Postdoctoral Research Fellowships in Biology (PRFB)

PROGRAM SOLICITATION
NSF 07-580

REPLACES DOCUMENT(S):
NSF 04-539

National Science Foundation

Directorate for Biological Sciences

THIS DOCUMENT HAS BEEN ARCHIVED AND REPLACED BY NSF 09-573

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

November 05, 2007

First Monday in November, Annually Thereafter

REVISION NOTES

- This program solicitation serves as the focal point for all Postdoctoral Fellowships in the Directorate for Biological Sciences at the National Science Foundation.
- Postdoctoral Fellowships in Biological Informatics are again being offered in fiscal years 2008, 2009, and 2010. The program description has been updated to reflect continuing development of the scientific opportunities at the intersections of biology, computer science, mathematics and statistics, and the physical sciences.
- Fellowship stipends are being adjusted on a yearly basis.
- Sponsoring scientists must present a mentoring plan in the fellowship application.
- For now, submission can only be made using NSF's FastLane system, given that Grants.gov does not support all required forms.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

Postdoctoral Research Fellowships in Biology

Synopsis of Program:

The Directorate for Biological Sciences (BIO) awards Postdoctoral Research Fellowships in Biology to recent recipients of the doctoral degree for research and training in *selected* areas of biology supported by BIO to encourage independence early in their research careers and to permit them to pursue their research and training goals in the most appropriate research locations regardless of the availability of funding for the Fellows at that site. With this solicitation, BIO is establishing a program solicitation for announcing selected areas for its postdoctoral research fellowships. ***Currently the BIO programs are: Broadening Participation of Under-represented Groups in Biology and Biological Informatics.*** It is expected that in future years, these areas will change as new scientific and infrastructure opportunities present themselves; and this solicitation will be changed to reflect the areas being funded. The fellowships are also designed to provide active mentoring of the Fellows by the sponsoring scientists who will benefit from having additional members in their research groups. The research and training plan of each fellowship must address important scientific questions in contemporary biology within the scope of the BIO Directorate and the specific guidelines in this fellowship program solicitation. Because the fellowships are offered only to postdoctoral scientists early in their careers, doctoral advisors are encouraged to discuss the availability of BIO fellowships with their graduate students early in their doctoral programs. Fellowships are awards to individuals, not institutions, and are administered by the Fellows.

Cognizant Program Officer(s):

- Carter Kimsey, Program Manager, Broadening Participation, telephone: (703) 292-8470, email: ckimsey@nsf.gov

- Peter McCartney, Program Director, Informatics, telephone: (703) 292-8470, email: pmccartn@nsf.gov

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

- 47.074 --- Biological Sciences

Award Information

Anticipated Type of Award: Fellowship Grant

Estimated Number of Awards: 15 fellowships per year in each competition area contingent upon availability of funds.

Anticipated Funding Amount: $2 million dollars in each fiscal year 2008-2012 (not including the Minority Postdoctoral Fellowships that are described in a separate program solicitation).

Eligibility Information

Organization Limit:

Proposals may only be submitted by the following:

- Only individuals may apply. NSF postdoctoral fellowships are awards to individuals, and applications are submitted directly by applicants to NSF. However, applications must include sponsoring scientists' statements and the applicants must affiliate with institutions (*e.g.*, colleges and universities, and privately-sponsored nonprofit institutes and museums, government agencies and laboratories, and, under special conditions, for-profit organizations) anywhere in the world.

PI Limit:

Applicants must

- be U.S. citizens (or nationals) or legally admitted permanent residents of the United States (*i.e.*, have a "green card") at the time of application;

- earn or plan to earn the doctoral degree in a scientific or engineering field prior to the requested start date of the fellowship;

- either currently be a graduate student or, at the deadline date, have served in a position requiring the doctoral degree for no more than 12 full time months since earning the degree. There is a one time exception to this criterion for Biological Informatics in November, 2007 only, as described below.

- must present a research and training plan that falls within the purview of BIO and includes the required information for the specific competition as described below;

- select a host institution and sponsoring scientist different from the doctoral degree and current position or provide compelling justification for why such a change is not being proposed;

- not have received Federal funding of more than $20,000 as PI or co-PI (except graduate fellowships and doctoral dissertation improvement grants);

- not have submitted concurrently the same project to another NSF program;

- not be a named participant on any other proposal submitted to NSF, including regular research proposals, concurrent with the fellowship application, regardless of who is the named principal investigator; AND

- meet other limitations on eligibility imposed within the specific competitive areas, if any.

If you fail to meet any eligibility criterion, your application will be returned without review.

Limit on Number of Proposals per Organization:

Only individuals may apply. There is no limit on the number of applicants that an institution may host.

Limit on Number of Proposals per PI: 1

Applicants may submit only one fellowship application to BIO per fiscal year and may apply in no more than 2 successive years for all Postdoctoral Fellowships in Biology.

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

- **Letters of Intent:** Not Applicable

- **Preliminary Proposal Submission:** Not Applicable

- **Full Proposal Preparation Instructions:** This solicitation contains information that deviates from the standard NSF Proposal and Award Policies and Procedures Guide, Part I: 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 under this solicitation.

- **Indirect Cost (F&A) Limitations:** Fellowships are awards to individuals and have an institutional allowance in lieu of indirect costs.

Other Budgetary Limitations: Other budgetary limitations apply. Please see the full text of this solicitation for further information.

C. Due Dates

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

    November 05, 2007

    First Monday in November, Annually Thereafter

Proposal Review Information Criteria

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: Additional award conditions apply. Please see the full text of this solicitation for further information.

Reporting Requirements: Additional reporting requirements apply. Please see the full text of this solicitation for further information.

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I. INTRODUCTION

BIO offers postdoctoral research fellowships in selected areas of biology to provide opportunities for scientists early in their careers to obtain training beyond their graduate education to prepare them for independent careers, to gain research experience under the sponsorship of established scientists, and to broaden their scientific horizons. Fellowships are further designed to assist new scientists to direct their research efforts across traditional disciplinary lines and to avail themselves of unique research resources, sites, and facilities, including foreign locations. Fellows must affiliate with appropriate research institutions and are expected to devote themselves full time to the fellowship activities for the duration of the fellowship. BIO selects areas of opportunity in biology for fellowship support in areas where human resources are needed to develop the newly emerging area and does not offer fellowships in all the research areas supported by BIO.

In fiscal year 2008, BIO offers Postdoctoral Research Fellowships in Biology in 2 selected areas:

1. Broadening Participation of Under-represented Groups in Biology. These fellowships are described in the Minority Postdoctoral Research Fellowships and Supporting Activities program solicitation and are a joint activity with the Directorate for Social, Behavioral, and Economic Sciences.
2. Biological Informatics: These fellowships support Fellows who are developing and using computational, statistical, visualization, and data-intensive technology in the collection, organization, dissemination, and use of information in biological research or are developing mathematical or statistical models to test theories and address empirical problems in areas of biology supported by BIO.

II. PROGRAM DESCRIPTION

Fellowship Competition Area 1: Broadening Participation of Under-represented Groups in Biology. These fellowships are described in program solicitation Minority Postdoctoral Research Fellowships and Supporting Activities.

The Directorates for Biological Sciences (BIO) and Social, Behavioral, and Economic Sciences (SBE) of the National Science Foundation (NSF) jointly sponsor a program of Minority Postdoctoral Research Fellowships and supporting activities. Through this program BIO seeks to increase the diversity of scientists at the postdoctoral level in biology, thereby contributing to the future vitality of the Nation's scientific enterprise. It is expected that these fellowships will be offered in fiscal years 2008 through 2011 with corresponding deadlines in November of 2007 through 2010.

Fellowship Competition Area 2: Biological Informatics. These fellowships are a 3-year continuation of BIO's Postdoctoral Fellowships in Biological Informatics, previously announced in program solicitations NSF 98-162, NSF 02-159, and NSF 04-539. The application deadline is moved from April to the first Monday in November for the remaining 3 years of this competitive area. To accommodate this change in deadline date, applicants who would have been eligible to apply on April 9, 2007 may apply for the November, 2007 deadline. This is one-time special case and does not apply to the deadlines in 2008 and 2009.

The scope of these fellowships is enlarged to include development of mathematical or statistical models that codify and test theory or that advance the conceptual basis of biology . The research and training plans of the fellowships are expected to address important scientific questions at the intersection of biology and computational, mathematical, or statistical sciences and to apply state-of-the-art informatics tools or approaches to the stated research problems and training needs. Because NSF investments in cyberinfrastructure are providing significant new tools and facilities for recognizing and analyzing biological information, this program seeks to ensure that these tools and facilities transform our knowledge of life and that knowledge gained will be transferred to future generations of scientists. Research supported by this program will integrate or synthesize biology (as supported within the BIO directorate) with information (computing, mathematical, statistical, modeling) sciences. The research and training supported by these fellowships likely will include (but not be limited to) network and pathway analysis, data mining and natural language processing, modeling, knowledge representation and information integration.

Applications are expected to present leading-edge questions in biology and address how the research will advance the field using one or more of the following approaches:

- Data intensive. Research may analyze, organize, or integrate large quantities of empirical data. Ideally, these data are already available; if a significant amount of time is to be spent collecting new data, a clear explanation of the methods and justification should be provided.

- Computationally intensive. Research may involve complex modeling of biological systems. Proposals should take care to identify the means and available data for validating models.

- Theoretical. Research may apply mathematical and computational tools to address leading-edge theoretical challenges in biology.

Successful proposals are expected to share these characteristics:

- Leveraging by making significant enhancements to, or novel use of, existing technology and/or mathematical/statistical techniques. The proposal should demonstrate how the application goes beyond routine use of common analytic tools.

- Innovative by developing databases, algorithms, or software tools that contribute to new biological cyberinfrastructure. Such proposals should explain how the proposed product advances beyond existing technology and how these will be disseminated to the broader community.

- Interdisciplinary by addressing significant challenges in areas of both biology and information science.

Each application to this area should include a rigorous training program that will significantly advance the applicant's expertise in applying and teaching informatics and computational methods in biology. Applicants may propose to develop new skills in leading-edge methods, substantially extend existing abilities, or apply existing quantitative skills to an unfamiliar area of biology. The project description should clearly identify the training goals and the means and resources by which the applicant intends to achieve them.

Abstracts of research and training previously supported by this program can be viewed by individual fiscal years at http://www.nsf.gov/bio/pubs/awards/index.jsp. Prospective applicants should be advised that biological cyberinfrastructure is rapidly expanding and that past funding may not accurately reflect the priorities outlined in this 3-year extension of the program.

General description of BIO Postdoctoral Fellowships

A. Appropriateness for BIO and Program Priorities

A research and training plan whose focus falls within the scope of any of the core programs in the Directorate for the Biological Sciences (BIO) is eligible for support within the topic area. Further restrictions may apply for particular postdoctoral competitions. Be aware that BIO does not support research with human disease-related goals, including the etiology, diagnosis, or treatment of physical or mental disease, abnormality, or malfunction in humans or animals. Animal models of such conditions or the development or testing of drugs or other procedures for their treatment also are not eligible for support. While it is expected that research of fundamental biological significance may often have broader impacts to medicine, applications determined to have a clear biomedical focus will be returned without review. If your proposal mentions human disease, you should discuss its appropriateness with one of the listed program Officers. Priority is given to research areas where BIO plays a unique or special role among NSF programs and total Federal funding. If your research is in an area of biology not primarily funded by BIO or if you are uncertain, you are strongly encouraged to call one of the BIO Program Officers to discuss the appropriateness of the research.

B. Location of Work

Research and training supported by these fellowships may be conducted at any appropriate U.S. or foreign host institution. Appropriate institutions include colleges and universities, private nonprofit institutes and museums, and government installations and laboratories. Private and public for-profit organizations may be suitable if they provide an institutional contribution to cover the institutional and special allowances (see below) and do not place any intellectual property limitations on the Fellow's activities. Because the objectives of the fellowships include

broadening the perspectives and experiences of the Fellows and promoting interdisciplinary research careers, careful consideration should be given to the selection of the sponsoring scientists and host institutions.

Fellowships are normally 24 months. However, BIO encourages Fellows to gain international experience by selecting foreign hosts for at least part of the tenure of the fellowship. Applicants who plan to spend more than one year of the fellowship in a sponsoring laboratory overseas may request a 3-year fellowship that may include the final year at a U.S. laboratory after the foreign tenure. Both the foreign and U.S. locations must be identified in the application. Preference will be given to applicants who choose foreign locations and those moving to new institutions and research environments with which they have had no prior affiliation.

C. The Sponsoring Scientist(s)

The Fellow must affiliate with a host institution(s) at all times during the entire tenure of the fellowship and select a sponsoring scientist(s) who will provide mentoring and guidance with both the research and training proposed by the applicant. The applicant is responsible for making prior arrangements with the host institution and sponsoring scientist(s). Regardless of the number of sponsors or locations, the fellowship application requires a single sponsoring scientist statement. If more than one sponsor is proposed, one must be named lead sponsor and information from all must be integrated into a single statement. Likewise, if more than one site is proposed, the sponsoring scientist statement must integrate all sponsors and locations in a single statement. Because of the increasingly important intersections of other fields with biology, it is expected that dual sponsorship will be common. An important basis for judging the suitability of the host institution is the degree to which the sponsoring scientist statement describes and offers a research environment and mentoring plan that could not be provided without fellowship support.

If a fellowship is offered, the applicant may be requested to provide documentation from the host institution that the terms and conditions of the fellowship are acceptable and that the Fellow will be provided adequate mentoring, space, basic services, needed resources, and supplies. Once an application is submitted, any changes in location or sponsorship for the fellowship must be approved in advance by BIO.

III. AWARD INFORMATION

A. Duration and Tenure

The fellowship tenure is for 24 continuous months except when the Fellow spends more than a year abroad. In this case, the original application may request a 36-month tenure. Tenure begins on the first of the month only and may commence at the Fellow's request between June 1 and January 1 following review of the proposal which occurs within 6 months of the application deadline. Interruptions in tenure or extensions without additional cost to NSF are permitted only for extenuating circumstances beyond the control of the Fellow. Fellowships are not renewable.

B. Stipend and Allowances

The total fellowship amount is $60,000 for year 1 of the fellowship, $63,000 for year 2, and $66,000 for year 3 and consists of three types of payments. The stipend is $45,000 for year 1, $48,000 for year 2, and $51,000 for year 3 paid monthly at the rate of $3,750/$4,000/$4,300 directly to the Fellow as an electronic funds transfer into a personal account at a financial institution. A research allowance of $10,000 per year is paid as a lump sum to the Fellow at the beginning of the Fellowship in the same manner for expenses directly related to the conduct of the research, such as materials and supplies, subscription fees and recovery costs for databases, travel, and publication expenses. An institutional allowance of $5,000 per year is paid to the host institution for fringe benefits, including health insurance for the Fellow, and for expenses incurred in support of the Fellow, such as space, equipment, and general-purpose supplies.

The fellowship amount can be increased to include a Facilitation Award for Scientists and Engineers with Disabilities (FASED) and joint funding with the International Research Fellowship Program (IRFP) but otherwise cannot be increased or supplemented. When requesting FASED and IRFP funding, applicants should contact the BIO Postdoctoral Fellowship Program prior to applying.

Indirect Cost (F&A) Limitations: Fellowships are awards to individuals and have an institutional allowance in lieu of indirect costs.

C. Cost Sharing is not required in applications submitted under this Program Solicitation.

IV. ELIGIBILITY INFORMATION

Organization Limit:

Proposals may only be submitted by the following:

- Only individuals may apply. NSF postdoctoral fellowships are awards to individuals, and applications are submitted directly by applicants to NSF. However, applications must include sponsoring scientists' statements and the applicants must affiliate with institutions (*e.g.*, colleges and universities, and privately-sponsored nonprofit institutes and museums, government agencies and laboratories, and, under special conditions, for-profit organizations) anywhere in the world.

PI Limit:

Applicants must

- be U.S. citizens (or nationals) or legally admitted permanent residents of the United States (*i.e.*, have a

"green card") at the time of application;

- earn or plan to earn the doctoral degree in a scientific or engineering field prior to the requested start date of the fellowship;

- either currently be a graduate student or, at the deadline date, have served in a position requiring the doctoral degree for no more than 12 full time months since earning the degree. There is a one time exception to this criterion for Biological Informatics in November, 2007 only, as described below.

- must present a research and training plan that falls within the purview of BIO and includes the required information for the specific competition as described below;

- select a host institution and sponsoring scientist different from the doctoral degree and current position or provide compelling justification for why such a change is not being proposed;

- not have received Federal funding of more than $20,000 as PI or co-PI (except graduate fellowships and doctoral dissertation improvement grants);

- not have submitted concurrently the same project to another NSF program;

- not be a named participant on any other proposal submitted to NSF, including regular research proposals, concurrent with the fellowship application, regardless of who is the named principal investigator; AND

- meet other limitations on eligibility imposed within the specific competitive areas, if any.

If you fail to meet any eligibility criterion, your application will be returned without review.

Limit on Number of Proposals per Organization:

Only individuals may apply. There is no limit on the number of applicants that an institution may host.

Limit on Number of Proposals per PI: 1

Applicants may submit only one fellowship application to BIO per fiscal year and may apply in no more than 2 successive years for all Postdoctoral Fellowships in Biology.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Full Proposal Instructions: Proposals submitted in response to this program solicitation should be prepared and submitted in accordance with the guidelines specified 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-PUBS (7827) or by e-mail from pubs@nsf.gov.

Include all the requested information and documentation but *do not* include anything that is not specifically requested. Page limits include pictures, figures, tables, graphics, etc. NSF has issued new guidance on margins, fonts, and spacing in its new NSF Proposal & Award Policies & Procedures Guide (NSF 07-140). The proposal must be clear, readily legible and conform to the following requirements or your proposal will be returned without review:

1. an Arial, Helvetica, Palatino (for MacIntosh), Palatino Linotype (for Windows), Computer Modern (TeX only), or Georgia typeface, a black font color , and a font size of 10 points or larger must be used. (A symbol font may be used to insert Greek letters or special characters; however, the font size requirement still applies.)

2. no more than 6 lines of type within a vertical space of 1 inch; and

3. margins, in all directions, must be at least 1 inch.

Proposals that don't conform to these requirements and all page limitations will not be accepted and will be returned without review. You will not be given a chance to shorten and resubmit the proposal. Proposals must be submitted electronically via the NSF FastLane system. Only complete and timely applications will be accepted; non-compliant applications will be returned without review.

Preparing your fellowship application is different in several ways from preparing a research proposal:

- Do not submit your proposal through a sponsored projects office at your home or host institution; you are submitting the proposal as an individual. You must first register as an individual researcher before you or your references can gain access to the application and reference procedures. To use FastLane, go to the NSF Web site http://www.nsf.gov/ and select "FastLane" or directly to the FastLane home page http://www.fastlane.nsf.gov/. Click on the Postdoctoral Fellowships tab. Click on applicant, then select Postdoctoral Research Fellowships in Biology. Then click on "How to apply" for complete step-by-step instructions.

- A complete FastLane submitted proposal requires materials from you (the applicant), a statement and CV from your sponsoring scientist(s), and 2 reference letters (one from the doctoral thesis advisor).

- The information needed from the sponsoring scientist(s) is similarly found on the FastLane homepage after answering "sponsoring scientist" to the "Who are you?" question. This information must be uploaded into the application.

- Your references enter their materials directly into FastLane similarly from the FastLane homepage.

- FastLane allows fellowship applicants and references to work on parts of the application and to save them for future completion and submission.

Your sponsoring scientists and references should go to the FastLane home page, click on the postdoctoral fellowships tab, then

answer the "Who are you" question before selecting Postdoctoral Fellowships in Biology.

In FastLane, a complete fellowship application consists of:

1. the application form (this form is unique to fellowships and can only be accessed in FastLane by following the directions as described herein);

2. applicant's Curriculum Vitae (CV) limited to 2 pages;

3. an abstract of the proposed research including a specific statement of its broader impact (limited to one page). See Section VI. A. below for guidance from the National Science Board on broader impacts. If the abstract fails to include a clear statement of broader impacts, the proposal will be returned without review;

4. research and training plan (limited to 5 pages, including all figures, tables, etc.) with its own bibliography (no page limit);

5. abstract of your dissertation research (limited to one page);

6. the sponsoring scientist(s) statement that you upload into your application; and

7. two reference reports, submitted directly in FastLane by your reference writers.

Guidance on the research and training plan:

The research and training plan presents the research you'll conduct and the training you'll receive during the fellowship period and how they relate to your career goals. Include in the research and training plan: 1) a brief and informative introduction or background section; 2) a statement of research objectives, methods, and significance; 3) training objectives (these may include scientific as well as other career preparation activities); 4) an explanation of how the fellowship activities will enhance your career development; and 5) a justification of the choice of sponsoring scientist(s) and host institution(s). Reviewers will be instructed to give equal weight to all 5 items.

Some applications may require other documentation before the final decision can be made, *e.g.*, animal care and use, human subjects, government permits, letters of collaboration, and commitments from private sources. Their existence should be noted in the research and training plan but they should not be included in the application. NSF may request them later.

Guidance on the Sponsoring Scientist(s) Statement:

The sponsoring scientist(s) statement is meant to show how the proposed host(s) and host institution(s) provide the best environment for your proposed research and training plan and form the basis for a future independent research career. Therefore, it should include a specific mentoring plan, a description of how your independence will be nurtured, and what aspects of the project, if any, cannot go with you when you leave. If there are multiple sponsors, one integrated statement must be developed and submitted. If you plan to teach as part of your career development activities, you are limited to teaching in a course taught by your sponsoring scientist(s) or as part of a course directly related to your doctoral or fellowship research project. The sponsoring scientist(s) statement must detail the mentoring you will receive on teaching if applicable. Sponsors are not expected to provide all the mentoring themselves but may call on all resources available on campus or through other organizations, *e.g.*, professional societies, postdoctoral offices, etc.

Remind your sponsoring scientist that a complete sponsoring scientist statement consists of 2 parts; a CV of no more than 2 pages for each sponsor and a single discussion of the following items:

1. A brief description of the research projects in the host research group(s), including a statement of current and pending research support, both private and public, for each sponsor. If any sponsor has submitted similar research for funding, what is the degree of overlap?

2. An explanation of how the research and training plan of the applicant would fit into and complement ongoing research of the sponsor(s) and indicate the personnel with whom the Fellow would work.

3. How the sponsor(s) will determine what mentoring the applicant needs in research, teaching, and career development skills and translate these into a specific plan to foster the development of the applicant's future independent research career.

4. What role the sponsor(s) will play in the proposed research and training and what other resources will be available to the Fellow to complete their development plan during the fellowship.

5. What limitations, if any, will be placed on the Fellow regarding the research following the fellowship.

You upload the sponsoring scientist statement into your application as a "supplementary document" in FastLane.

To be complete, your application must also include the 2 references as listed on your application form. One should be your thesis advisor. Do not use your sponsoring scientist as a reference. Your references will need your FastLane-assigned temporary proposal number and a password that you assign. FastLane permits you to send them an email with this information or you can provide it to them directly. They must change the password the first time they login to the reference module. They complete a reference form in FastLane, upload a recommendation letter, and then submit the reference.

Proposers are reminded to identify the program solicitation number (NSF 07-580) in the program solicitation block on the NSF Cover Sheet For Proposal to the National Science Foundation. 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 under this solicitation.

Indirect Cost (F&A) Limitations: Fellowships are awards to individuals and have an institutional allowance in lieu of indirect costs.

Other Budgetary Limitations:

The fellowship award amount is set for all fellowships based on the duration of the award. FastLane generates the budget; applicants do not need to enter any budget information.   The research and training plan should make clear the requested duration.

C. Due Dates

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

  November 05, 2007

  First Monday in November, Annually Thereafter

Postdoctoral Research Fellowships in Biology have one deadline each year.

D. FastLane Requirements

Proposers are required to prepare and submit all proposals for this program solicitation through use of the NSF FastLane system. Detailed instructions regarding the technical aspects of proposal preparation and submission via FastLane are available at: http://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 solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this funding opportunity.

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. Further instructions regarding this process are available on the FastLane Website at: https://www.fastlane.nsf.gov/fastlane.jsp.

VI. NSF PROPOSAL PROCESSING AND REVIEW PROCEDURES

Proposals received by NSF are assigned to the appropriate NSF program where they will be reviewed if they meet NSF proposal preparation requirements. All proposals are carefully reviewed by a scientist, engineer, or educator serving as an NSF Program Officer, and usually by three to ten other persons outside NSF who are experts in the particular fields represented by the proposal. These reviewers are selected by Program Officers charged with the oversight of the review process. Proposers are invited to suggest names of persons they believe are especially well qualified to review the proposal and/or persons they would prefer not review the proposal. These suggestions may serve as one source in the reviewer selection process at the Program Officer's discretion. Submission of such names, however, is optional. Care is taken to ensure that reviewers have no conflicts of interest with the proposal.

A. NSF Merit Review Criteria

All NSF proposals are evaluated through use of the two National Science Board (NSB)-approved merit review criteria: intellectual merit and the broader impacts of the proposed effort. In some instances, however, NSF will employ additional criteria as required to highlight the specific objectives of certain programs and activities.

The two NSB-approved merit review criteria are listed below. 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 the reviewer is qualified to make judgements.

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, original, or potentially transformative 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?

Examples illustrating activities likely to demonstrate broader impacts are available electronically on the NSF website at: http://www.nsf.gov/pubs/gpg/broaderimpacts.pdf.

NSF staff also 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:

Applicants are evaluated on their ability, accomplishments, and potential as evidenced by the submitted *CV* and reference reports. The research and training plan is evaluated on its scientific merit, its feasibility, its significance in generating new biological knowledge, and its impact on the career development of the applicant. Other important evaluative factors are the suitability and availability of the sponsoring scientist(s) and host institution(s), including colleagues and facilities.

B. Review and Selection Process

Proposals submitted in response to this program solicitation will be reviewed by Ad hoc Review 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.

After scientific, technical and programmatic review and consideration of appropriate factors, the NSF Program Officer recommends to the cognizant Division Director whether the proposal should be declined or recommended for award. NSF is striving to be able to tell applicants whether their proposals have been declined or recommended for funding within six months. The time interval begins on the deadline or target date, or receipt date, whichever is later. The interval ends when the Division Director accepts the Program Officer's 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 Officer. In addition, the proposer will receive an explanation of the decision to award or decline funding.

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 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.B. 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 (GC-1); * or Research Terms and Conditions * and (5) any announcement or other NSF issuance that may be incorporated by reference in the award letter. Cooperative agreements also are administered in accordance with NSF Cooperative Agreement Financial and Administrative Terms and Conditions (CA-FATC) and the applicable Programmatic Terms and Conditions. NSF awards are electronically signed by an NSF Grants and Agreements Officer and transmitted electronically to the organization via e-mail.

*These documents may be accessed electronically on NSF's Website at http://www.nsf.gov/awards/managing/award_conditions.jsp?org=NSF. Paper copies 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 and other important information on the administration of NSF awards is contained in the NSF *Award & Administration Guide* (AAG) Chapter II, available electronically on the NSF Website at http://www.nsf.gov/publications/pub_summ.jsp?ods_key=aag.

Special Award Conditions: The fellowship award is made to the individual, not the institution. Payments (except the institutional allowance) are made to the individual. Awards cannot be extended without prior NSF approval. Pre-award costs are not permitted.

C. Reporting Requirements

For all multi-year grants (including both standard and continuing grants), the Principal Investigator must submit an annual project report to the cognizant Program Officer at least 90 days before the end of the current budget period. (Some programs or awards require more frequent project reports). Within 90 days after expiration of a grant, the PI also is required to submit a final project report.

Failure to provide the required annual or final project reports will delay NSF review and processing of any future funding increments as well as any pending proposals for that PI. 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. Such reports provide information on activities and findings, project participants (individual and organizational) 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. Submission of the report via FastLane constitutes certification by the PI that the contents of the report are accurate and complete.

Applicants must file termination certificates in addition to annual and final technical reports.

VIII. AGENCY CONTACTS

General inquiries regarding this program should be made to:

- Carter Kimsey, Program Manager, Broadening Participation, telephone: (703) 292-8470, email: ckimsey@nsf.gov

- Peter McCartney, Program Director, Informatics, telephone: (703) 292-8470, email: pmccartn@nsf.gov

For questions related to the use of FastLane, contact:

- FastLane Help Desk, telephone: 1-800-673-6188; e-mail: fastlane@nsf.gov.

IX. OTHER INFORMATION

The NSF Website provides the most comprehensive source of information on NSF Directorates (including contact information), programs and funding opportunities. Use of this Website by potential proposers is strongly encouraged. In addition, MyNSF (formerly the Custom News Service) is an information-delivery system designed to keep potential proposers and other interested parties apprised of new NSF funding opportunities and publications, important changes in proposal and award policies and procedures, and upcoming NSF Regional Grants Conferences. Subscribers are informed through e-mail or the user's Web browser each time new publications are issued that match their identified interests. MyNSF also is available on NSF's Website at http://www.nsf.gov/mynsf/.

Grants.gov provides an additional electronic capability to search for Federal government-wide grant opportunities. NSF funding opportunities may be accessed via this new mechanism. Further information on Grants.gov may be obtained at http://www.grants.gov.

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NSF funds research and education in most fields of science and engineering. It does this through grants and cooperative agreements to more than 2,000 colleges, universities, K-12 school systems, businesses, informal science organizations and other research organizations throughout the US. The Foundation accounts for about one-fourth of Federal support to academic institutions for basic research.

NSF receives approximately 40,000 proposals each year for research, education and training projects, of which approximately 11,000 are funded. In addition, the Foundation receives several thousand applications for graduate and postdoctoral fellowships. The agency operates no laboratories itself but does support National Research Centers, user facilities, certain oceanographic vessels and Antarctic research stations. The Foundation also supports cooperative research between universities and industry, US participation in international scientific and engineering efforts, and educational activities at every academic level.

Facilitation Awards for Scientists and Engineers with Disabilities provide funding for special assistance or equipment to enable persons with disabilities to work on NSF-supported projects. See Grant Proposal Guide Chapter II, Section D.2 for instructions regarding preparation of these types of proposals.

The National Science Foundation has Telephonic Device for the Deaf (TDD) and Federal Information Relay Service (FIRS) capabilities that enable individuals with hearing impairments to communicate with the Foundation about NSF programs, employment or general information. TDD may be accessed at (703) 292-5090 and (800) 281-8749, FIRS at (800) 877-8339.

The National Science Foundation Information Center may be reached at (703) 292-5111.

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**   (703) 292-5111
  (NSF Information Center)**:**

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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; and 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 proposer 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 or other entities needing information regarding applicants or nominees as part of a joint application review process, or in order to coordinate programs or policy; 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," 69 Federal Register 26410 (May 12, 2004), and NSF-51, "Reviewer/Proposal File and Associated Records, " 69 Federal Register 26410 (May 12, 2004). 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 Office of Management and Budget (OMB) control number. The OMB control number for this collection is 3145-0023. Public reporting burden for this collection of information is estimated to average 12 hours per response, including the time for reviewing instructions. Send comments regarding the burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to:

Suzanne H. Plimpton
Reports Clearance Officer
Division of Administrative Services
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