Ecology of Infectious Diseases (EID)

Program Solicitation

NSF 06-506
***Replaces Document* NSF 03-507**

National Science Foundation
Directorate for Biological Sciences
Directorate for Geosciences

National Institutes of Health
John E. Fogarty International Center

Full Proposal Deadline(s) (due by 5 p.m. submitter's local time):

February 10, 2006

REVISIONS AND UPDATES

This revision of NSF 03-507 includes three changes: (1) Removes National Institute of General Medical Sciences (NIGMS) from the list of participating Institutes at NIH. (2) Increases the maximum award size. (3) Updates the contact list.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

Ecology of Infectious Diseases (EID)

Synopsis of Program:

The Ecology of Infectious Diseases program solicitation supports the development of predictive models and discovery of principles for relationships between anthropogenic environmental change and transmission of infectious agents. To that end, research should focus on understanding the ecological determinants of transmission by vectors or abiotic agents, the population dynamics of reservoir species, and transmission to humans or other hosts. Proposals may focus on either terrestrial, freshwater, or marine systems and organisms. Proposals that focus on disease systems of public health concern to developing countries are strongly encouraged. Proposals are encouraged to include links to the public health research community, including epidemiologists, medical entomologists, virologists, and parasitologists.

Cognizant Program Officer(s):

- Samuel M. Scheiner, Program Director, Directorate for Biological Sciences, Division of Environmental Biology, 635 N, telephone: (703) 292-8481, fax: (703) 292-9064, email: sscheine@nsf.gov

- Fredric Lipschultz, Associate Program Director, Directorate for Geosciences, Division of Ocean Sciences, 725 N, telephone: (703) 292-8582, fax: (703) 292-9085, email: flipschu@nsf.gov
- Michael L. Mishkind, Program Director, Directorate for Biological Sciences, Division of Molecular & Cellular Biosciences, 655 S, telephone: (703) 292-7190, fax: (703) 292-9061, email: mmishkin@nsf.gov

Applicable Catalog of Federal Domestic Assistance (CFDA) Number(s):

- 47.074 --- Biological Sciences
- 47.050 --- Geosciences

Eligibility Information

- **Organization Limit:** None Specified.
- **PI Eligibility Limit:** None Specified.
- **Limit on Number of Proposals:** None Specified.

Award Information

- **Anticipated Type of Award:** Standard or Continuing Grant
- **Estimated Number of Awards:** 7
- **Anticipated Funding Amount:** $8,000,000 in FY 2006, pending the availability of funds. That amount includes approximately $6.5M from NSF and approximately $1.5M from NIH for new awards in FY 2006.

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

- **Full Proposal Preparation Instructions:** This solicitation contains information that supplements the standard Grant Proposal Guide (GPG) proposal preparation guidelines. Please see the full text of this solicitation for further information.

B. Budgetary Information

- **Cost Sharing Requirements:** Cost Sharing is not required by NSF.
- **Indirect Cost (F&A) Limitations:** Not Applicable.
- **Other Budgetary Limitations:** Not Applicable.

C. Due Dates

- **Full Proposal Deadline Date(s)** (due by 5 p.m. submitter's local time):
  February 10, 2006

Proposal Review Information

- **Merit Review Criteria:** National Science Board approved criteria. Additional merit review considerations apply. Please see the full text of this solicitation for further information.

Award Administration Information

- **Award Conditions:** Standard NSF award conditions apply.
- **Reporting Requirements:** Standard NSF reporting requirements apply.

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I. INTRODUCTION

Over the past twenty years unprecedented rates of change in diversity of non-human biota have coincided with the emergence and reemergence of numerous infectious diseases around the world. Virtually all of the world's terrestrial and aquatic communities and ecosystems have undergone dramatic changes in biodiversity and biocomplexity due primarily to habitat transformation (deforestation, reforestation, agricultural intensification, fragmentation), invasions of exotic species, chemical contamination, and climate change events. The coincidence of broad scale environmental changes and emergence of infectious diseases may point to underlying predictable ecological relationships.

For example, habitat fragmentation may reduce populations of mammalian predators of animals that are natural reservoirs of disease agents, resulting in increased transmission to humans. Similarly, runoff from urban and rural sewage systems may carry pathogens that proliferate in shellfish and fish and eventually infect humans via consumption as food. While a descriptive understanding of some cases exists, there is little mechanistic understanding of basic ecological principles that may regulate such complex systems.

The role of biological diversity and habitat structure in stabilizing communities of plants, animals and micro-organisms has received a great deal of attention from ecologists in recent years. As a result, our capacity to analyze and model biocomplexity and ecological dynamics, and to evaluate spatial and temporal aspects of environmental change has become increasingly sophisticated. However, few of these advances in ecological science have yet contributed to biomedical research or to public health.

Similarly, we have improved our ability to define the molecular identity and dynamics of pathogens or infectious agents and their vectors, and our understanding of the defense systems of their hosts. We also understand the importance of genetic systems and evolutionary dynamics of infectious diseases. These improvements have contributed significantly to our understanding of epidemiology and transmission patterns of diseases. However, the relationship of these factors to population dynamics of disease reservoirs or the biotic and structural complexity of ecological systems in which transmission occurs remains a poorly understood area. There has also been insufficient attention given to integrating the ecological and evolutionary dynamics of these systems.

At present, basic and applied research in infectious disease ecology is largely piecemeal. The potential benefits of an interdisciplinary research program in this area include: development of disease transmission theory, improved understanding of unintended health effects of development projects, increased capacity to forecast outbreaks, and improved understanding of how diseases (re)emerge.

This activity is a continuation of the previous joint National Science Foundation/National Institutes of Health (NSF/NIH) Ecology of Infectious Disease competition. Information on past awards can be found at http://www.nsf.gov/bio/pubs/awards/eid.htm.

II. PROGRAM DESCRIPTION

The goal of the Ecology of Infectious Diseases (EID) activity is to encourage development of predictive models and discovery of general principles for relationships between anthropogenic environmental change and the transmission and evolution of infectious agents. To that end, research should focus on understanding the ecological determinants of transmission by vectors or abiotic agents, the population and evolutionary dynamics of reservoir species, and transmission to humans or other hosts. These anthropogenic environmental changes include, but are not limited to, deforestation, habitat destruction or fragmentation, biological invasion, agricultural practices, and environmental pollution, climate change and resulting climate events.

A variety of topics, questions and approaches are appropriate. Research could focus on particular infectious agents, individual diseases, or groups of diseases, and might involve one or more regions, habitats, or groups of organisms. Depending on the hypotheses being addressed, investigations might entail laboratory experiments, field observations or manipulations, novel analyses of existing data, theoretical investigations of ecological and evolutionary dynamics or all of the above. Field investigations that elucidate extensive temporal and/or spatial patterns from nature are among those most likely to yield important insights. Such insights are likely to be gained through integrating work among several scales of observation, including molecular, individual, population, and regional levels of analysis. Use of remote sensing, geographic information systems, and other information technologies may be useful in such efforts.

Investigations may also consider dynamic processes using model biological systems, even in a laboratory setting. New insights gained from the study of biological interactions involving organisms (e.g., plants) or ecological settings (e.g., artificial communities) other than those of ultimate concern may very well improve our understanding of complex interactions in natural ecological systems.

The primary focus should be on ecological dynamics related to the population dynamics, evolution, and transmission of pathogens. Analysis of environmental and geophysical influences on the susceptibility of individuals or populations to infection by particular agents is appropriate. However, the research must include a substantial focus on the underlying ecological parameters of environmental change that influence transmission, evolution, and infection. Questions involving the evolution of pathogens and hosts within an ecological context are appropriate, although investigations focused simply on genetic change in diseases or hosts without consideration of ecological dynamics are outside the scope of this activity. While this competition focuses on anthropogenic environmental changes, research on the effects of normal climate phenomena, such as El Nino Southern Oscillation (ENSO) cycles and extreme climatic events, will be considered responsive only to the extent that the research proposed serves explicitly as a model for the effects of global climate change on infectious disease transmission.

Proposals may focus on either terrestrial, freshwater, or marine systems and organisms. Proposals that focus on disease systems of public health concern to developing countries are strongly encouraged. Proposals are encouraged to include links to the public health research community, including epidemiologists, medical entomologists, virologists, and parasitologists.

Examples of the kinds of ecological relationships that may be studied include, but are not limited to, the following:

- effect of changes in species richness on the persistence and relative abundance of pathogenic and non-pathogenic microorganisms, and their transmission to hosts,
- identification and evaluation of habitats favorable to the emergence of new infections,
- influences of global climate change and associated extreme events on transmission or risk of disease,
- impact of chemical or physical pollutants on abundance of pathogens and rates of transmission,
- consequences of newly introduced species on competitive interactions among hosts,
- impact of deforestation on human population density and the incidence of zoonotic and vector-borne disease,
- habitat fragmentation and changes in the geographic range of disease transmission,
- effects of pollution-related algal blooms on abundance of associated infectious organisms and their transmission to humans,
- meta-analyses of historical patterns of transmission and the underlying environmental determinants,
- factors affecting reservoir abundance and risk of zoonotic disease,
- role of habitat-specific diseases in shaping the community structure of non-human hosts,
- ecology of migration and population structure on emergence or regional maintenance of disease
- the role of pathogen evolution in ecological time and its effects on disease abundance and spread,

- the relationship of pathogen ecology and evolution on disease characteristics such as abundance, pathogenicity, transmission, and durability
- the interaction between human social and economic structures and ecological systems.

Funded research should aim beyond description to achieve mechanistic insights and into such phenomena. While the aim of this activity is to produce predictive or explanatory models, such models could be analytic, simulations, or statistical. Any such model, though, should provide general understanding beyond the specific system under study. In addition, for complex systems the model should serve as the central organizing principle. Models must include estimates of uncertainty and experiments should be designed to attain a high level of precision. Proposals should identify which individual(s) will oversee the quantitative approaches and provide evidence of their demonstrated expertise in data collection, mathematical modeling, and/or data analysis.

These kinds of problems are fundamentally interdisciplinary, and teams of investigators with expertise in a wide range of scientific training and skills from diverse disciplines are likely to be most effective. Integrated, collaborative efforts might involve infectious disease epidemiologists, population ecologists, marine scientists, statisticians, immunologists, parasitologists, geologists, taxonomists, molecular biologists, hydrologists, environmental health scientists, sociologists, economists, climatologists, and mathematical modelers, for example. A team approach is encouraged to answer questions that normally cannot be addressed within a single discipline. Work can involve the collection or development of new data, the reanalysis of existing data, or a combination of both.

Research involving human subjects or vertebrate animals

Projects involving research with human subjects must ensure that subjects are protected from research risks in conformance with the relevant Federal policy known as the Common Rule (Federal Policy for the Protection of Human Subjects, 45 CFR 690). Please pay attention to and follow all guidelines in the Grant Proposal Guide (GPG Chapter II, Section C.11.d and e) www.nsf.gov/cgi-bin/getpub?gpg and the Grant Policy Manual (GPM Section 710) www.nsf.gov/cgi-bin/getpub?gpm AND the PHS Form 398 http://grants.nih.gov/grants/funding/phs398/instructions2/phs398instructions.htm.

III. ELIGIBILITY INFORMATION

The categories of proposers identified in the Grant Proposal Guide are eligible to submit proposals under this program announcement/solicitation.

IV. AWARD INFORMATION

Under this solicitation, the maximum total award size is $2.5 million, including indirect costs, and the maximum award duration is five years. Approximately 7 new awards are anticipated in FY 2006, depending on the quality of submissions and the availability of funds; the expected funding will be $8.0 million. That amount includes approximately $6.5M from NSF and approximately $1.5M from NIH for new awards in FY 2006.

Upon conclusion of the review process, meritorious proposals may be recommended for funding by either NSF or NIH, at the option of the agencies, not the proposing organizations. Subsequent grant administration procedures will be in accordance with the individual policies of the awarding agency.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Full Proposal Instructions:

Proposals submitted in response to this program announcement/solicitation should be prepared and submitted in accordance with the general guidelines contained in the NSF *Grant Proposal Guide* (GPG). The complete text of the GPG is available electronically on the NSF Website at: http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg. Paper copies of the GPG

may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from pubs@nsf.gov.

Oceanographic Platform Support: For projects requesting ship time on a research vessel operated under the University-National Oceanographic Laboratory System (UNOLS), a copy of the UNOLS request form should be included as an attachment at the very end of the proposal. It should be submitted as Supplementary Documentation in FastLane. The UNOLS form may be obtained from the NSF Division of Ocean Sciences Ship Operations Program, National Science Foundation by calling (703) 292-8581, or directly from the UNOLS World Wide Web site at http://www.unols.org. UNOLS costs should not be included in the proposal budget; however, costs for the use of non-UNOLS research platforms must be included in the proposal budget.

Proposers are reminded to identify the program announcement/solicitation number (06-506) in the program announcement/solicitation block on the proposal Cover Sheet. Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Failure to submit this information may delay processing.

B. Budgetary Information

Cost Sharing:

Cost sharing is not required by NSF in proposals submitted under this Program Solicitation.

Budget Preparation Instructions:

Every year, the PI's of the EID awards will be asked to attend a meeting to be held at either the National Science Foundation or an alternate location. Include the necessary travel costs for attendance at the meeting in the proposed budget.

C. Due Dates

Proposals must be submitted by the following date(s):

Full Proposal Deadline(s) (due by 5 p.m. submitter's local time):

February 10, 2006

D. FastLane Requirements

Proposers are required to prepare and submit all proposals for this announcement/solicitation through the FastLane system. Detailed instructions for proposal preparation and submission via FastLane are available at: https://www.fastlane.nsf.gov/a1/newstan.htm. For FastLane user support, call the FastLane Help Desk at 1-800-673-6188 or e-mail fastlane@nsf.gov. The FastLane Help Desk answers general technical questions related to the use of the FastLane system. Specific questions related to this program announcement/solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this announcement/solicitation.

Submission of Electronically Signed Cover Sheets. The Authorized Organizational Representative (AOR) must electronically sign the proposal Cover Sheet to submit the required proposal certifications (see Chapter II, Section C of the Grant Proposal Guide for a listing of the certifications). The AOR must provide the required electronic certifications within five working days following the electronic submission of the proposal. Proposers are no longer required to provide a paper copy of the signed Proposal Cover Sheet to NSF. Further instructions regarding this process are available on the FastLane Website at: http://www.fastlane.nsf.gov

VI. PROPOSAL REVIEW INFORMATION

A. NSF Proposal Review Process

Reviews of proposals submitted to NSF are solicited from peers with expertise in the substantive area of the proposed research or education project. These reviewers are selected by Program Officers charged with the oversight of the review process. NSF invites the proposer to suggest, at the time of submission, the names of appropriate or inappropriate reviewers.

Care is taken to ensure that reviewers have no conflicts with the proposer. Special efforts are made to recruit reviewers from non-academic institutions, minority-serving institutions, or adjacent disciplines to that principally addressed in the proposal.

The National Science Board approved revised criteria for evaluating proposals at its meeting on March 28, 1997 (NSB 97-72). All NSF proposals are evaluated through use of the two merit review criteria. In some instances, however, NSF will employ additional criteria as required to highlight the specific objectives of certain programs and activities.

On July 8, 2002, the NSF Director issued Important Notice 127, Implementation of new Grant Proposal Guide Requirements Related to the Broader Impacts Criterion. This Important Notice reinforces the importance of addressing both criteria in the preparation and review of all proposals submitted to NSF. NSF continues to strengthen its internal processes to ensure that both of the merit review criteria are addressed when making funding decisions.

In an effort to increase compliance with these requirements, the January 2002 issuance of the GPG incorporated revised proposal preparation guidelines relating to the development of the Project Summary and Project Description. Chapter II of the GPG specifies that Principal Investigators (PIs) must address both merit review criteria in separate statements within the one-page Project Summary. This chapter also reiterates that broader impacts resulting from the proposed project must be addressed in the Project Description and described as an integral part of the narrative.

Effective October 1, 2002, NSF will return without review proposals that do not separately address both merit review criteria within the Project Summary. It is believed that these changes to NSF proposal preparation and processing guidelines will more clearly articulate the importance of broader impacts to NSF-funded projects.

The two National Science Board approved merit review criteria are listed below (see the Grant Proposal Guide Chapter III.A for further information). The criteria include considerations that help define them. These considerations are suggestions and not all will apply to any given proposal. While proposers must address both merit review criteria, reviewers will be asked to address only those considerations that are relevant to the proposal being considered and for which he/she is qualified to make judgments.

What is the intellectual merit of the proposed activity?
How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields? How well qualified is the proposer (individual or team) to conduct the project? (If appropriate, the reviewer will comment on the quality of the prior work.) To what extent does the proposed activity suggest and explore creative and original concepts? How well conceived and organized is the proposed activity? Is there sufficient access to resources?

What are the broader impacts of the proposed activity?
How well does the activity advance discovery and understanding while promoting teaching, training, and learning? How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)? To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks, and partnerships? Will the results be disseminated broadly to enhance scientific and technological understanding? What may be the benefits of the proposed activity to society?

NSF staff will give careful consideration to the following in making funding decisions:

Integration of Research and Education
One of the principal strategies in support of NSF's goals is to foster integration of research and education through the programs, projects, and activities it supports at academic and research institutions. These institutions provide abundant opportunities where individuals may concurrently assume responsibilities as researchers, educators, and students and where all can engage in joint efforts that infuse education with the excitement of discovery and enrich research through the diversity of learning perspectives.

Integrating Diversity into NSF Programs, Projects, and Activities
Broadening opportunities and enabling the participation of all citizens -- women and men, underrepresented minorities, and persons with disabilities -- is essential to the health and vitality of science and engineering. NSF is committed to this principle of diversity and deems it central to the programs, projects, and activities it considers and supports.

Additional Review Criteria:

- Significance: Does this study address an important problem? If the aims of the proposal are achieved, how will scientific knowledge be advanced? What will be the effect of these studies on the concepts or methods that drive this field?
- Investigator: Is the investigator appropriately trained and well suited to carry out this work? Is the work

proposed appropriate to the experience level of the principal investigator and other researchers (if any)?
- Innovation: Does the project employ novel concepts, approaches or methods? Are the aims original and innovative? Does the project challenge existing paradigms or develop new methodologies or technologies?
- Approach: Are the conceptual framework, design, methods, and analyses adequately developed, well integrated, and appropriate to the aims of the project? Does the investigator acknowledge potential problem areas and consider alternative tactics?
- Environment: Does the scientific environment in which the work will be done contribute to the probability of success? Do the proposed experiments take advantage of unique features of the scientific environment or employ useful collaborative arrangements? Is there evidence of institutional support?

Where relevant, proposals will also be reviewed with respect to the following:

- The adequacy of the plans to include both genders, minorities and their subgroups, and children as appropriate to the scientific goals of the research. If the proposed research includes human subjects plans for the recruitment and retention of subjects should be included. (see http://grants.nih.gov/grants/funding/women_min/guidelines_update.htm and http://grants.nih.gov/grants/funding/children/children.htm)
- The reasonableness of the proposed budget and duration in relation to the proposed research.
- The adequacy of the proposed protection for humans, animals, or the environment, to the extent they may be adversely affected by the project proposed in the application.

For those grants to be considered for funding by NIH, the applicant will be asked to prepare a second submission on the standard PHS 398 form (http://grants2.nih.gov/grants/funding/phs398/phs398.html). The results of the review will be presented to the Advisory Board of the Fogarty International Center (FIC) for the second level of review. This review is designed to assess the relevance of proposals to the respective missions of FIC. Subsequent to the Advisory Board review, FIC will make its funding determination and selected awards will be made.

B. Review Protocol and Associated Customer Service Standard

All proposals are carefully reviewed by at least three other persons outside NSF who are experts in the particular field represented by the proposal. Proposals submitted in response to this announcement/solicitation will be reviewed by Ad Hoc and/or panel review.

Reviewers will be asked to formulate a recommendation to either support or decline each proposal. The Program Officer assigned to manage the proposal's review will consider the advice of reviewers and will formulate a recommendation.

A summary rating and accompanying narrative will be completed and submitted by each reviewer. In all cases, reviews are treated as confidential documents. Verbatim copies of reviews, excluding the names of the reviewers, are sent to the Principal Investigator/Project Director by the Program Director. In addition, the proposer will receive an explanation of the decision to award or decline funding.

NSF is striving to be able to tell proposers whether their proposals have been declined or recommended for funding within six months. The time interval begins on the closing date of an announcement/solicitation, or the date of proposal receipt, whichever is later. The interval ends when the Division Director accepts the Program Officer's recommendation.

In all cases, after programmatic approval has been obtained, the proposals recommended for funding will be forwarded to the Division of Grants and Agreements for review of business, financial, and policy implications and the processing and issuance of a grant or other agreement. Proposers are cautioned that only a Grants and Agreements Officer may make commitments, obligations or awards on behalf of NSF or authorize the expenditure of funds. No commitment on the part of NSF should be inferred from technical or budgetary discussions with a NSF Program Officer. A Principal Investigator or organization that makes financial or personnel commitments in the absence of a grant or cooperative agreement signed by the NSF Grants and Agreements Officer does so at their own risk.

VII. AWARD ADMINISTRATION INFORMATION

A. Notification of the Award

Notification of the award is made to *the submitting organization* by a Grants Officer in the Division of Grants and Agreements. Organizations whose proposals are declined will be advised as promptly as possible by the cognizant NSF Program Division administering the program. Verbatim copies of reviews, not including the identity of the reviewer, will be provided

automatically to the Principal Investigator. (See section VI.A. for additional information on the review process.)

B. Award Conditions

An NSF award consists of: (1) the award letter, which includes any special provisions applicable to the award and any numbered amendments thereto; (2) the budget, which indicates the amounts, by categories of expense, on which NSF has based its support (or otherwise communicates any specific approvals or disapprovals of proposed expenditures); (3) the proposal referenced in the award letter; (4) the applicable award conditions, such as Grant General Conditions (NSF-GC-1); * or Federal Demonstration Partnership (FDP) Terms and Conditions * and (5) any announcement or other NSF issuance that may be incorporated by reference in the award letter. Cooperative agreement awards are administered in accordance with NSF Cooperative Agreement Financial and Administrative Terms and Conditions (CA-FATC). Electronic mail notification is the preferred way to transmit NSF awards to organizations that have electronic mail capabilities and have requested such notification from the Division of Grants and Agreements.

*These documents may be accessed electronically on NSF's Website at http://www.nsf.gov/awards/managing/. Paper copies of these documents may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from pubs@nsf.gov.

More comprehensive information on NSF Award Conditions is contained in the NSF *Grant Policy Manual* (GPM) Chapter II, available electronically on the NSF Website at http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpm. The GPM is also for sale through the Superintendent of Documents, Government Printing Office (GPO), Washington, DC 20402. The telephone number at GPO for subscription information is (202) 512-1800. The GPM may be ordered through the GPO Website at http://www.gpo.gov.

C. Reporting Requirements

For all multi-year grants (including both standard and continuing grants), the PI must submit an annual project report to the cognizant Program Officer at least 90 days before the end of the current budget period.

Within 90 days after the expiration of an award, the PI also is required to submit a final project report. Failure to provide final technical reports delays NSF review and processing of pending proposals for the PI and all Co-PIs. PIs should examine the formats of the required reports in advance to assure availability of required data.

PIs are required to use NSF's electronic project reporting system, available through FastLane, for preparation and submission of annual and final project reports. This system permits electronic submission and updating of project reports, including information on project participants (individual and organizational), activities and findings, publications, and other specific products and contributions. PIs will not be required to re-enter information previously provided, either with a proposal or in earlier updates using the electronic system.

VIII. CONTACTS FOR ADDITIONAL INFORMATION

General inquiries regarding this program should be made to:

- Samuel M. Scheiner, Program Director, Directorate for Biological Sciences, Division of Environmental Biology, 635 N, telephone: (703) 292-8481, fax: (703) 292-9064, email: sscheine@nsf.gov
- Fredric Lipschultz, Associate Program Director, Directorate for Geosciences, Division of Ocean Sciences, 725 N, telephone: (703) 292-8582, fax: (703) 292-9085, email: flipschu@nsf.gov
- Michael L. Mishkind, Program Director, Directorate for Biological Sciences, Division of Molecular & Cellular Biosciences, 655 S, telephone: (703) 292-7190, fax: (703) 292-9061, email: mmishkin@nsf.gov
- Dr. Joshua Rosenthal, Program Director, Fogarty International Center, National Institutes of Health, 31 Center Dr. MSC 2220, Bethesda, MD 20892-2220, telephone: (301) 496-1653, fax: (301) 402-2056, email: joshua_rosenthal@nih.gov

For questions related to the use of FastLane, contact:

- FastLane Help Desk,telephone: 1-800-873-6188, email: biofl@nsf.gov

IX. OTHER PROGRAMS OF INTEREST

The NSF *Guide to Programs* is a compilation of funding for research and education in science, mathematics, and engineering. The NSF *Guide to Programs* is available electronically at http://www.nsf.gov/cgi-bin/getpub?gp. General descriptions of NSF programs, research areas, and eligibility information for proposal submission are provided in each chapter.

Many NSF programs offer announcements or solicitations concerning specific proposal requirements. To obtain additional information about these requirements, contact the appropriate NSF program offices. Any changes in NSF's fiscal year programs occurring after press time for the *Guide to Programs* will be announced in the NSF E-Bulletin, which is updated daily on the NSF Website at http://www.nsf.gov/home/ebulletin, and in individual program announcements/solicitations. Subscribers can also sign up for NSF's MyNSF News Service (http://www.nsf.gov/mynsf/) to be notified of new funding opportunities that become available.

NIGMS has a related announcement on the evolutionary mechanisms of infectious diseases. Information is available at http://grants.nih.gov/grants/guide/pa-files/PA-02-113.html.

The Fogarty International Center has a variety of related programs. Information is available at http://www.fic.nih.gov/programs.html.

ABOUT THE NATIONAL SCIENCE FOUNDATION

The National Science Foundation (NSF) funds research and education in most fields of science and engineering. Awardees are wholly responsible for conducting their project activities and preparing the results for publication. Thus, the Foundation does not assume responsibility for such findings or their interpretation.

NSF welcomes proposals from all qualified scientists, engineers and educators. The Foundation strongly encourages women, minorities and persons with disabilities to compete fully in its programs. In accordance with Federal statutes, regulations and NSF policies, no person on grounds of race, color, age, sex, national origin or disability shall be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving financial assistance from NSF, although some programs may have special requirements that limit eligibility.

Facilitation Awards for Scientists and Engineers with Disabilities (FASED) provide funding for special assistance or equipment to enable persons with disabilities (investigators and other staff, including student research assistants) to work on NSF-supported projects. See the GPG Chapter II, Section D.2 for instructions regarding preparation of these types of proposals.

The National Science Foundation promotes and advances scientific progress in the United States by competitively awarding grants and cooperative agreements for research and education in the sciences, mathematics, and engineering.

To get the latest information about program deadlines, to download copies of NSF publications, and to access abstracts of awards, visit the NSF Website at http://www.nsf.gov

- **Location:** 4201 Wilson Blvd. Arlington, VA 22230
- **For General Information** (NSF Information Center)**:** (703) 292-5111
- **TDD (for the hearing-impaired):** (703) 292-5090

- **To Order Publications or Forms:**

Send an e-mail to:	pubs@nsf.gov
or telephone:	(703) 292-7827

- **To Locate NSF Employees:** (703) 292-5111

PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

The information requested on proposal forms and project reports is solicited under the authority of the National Science Foundation Act of 1950, as amended. The information on proposal forms will be used in connection with the selection of qualified proposals; project reports submitted by awardees will be used for program evaluation and reporting within the Executive Branch and to Congress. The information requested may be disclosed to qualified reviewers and staff assistants as part of the proposal review process; to applicant institutions/grantees to provide or obtain data regarding the proposal review process, award decisions, or the administration of awards; to government contractors, experts, volunteers and researchers and educators as necessary to complete assigned work; to other government agencies needing information as part of the review process or in order to coordinate programs; and to another Federal agency, court or party in a court or Federal administrative proceeding if the government is a party. Information about Principal Investigators may be added to the Reviewer file and used to select potential candidates to serve as peer reviewers or advisory committee members. See Systems of Records, NSF-50, "Principal Investigator/Proposal File and Associated Records," 63 Federal Register 267 (January 5, 1998), and NSF-51, "Reviewer/Proposal File and Associated Records," 63 Federal Register 268 (January 5, 1998). Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of receiving an award.

An agency may not conduct or sponsor, and a person is not required to respond to an information collection unless it displays a valid OMB control number. The OMB control number for this collection is 3145-0058. Public reporting burden for this collection of information is estimated to average 120 hours per response, including the time for reviewing instructions. Send comments regarding this burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to: Suzanne Plimpton, Reports Clearance Officer, Division of Administrative Services, National Science Foundation, Arlington, VA 22230.

OMB control number: 3145-0058.

The National Science Foundation, 4201 Wilson Boulevard, Arlington, Virginia 22230, USA
Tel: (703) 292-5111, FIRS: (800) 877-8339 | TDD: (800) 281-8749