

National Science Foundation (NSF) Funding Opportunities -- September 26, 2008

If you have a question regarding a program solicitation, please contact a Division of Chemistry Program Officer or the solicitation's Cognizant Program Officer(s). A list of the Program Officers for the Division of Chemistry is available at http://www.nsf.gov/staff/staff_list.jsp?org=CHE&from_org=CHE. Names and contact information of Cognizant Program Officers are included within the program solicitation.

- 1) Interagency Opportunities in Metabolic Engineering Program Solicitation: NSF 08-588
- 2) Science of Science and Innovation Policy (SciSIP), FY 2009 Program Solicitation: NSF 08-586
- 3) Developing Global Scientists and Engineers (International Research Experiences for Students (IRES) and Doctoral Dissertation Enhancement Projects (DDEP)) Program Solicitation: NSF 04-036
- 4) Pan-American Advanced Studies Institutes Program (PASI) Program Solicitation: NSF 03-506

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1) Interagency Opportunities in Metabolic Engineering

Program Solicitation: NSF 08-588

Web site: http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf08588

Full Proposal Deadline(s) (due by 5 p.m. proposer's local time): October 22, 2008

This solicitation describes a collaborative effort among the Department of Agriculture, Department of Commerce, Department of Defense, Department of Energy, Environmental Protection Agency, National Aeronautics and Space Administration, National Institute of General Medical Sciences (National Institutes of Health), and the National Science Foundation. The intent of this interagency solicitation is to provide an opportunity for an interagency granting activity in the area of metabolic engineering (ME). The eight participating agencies or departments are providing research funding and agency in-kind support such as equipment, laboratory space, personnel time, and materials in support of this solicitation. Upon conclusion of the review process, meritorious proposals may be recommended for funding by a participating agency or department. Each participating agency will make its own awards and the subsequent grant administration procedures will be in accordance with the individual policies of the awarding agency or department.

Proposals are invited that address conceptual and technical approaches that further the development and utilization of metabolic engineering. Four areas are of particular interest:

- Instrumentation, sensors, new analytical tools, and new experimental methods that facilitate the study of metabolic pathways, especially those technologies that allow the examination of individual cells.
- Quantitative and conceptual approaches (e.g. metabolic flux analysis) integrated with experimental studies that better characterize the regulation and integration of complex, interacting metabolic pathways.
- The use of bioinformatics to deduce the structure, function, and regulation of major metabolic pathways.
- The engineering of metabolic pathways to produce novel and/or important substances or otherwise address novel problems in understanding or manipulating such pathways.

This listing is not meant to be all-inclusive, and other areas of research that could contribute to an expanded understanding of metabolic processes and/or a substantial broadening of their utilization, would be welcomed.

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2) Science of Science and Innovation Policy (SciSIP) FY 2009

Program Solicitation: NSF 08-586

Web site: http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf08586

Full Proposal Deadline(s) (due by 5 p.m. proposer's local time): December 16, 2008; December 16, Annually Thereafter

The Directorate for Social, Behavioral and Economic Sciences (SBE) at the National Science Foundation (NSF) aims to foster the development of the knowledge, theories, data, tools, and human capital needed to cultivate a new Science of Science and Innovation Policy (SciSIP). The SciSIP program underwrites fundamental research that creates new explanatory models, analytic tools and datasets designed to inform the nation's public and private sectors about the processes through which investments in science and engineering (S&E) research are transformed into social and economic outcomes. SciSIP's goals are to understand the contexts, structures and processes of S&E research, to evaluate reliably the tangible and intangible returns from investments in research and development (R&D), and to predict the likely returns from future R&D investments within tolerable margins of error and with attention to the full spectrum of potential consequences.

Specifically, the research, data collection and community development components of SciSIP's activities will:

- develop usable knowledge and theories of creative processes and their transformation into social and economic outcomes;
- develop, improve and expand models and analytical tools that can be applied in the science policy decision making process;
- improve and expand science metrics, datasets and analytical tools; and
- develop a community of experts across academic institutions and disciplines focused on SciSIP.

The FY 2009 competition includes three emphasis areas: Analytical Tools, Model Building, and Data Development and Augmentation. The emergent body of research will develop and utilize techniques for retrospective and prospective analyses. In addition, research will provide insight into factors that propagate new ideas at levels from the molecular functioning of the human brain to the organizational, state, national and international levels as well as advances the analysis and visualization of datasets describing complex social relationships and networks.

In addition to these three emphasis areas, the FY 2009 competition particularly encourages the submission of proposals that demonstrate the viability of collecting and analyzing data on knowledge generation and innovation in organizations. In addition to providing innovative and scientifically based ways of describing and analyzing knowledge generation and innovation in organizations, these demonstration projects should address three specific aspects of the data collection approach:

- scalability and sustainability;
- protection of the confidentiality of respondents in computerized, widely accessible databases; and
- evaluation and assessment of the project's progress towards its scientific goals

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3) Developing Global Scientists and Engineers (International Research Experiences for Students (IRES) and Doctoral Dissertation Enhancement Projects (DDEP))

Program Solicitation: NSF 04-036

Web site: http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf04036

Full Proposal Target Date(s): September 15, annually

International Research Experiences for Students (IRES) for activities beginning at least six months after the target date February 15, annually.

International Research Experiences for Students (IRES) for activities beginning at least six months after the target date.

Doctoral Dissertation Enhancement Project (DDEP) proposals may be submitted at any time.

The United States needs to educate a globally-engaged science and engineering workforce capable of performing in an international research environment in order to remain at the forefront of world science and technology. To support this aim, the Developing Global Scientists and Engineers program provides highest quality international research experiences for U.S. students. Whereas the International Research Experiences for Students component of

the program supports groups of U.S. undergraduate or graduate students conducting research abroad in collaboration with foreign investigators, the Doctoral Dissertation Enhancement Projects component supports the dissertation research abroad of one doctoral student in collaboration with a foreign investigator.

In addition to the activities described in this solicitation, the Office of International Science and Engineering (OISE) supports other targeted international research and education experiences for early-career scientists and engineers via the Research Experience for Undergraduates program, the East Asia and Pacific Summer Institutes for U.S. Graduate Students, the Pan-American Advanced Studies Institutes (for advanced graduate students and post-doctoral fellows), and the International Research Fellowship Program (for post-doctoral fellows or new faculty).

For a summary of all OISE supported activities, including other programs that contribute to development of a cadre of global scientists and engineers, check the OISE homepage, http://www.nsf.gov/staff/staff_list.jsp?org=OISE&from_org=OISE.

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4) Pan-American Advanced Studies Institutes Program (PASI)

Program Solicitation: NSF 03-506

Web site: http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf03506

Full Proposal Deadline(s) (due by 5 p.m. proposer's local time): January 15, 2008; January 15, Annually Thereafter

The Department of Energy and the NSF support a limited number of Pan American Advanced Studies Institutes (PASI) modeled on the NATO Advanced Studies Institutes. Pan American Advanced Studies Institutes are short courses of ten days to four weeks duration, at the advanced graduate and post-doctoral level. The courses should involve distinguished lecturers and active researchers in the field, preferably from the Americas. PASIs aim to disseminate advanced scientific knowledge and stimulate training and cooperation among researchers of the Americas in the mathematical, physical, and biological sciences, and in engineering fields. Whenever feasible, an interdisciplinary approach is recommended.

The principal investigator should be assisted by a small Organizing Committee consisting of three to four lecturers from at least two other countries of the Americas and, if appropriate, from different research sectors. A local scientist or engineer from the host country should be a member of the Organizing Committee. Brief professional background summaries and descriptions of the role to be played by each member of the Organizing Committee should be provided. The rationale for the choice of topics and location must be clearly spelled out. Proposals that are of an applied nature, and especially where relevance to industry is claimed, should include a noted industrial scientist or engineer in the Organizing Committee.