from at least two Gulf of Mexico states (Texas, Louisiana, Mississippi, Alabama, and Florida). Collaboration with faculty from Mexican universities is also encouraged. Successful proposals must have a strong constituent engagement component. Projects may be funded for up to \$200K per year over a two year period and require a non-federal dollar match (hard dollar or in-kind). A full description of how to apply for this funding, funding stipulations, and the proposal submittal and review process can be found at:

www.flseagrant.org/funding/GOM/index.htm.

Due Date: (Pre-proposals) February 23, 2009.

BIOTECHNOLOGY RISK ASSESSMENT RESEARCH GRANTS PROGRAM

The purpose of the BRAG program is to assist Federal regulatory agencies in making science-based decisions about the effects of introducing into the environment genetically engineered organisms, including plants, microorganisms (including fungi, bacteria, and viruses), arthropods, fish, birds, mammals and other animals excluding humans. Investigations of effects on both managed and natural environments are relevant. The BRAG program accomplishes its purpose by providing Federal regulatory agencies with scientific information relevant to regulatory considerations derived from the risk assessment research that the program funds.

The BRAG program supports risk assessment research, which is defined as the science-based evaluation and interpretation of factual information in which a given hazard, if any, is identified, and the consequences associated with the hazard are explored. Research funded through this program will be relevant to risk assessment and the regulatory process. When evaluating transgenic organisms, Federal regulators must answer the following four (4) general questions:

- Is there a hazard (potential hazard identification)?
- How likely is the hazard to occur (quantifying the probability of occurrence; identifying likely exposure scenarios)?
- What is the severity and extent of the hazard if it occurs (quantifying the effects)?; and
- Is there an effect above and beyond what might occur with an unmodified organism or an

The BRAG program will also support risk management research, which is defined to include either: (1) research aimed primarily at reducing effects of specific biotechnology-derived agents; or (2) a policy and decision-making process that uses risk assessment data in deciding how to avoid or mitigate the consequences identified in a risk assessment.

Although Project Directors (PDs) are not required to perform actual risk assessments as part of the research they propose, they should design studies that will provide information useful to regulators for making science-based decisions in their assessments of genetically engineered organisms. Accordingly, applicants are encouraged to address the following questions in their applications

- What is the relevance of this research to the evaluation of transgenic organisms?
- What information will be provided by this research to help regulators adequately assess transgenic organisms?; and
- How does this research provide information or methods or model exposures useful in identifying and/or characterizing hazards associated with introducing genetically engineered organisms into the environment?

Applications to the BRAG program must address one of the following program areas or seek partial funding for a conference that addresses science-based risk assessment or risk management of genetically engineered organisms released into the environment (See Part I, C. for more detailed descriptions):

- Research designed to identify and develop appropriate management practices to minimize physical and biological risks to the environment associated with genetically engineered animals, plants, and microorganisms;
- Research designed to develop methods to monitor the dispersal of genetically engineered animals, plants, and microorganisms;
- Research designed to further existing knowledge with respect to the characteristics, rates, and methods of gene transfer that may occur between genetically engineered animals, plants, and microorganisms, and related wild and agricultural organisms;
- Environmental assessment research designed to provide analysis which compares the relative impacts of animals, plants, and microorganisms modified through genetic engineering to other types of production systems; and
- Other areas of research designed to further the purposes of the BRAG program.

http://www.csrees.usda.gov/funding/rfas/biotech_risk.html

Deadline: January 30, 2009

NOAA BAY WATERSHED EDUCATION AND TRAINING PROGRAM

NOAA B–WET is an environmental education program that promotes locally relevant, experiential learning in the K–12 environment. Funded projects provide meaningful watershed educational experiences for students, related professional development for teachers, and helps to support regional education and environmental priorities in the Pacific Northwest, the northern Gulf of Mexico and New England.

In FY09, it is anticipated that funds will be available for each of these three regions. Proposals are currently being solicited from the Pacific Northwest region, the northern Gulf of Mexico region, and the New England region. For the purposes of this solicitation, these three regions are defined as follows:

- Pacific Northwest—the states of Oregon and Washington;
- Northern Gulf of Mexico—the states of Florida, Alabama, Mississippi, Louisiana, and Texas;
- New England—the states of Maine, New Hampshire, Vermont, Massachusetts, Rhode Island and Connecticut.

<http://edocket.access.gpo.gov/2008/pdf/E8-29797.pdf>

Deadline: January 26, 2009

ENVIRONMENTAL REMEDIATION SCIENCE PROGRAM

The Office of Science (SC), U.S. Department of Energy (DOE), hereby announces interest in receiving applications for research grants in the Environmental Remediation Sciences Program (ERSP), which is within the Climate and Environmental Sciences Division (CESD) in the Office of Biological and Environmental Research (BER). The ERSP seeks to advance fundamental science to understand, predict and mitigate the impacts of environmental contamination from past nuclear weapons production and provide a scientific basis for the long term stewardship of nuclear waste disposal. The program supports an integrated portfolio of research ranging from molecular to field scales with emphasis on the use of advanced computer models and multidisciplinary, iterative experimentation to understand and predict contaminant transport in complex subsurface environments.

This mission is guided by the BER long term performance measure to “provide sufficient scientific understanding such that DOE sites would be able to incorporate coupled physical, chemical and biological processes into decision making for environmental remediation and long-term stewardship.” To meet this measure, BER funds basic research to investigate the key processes affecting the mobility of subsurface contaminants found at DOE sites.

The goal of this solicitation is to support innovative, fundamental research to investigate the coupled physical, chemical, and biological processes affecting the transport of subsurface contaminants commonly found at DOE sites. Applications should identify critical knowledge gaps and address hypothesis-driven research to better understand the significant physical,

chemical, and biological processes influencing the form and mobility of specific inorganic contaminants in the subsurface. Research projects should aim to provide the scientific basis for the long term stewardship of contaminated sites across the DOE complex and the development of new remediation concepts and strategies. Applications must include an explanation of how the proposed research supports the BER long term performance measure. The environment of interest is the terrestrial subsurface including the vadose zone, the saturated zone and key groundwater-surface water interfaces. The proposed research is expected to contribute to the public good by advancing the fundamental science associated with the cycling and transport of inorganic elements in the subsurface, and that benefit will be expressed through contributions to the technical literature. Listed below are the specific radionuclide and heavy metal Contaminants of Concern for this Funding Opportunity Announcement (FOA) and an outline of the general science needs of the ERSP. Phytoremediation and the study of organic contaminants are NOT addressed in this FOA.

<https://e-center.doe.gov/iips/faopor.nsf/UNID/921DE91BABAB68A985257529004CF6A0?OpenDocument>

Deadline: April 9, 2009

NATIONAL OCEANOGRAPHIC PARTNERSHIP PROGRAM

The National Oceanographic Partnership Program, the President's Interagency Committee on Ocean Science and Resource Management Integration, and the Office of Naval Research solicit research proposals meeting the goal and purpose of the Partnership Program outlined in Title II, subtitle E, of Public Law 104-201. Any NOPP member agency may fund research in response to this solicitation. Up to \$21.5 Million over four years may be available for this solicitation.

Team efforts are required among at least two of the following three sectors: academia, industry (including Non-Governmental Organizations - NGOs), and government (including State and Local).

Deadline: February 11, 2009

<http://www.onr.navy.mil/02/baa/docs/ONRBAA09-012.pdf>

AVAILABILITY OF NOAA GRANT FUNDS FOR FISCAL YEAR 2009

Protect, Restore and Manage the Use of Coastal and Ocean Resources Through Ecosystem-Based Management. Funded proposals should help achieve the following outcomes:

1. Healthy and productive coastal and marine ecosystems that benefit society.
2. A well-informed public that acts as a steward of coastal and marine ecosystems.

Programs:

1. Dr. Nancy Foster Scholarship Program. **Deadline: March 31, 2009.**
2. Coral Reef NGO Partnership. **Deadline: February 27, 2009.**
3. Proactive Species Conservation Program. **Deadline: February 12, 2009.**
4. FY09 Hawaii Seafood Program. **Deadline: February 13, 2009.**
5. FY09 Bay Watershed Education and Training Program, Adult and Community Watershed Education in the Monterey Bay. **Deadline: February 27, 2009.**

6. 2010 Herring Research Set-Aside (RSA). **Deadline: February 17, 2009.**
7. 2010 Mid-Atlantic Research Set-Aside (RSA). **Deadline: March 3, 2009.**
8. Coastal and Estuarine Land Conservation Program—FY 2010 Competition. **Deadline: March 31, 2009.**
9. Pacific Coastal Salmon Recovery Fund. **Deadline: February 17, 2009.**
10. New Bedford Harbor Restoration Projects (IV). **Deadline: February 17, 2009.**

Understand Climate Variability and Change To Enhance Society's Ability To Plan and Respond. Funded proposals should help achieve the following outcomes:

1. A predictive understanding of the global climate system on time scales of weeks to decades with quantified uncertainties sufficient or making informed and reasoned decisions.
2. Climate-sensitive sectors and the climate-literate public effectively incorporating NOAA's climate products into their plans and decisions.

Programs:

1. Coral Reef NGO Partnership. **Deadline: February 27, 2009.**
2. Proactive Species Conservation Program. **Deadline: February 12, 2009.**
3. Hydrologic Research. **Deadline: March 3, 2009.**

Serve Society's Needs for Weather and Water Information. Funded proposals should help achieve the following outcomes:

- Reduced loss of life, injury, and damage to the economy.
- Better, quicker, and more valuable weather and water information to support improved decisions.
- Increased customer satisfaction with weather and water information and services.

Programs:

1. Remote Community Alert Systems Program 2009. **Deadline: March 27, 2009.**
2. Hydrologic Research. **Deadline: March 3, 2009.**

Provide Critical Support for NOAA's Mission. Funded proposals should help achieve the following outcome: A dynamic workforce with competencies that support NOAA's mission today and in the future.

Program: Environmental Literacy Grants: Science on a Sphere Network Capacity Building. **Deadline: February 19, 2009.**

<http://edocket.access.gpo.gov/2009/pdf/E8-30851.pdf>

Application packages are available on grants.gov.

INTERNATIONAL RESEARCH

CHINA PROGRAMS

The Bureau of Democracy, Human Rights, and Labor (DRL) announces a Request for Statements of Interest (SOI) from organizations interested in submitting proposals for projects that support the following program areas in China under the “Governing Justly and Democratically” Foreign Assistance program objective: Rule of Law and Human Rights, Political Competition/Consensus Building, and Civil Society. This solicitation does not constitute a formal Request for Proposals: DRL will invite select organizations that submit SOIs to expand on their ideas via full proposal at a later date.

DRL invites organizations to submit statements of interest outlining program concepts and capacity to manage projects that will: foster democracy, human rights, transparency, freedom of information and expression, religious freedom, minority rights, judicial independence, criminal and civil rule of law, civil society, freedom of the press, electoral reform, public participation, labor rights, and media reform in the People's Republic of China, Hong Kong and Taiwan. DRL will consider funding for project components that address the long-term developmental and capacity building needs of indigenous non-governmental entities working in these thematic areas. The Bureau will also consider funding for projects that foster the development of a healthy charitable sector, including the reform or establishment of underlying systems and institutions. Projects providing assistance for administrative litigation will also be considered.

To support direct and indirect costs required for implementation, the Bureau anticipates making awards in amounts of \$300,000 - \$1,500,000 for human rights, rule of law, and civil society programs. SOIs that request less than the award floor or more than the award ceiling will be deemed technically ineligible.

The bulk of project activities must take place in the requested country and last between 1 and 3 years. U.S.-based activities, study tours, scholarships or exchange projects will not be deemed competitive. Projects that have a strong academic, research, conference, or dialogue focus will not be deemed competitive. DRL strongly discourages health, technology, or scientific projects unless they have an explicit component related to the requested program objectives listed above. Projects that focus on commercial law or economic development will also not be rated as competitive.

*An organization may submit no more than two (2) SOIs of two pages each. Those interested in applying should send an SOI (addressing the criteria outlined in the RFA) to Donna Stremke in ORSP by **January 21, 2009**. If more than two SOIs are received, an internal selection process may be necessary.*

The SOIs are due to the agency by February 9, 2009.

<http://www.state.gov/g/drl/p/113275.htm>

MATHEMATICAL AND PHYSICAL SCIENCES

CHEMICAL AND BIOLOGICAL SEPARATIONS

The **Chemical and Biological Separations** (CBS) program supports fundamental research on novel methods and materials for separation processes. These processes are central to the chemical, biochemical, materials, energy, and pharmaceutical industries. A fundamental understanding of the interfacial, transport, and thermodynamic behavior of multiphase chemical systems as well as quantitative descriptions of processing characteristics in the process-oriented industries is critical for efficient resource management and effective environmental protection. The program encourages proposals that address emerging research areas and technologies, have a high degree of interdisciplinary thought coupled with knowledge creation, and integrate education and research.

Areas of emphasis include separation of biological molecules and separations that lead to environmentally benign processing. Much of the current work involves the investigation of new membrane materials such as novel polymers, zeolites, mixed matrix materials, carbon nanotubes, biological and biomimetic materials, and glasses. Projects on modeling transport processes, especially at the molecular level, in membranes are supported by the program. For the hydrogen economy, membranes that selectively transport atomic, molecular, or ionic hydrogen and oxygen are required. Current membrane materials often lack sufficient selectivity to eliminate critical contaminants from the hydrogen stream. Membrane materials to prevent fuel crossover in fuel cells are also being sought. Adsorption on materials ranging from hydrogels to micas is being studied. New processes for drinking water purification rely on the development of new materials for membranes and adsorbents, which are supported by CBS.

Research topics in CBS include fundamental molecular-level work on:

- Biochemical separations and purification processes
- Microporous and novel molecular-recognition adsorbents
- Self-assembly in the synthesis of adsorbents and membranes
- Nanostructured materials for separations
- Fuel-cell membranes
- Biomimetic materials for separations
- Chiral separations
- Separations for environmentally benign processing
- Novel polymeric and ceramic membranes
- Hybrid separation processes
- Control and separation of organic crystalline materials
- Separations using ionic liquids
- Purification of drinking water
- Membranes for ion-selective sensors
- Adsorption and chromatography
- Field (flow, magnetic, electrical) induced separations.
- Separation of molecular constituents from blood
- Thermodynamics and transport simulations for the design of separation processes
- Combinatorial design of separation systems
- Rational ligand design for separations

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13363

Deadline: February 1, 2009 - March 1, 2009 and August 15, 2009 - September 15, 2009