Living Stock Collections for Biological Research (LSCBR)

PROGRAM SOLICITATION
NSF 09-550

REPLACES DOCUMENT(S):
NSF 06-574

National Science Foundation

Directorate for Biological Sciences
Division of Biological Infrastructure

Full Proposal Target Date(s):

July 15, 2009

July 07, 2010

July 06, 2011

First Wednesday in July, Annually Thereafter

IMPORTANT INFORMATION AND REVISION NOTES

A revised version of the *NSF Proposal & Award Policies & Procedures Guide* (PAPPG), NSF 11-1, was issued on October 1, 2010 and is effective for proposals submitted, or due, on or after January 18, 2011. Please be advised that the guidelines contained in NSF 11-1 apply to proposals submitted in response to this funding opportunity. Proposers who opt to submit prior to January 18, 2011, must also follow the guidelines contained in NSF 11-1.

Cost Sharing: The PAPPG has been revised to implement the National Science Board's recommendations regarding cost sharing. Inclusion of voluntary committed cost sharing is prohibited. In order to assess the scope of the project, all organizational resources necessary for the project must be described in the Facilities, Equipment and Other Resources section of the proposal. The description should be narrative in nature and must not include any quantifiable financial information. Mandatory cost sharing will only be required when explicitly authorized by the NSF Director. See the PAPP Guide Part I: *Grant Proposal Guide (GPG)* Chapter II.C.2.g(xi) for further information about the implementation of these recommendations.

Data Management Plan: The PAPPG contains a clarification of NSF's long standing data policy. All proposals must describe plans for data management and sharing of the products of research, or assert the absence of the need for such plans. FastLane will not permit submission of a proposal that is missing a Data Management Plan. The Data Management Plan will be reviewed as part of the intellectual merit or broader impacts of the proposal, or both, as appropriate. Links to data management requirements and plans relevant to specific Directorates, Offices, Divisions, Programs, or other NSF units are available on the NSF website at: http://www.nsf.gov/bfa/dias/policy/dmp.jsp. See Chapter II.C.2.j of the GPG for further information about the implementation of this requirement.

Postdoctoral Researcher Mentoring Plan: As a reminder, each proposal that requests funding to support postdoctoral researchers must include, as a supplementary document, a description of the mentoring activities that will be provided for such individuals. Please be advised that if required, FastLane will not permit submission of a proposal that is missing a Postdoctoral Researcher Mentoring Plan. See Chapter II.C.2.j of the GPG for further information about the implementation of this requirement.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

Living Stock Collections for Biological Research (LSCBR)

Synopsis of Program:

The Living Stock Collections for Biological Research (LSCBR) program supports improvements in and partial operation of existing collections of living organisms (including viruses and bacteriophages) to be used in basic biological research. The program provides support for two types of projects. Short-term projects are one-time awards (up to 36 months) leading to innovative handling of living stocks or to well-defined improvements in existing collections, including those not otherwise supported by LSCBR. Longer-term projects (up to 60 months) help support ongoing operation of collections significant to the NSF research community. Collections receiving longer-term support are expected to receive significant support from user fees or other mechanisms of revenue

generation.

Cognizant Program Officer(s):

- Anne M. Maglia, telephone: (703) 292-8470, email: amaglia@nsf.gov

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

- 47.074 --- Biological Sciences

Award Information

Anticipated Type of Award: Standard Grant or Continuing Grant

Estimated Number of Awards: 2 to 4

Anticipated Funding Amount: $1,000,000 (approximately) will be available for new and renewal LSCBR awards in FY 2009, pending availability of funds.

Eligibility Information

Organization Limit:

Proposals may only be submitted by the following:

- Universities and Colleges - Universities and two- and four-year colleges (including community colleges) accredited in, and having a campus located in the US, acting on behalf of their faculty members. Such organizations also are referred to as academic institutions.
- Non-profit, non-academic organizations: Independent museums, observatories, research labs, professional societies and similar organizations in the U.S. associated with educational or research activities.

PI Limit:

None Specified

Limit on Number of Proposals per Organization:

None Specified

Limit on Number of Proposals per PI:

None Specified

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

- **Letters of Intent:** Not Applicable

- **Preliminary Proposal Submission:** Not Applicable

- **Full Proposals:**
    - Full Proposals submitted via FastLane: NSF Proposal and Award Policies and Procedures Guide, Part I: Grant Proposal Guide (GPG) Guidelines apply. 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.
    - Full Proposals submitted via Grants.gov: NSF Grants.gov Application Guide: A Guide for the Preparation and Submission of NSF Applications via Grants.gov Guidelines apply (Note: The NSF Grants.gov Application Guide is available on the Grants.gov website and on the NSF website at: http://www.nsf.gov/publications/pub_summ.jsp?ods_key=grantsgovguide)

B. Budgetary Information

- **Cost Sharing Requirements:** Inclusion of voluntary committed cost sharing is prohibited.

- **Indirect Cost (F&A) Limitations:** Not Applicable

- **Other Budgetary Limitations:** Not Applicable

C. Due Dates

- **Full Proposal Target Date(s):**

    July 15, 2009

    July 07, 2010

    July 06, 2011

    First Wednesday in July, 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: Standard NSF award conditions apply.

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

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I. INTRODUCTION

Since the 1970s, the National Science Foundation (NSF) has supported the partial operation and improvement of outstanding collections of living organisms through the Living Stock Collections for Biological Research (LSCBR) Program and its predecessors. Such collections have played a key role in the advancement and preservation of knowledge by providing well-characterized and documented experimental organisms to U.S. and foreign researchers at modest cost. The LSCBR program is administered by the Division of Biological Infrastructure with the goal of strengthening infrastructure critical to the conduct of basic research in areas within the purview of the NSF Directorate for Biological Sciences (BIO). Thus, requests for support by the LSCBR program are expected to describe stock collection activities that emphasize maintenance and provision of living organisms (including viruses and bacteriophages) needed for basic research in the biological sciences. In addition to the collected organisms, biological reagents relevant to their study (such as isolated DNA, DNA libraries, antibodies, etc.) may be included in the collection when appropriate. To facilitate public access to collections supported on an ongoing basis by the LSCBR Program, all such collections must have an up-to-date web site that provides information about the contents of the collection and about procedures for ordering strains. In addition to requests for longer-term support of basic collections activities, the LSCBR program accepts requests for short-term support for the development of innovative approaches to handling living stocks, or for one-time improvements in operations of established collections, including collections not otherwise supported by the LSCBR program. Requests for short-term funding to move valuable established collections to a new institutional home, or to consolidate or combine collections are also considered. In general, such requests must include an explicit plan to incorporate the collection into another collection. The LSCBR program does not expect to renew awards for support of these short-term projects. The program does not support establishing new collections. NSF does not support the collection of specimens in order to create a new collection. A strategic plan for the long-term support of these collections should be submitted.

II. PROGRAM DESCRIPTION

The goal of the Living Stock Collections for Biological Research (LSCBR) Program is to partially support the operation and improvement of collections of living organisms (including viruses and bacteriophages) used actively and widely in basic biological research. Thus, the LSCBR Program does not provide ongoing support for collections that are primarily archival or otherwise intended to document biodiversity. While this program encourages the incorporation of biological reagents into collections, it does not

provide significant direct support for the development of such reagents, and only limited support for their storage and distribution. Similarly, this program does not provide funds to conduct research beyond normal and appropriate curatorial efforts. Support for development of biological reagents or for original research by collection staff should be sought from appropriate research programs at the NSF and at other public and private agencies.

In identifying requests that deserve highest priority for funding, the Program will consider the following general characteristics:

- The importance of the collected organism(s) to basic biological research in the US. This could reflect, for example, the utility of the organisms as "model systems" following years of concerted research effort by many investigators.
- The uniqueness of the collection, both within and outside the US.
- The breadth of usage of the collection by the potential user community. Both the types of use and numbers of users are considered to reflect the value of the collection to the research community.
- The relevance of the collection's usage to the goals of the Directorate for Biological Sciences. Thus, collections of organisms whose principal uses are in research areas supported by the NSF are given priority in selecting projects for support.
- The active involvement of a scientifically-qualified collections manager with expertise in handling of the collected class of taxa.
- The location of the collection in an active research environment.
- The availability of all relevant information about the collection via the internet.
- The participation of an active external advisory group whose membership includes current or potential users drawn from areas of research under the purview of the NSF Directorate for Biological Sciences. Such groups play an important role in advising the collection on matters of policy and practice including, for example, user fees and acquisition policies.
- A long-term strategic plan for the collection facility support or disposition.

Potential proposers are strongly encouraged to contact the LSCBR Program Director before beginning the effort of preparing a proposal. Potential proposers are also encouraged to seek support from other appropriate public and private sources of funding.

III. AWARD INFORMATION

NSF anticipates making 2 to 4 standard or continuing grants. The anticipated funding amount is $1 million for new and renewal LSCBR awards in FY 2010. Estimated program budget, number of awards and average award size/duration are subject to the availability of funds. Awards for short-term projects are usually made as standard grants of 12 to 36 months in duration; awards for longer-term projects are usually made as continuing grants of up to 60 months in duration. In general, short-term support is provided for projects with well-defined aims that can be accomplished within the period of the award. Thus, renewal of support should not be expected. Longer-term awards are for collections that, by their nature, are expected to continue as important research resources. Requests for renewal of support of such projects are allowed. Extensive documentation of the value of the collection as a research resource should be provided in the renewal request.

IV. ELIGIBILITY INFORMATION

Organization Limit:

> Proposals may only be submitted by the following:
>
> - Universities and Colleges - Universities and two- and four-year colleges (including community colleges) accredited in, and having a campus located in the US, acting on behalf of their faculty members. Such organizations also are referred to as academic institutions.
> - Non-profit, non-academic organizations: Independent museums, observatories, research labs, professional societies and similar organizations in the U.S. associated with educational or research activities.

PI Limit:

> None Specified

Limit on Number of Proposals per Organization:

> None Specified

Limit on Number of Proposals per PI:

> None Specified

Additional Eligibility Info:

> The LSCBR Program accepts proposals from U.S. colleges, universities and non-profit organizations. Submission of proposals that are similar or identical to proposals submitted to another federal agency is allowed with the prior approval of NSF and of the other agency. Proposers planning such dual submission must contact the LSCBR Program Director in advance.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Full Proposal Preparation Instructions: Proposers may opt to submit proposals in response to this Program Solicitation via Grants.gov or via the NSF FastLane system.

- Full proposals submitted via FastLane: Proposals submitted in response to this program 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 nsfpubs@nsf.gov. Proposers are reminded to identify this program solicitation number 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.

- Full proposals submitted via Grants.gov: Proposals submitted in response to this program solicitation via Grants.gov should be prepared and submitted in accordance with the NSF Grants.gov Application Guide: A Guide for the Preparation and Submission of NSF Applications via Grants.gov. The complete text of the NSF Grants.gov Application Guide is available on the Grants.gov website and on the NSF website at: (http://www.nsf.gov/publications/pub_summ.jsp?ods_key=grantsgovguide). To obtain copies of the Application Guide and Application Forms Package, click on the Apply tab on the Grants.gov site, then click on the Apply Step 1: Download a Grant Application Package and Application Instructions link and enter the funding opportunity number, (the program solicitation number without the NSF prefix) and press the Download Package button. Paper copies of the Grants.gov Application Guide also may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from nsfpubs@nsf.gov.

In determining which method to utilize in the electronic preparation and submission of the proposal, please note the following:

Collaborative Proposals. All collaborative proposals submitted as separate submissions from multiple organizations must be submitted via the NSF FastLane system. Chapter II, Section D.4 of the Grant Proposal Guide provides additional information on collaborative proposals.

This solicitation contains information that supplements the GPG proposal preparation guidelines.

A. Cover Sheet. Begin the title of the proposal with "LSCBR:" followed by the name of the collection.

B. Project Summary (not more than 1 page in length). Provide a brief summary that describes the collection, including the number of species or strains in the collection, the number of samples provided annually, the approximate number of users, and any interesting aspects of the collection or its use. Indicate if this is a long-term or short-term project. The project summary must clearly address in separate statements: (1) the intellectual merit of the proposed collections activities, and (2) the broader impacts of these activities.

C. Project Description. This section describes the project in detail and is limited to 15 pages, including the discussion of prior support.

- *For short-term projects aimed at improving the methodology or technology of stock collection operations,* the presentation should be consistent with that in a research proposal, including specific aims and sufficient technical detail to assess the need for and likely success of the project, and its expected impact on operation of stock collections. The short-term projects can also include technique development for producing back-up stocks to be stored at secondary sites. The anticipated timeline, with milestones as appropriate, should be included.
- *For other short-term projects, including collection relocation or consolidation,* present sufficient detail to assess the need for the activity and the likely outcome if an award is not made. The content of such short-term requests should emphasize topics in items 1 through 7 and item 14 in the following guidelines for descriptions of long-term projects. Information relevant to other items is helpful; however, the suggested extensive detail, especially for cost analysis (item 10), is not required. *Collections requesting short-term support are not required to have an external advisory committee.*
- *For long-term projects,* the project description should describe the current and future operation of the collection in detail, including the long-term sustainability plans. Required lists and tables should be presented in the Supplementary Documents section of the proposal (see below). The project description should include the following:
    1. **Historical perspective and statement of goals**. This introductory section should describe origins of the collection, the goals of its operation, and the areas of research that benefit from use of the collected organisms.
    2. **Description of the collection**. Provide a general summary description, including number of stocks and, where appropriate, number of mutant strains, species, genera, etc. Describe types of services and products other than stocks, if any. The collection must be web-accessible. Provide the Uniform Resource Locator (URL) for the collection's homepage.
    3. **Use of the collection**. Provide summary comments on use of the collection in the last five years, with attention to changing patterns of use, new types of uses and users, etc. Include a table of detailed quantitative information in the supplementary documents section (below). Address any significant improvements made in the last five years, for example, to procedures for ordering, data capturing, user identification, etc.
    4. **Management structure**. Describe the roles, qualifications and responsibilities of the Director of the collection, the collection manager, and any other key personnel. NSF expects that the manager will have a Ph.D. or equivalent research experience. Identify the academic department or other organizational unit in which the collection is located and the organizational official(s) to whom the Director of the collection reports. If extensive, this may be provided as an organizational diagram.
    5. **Acquisition policy**. Describe the policies for addition and removal of stocks; indicate how these reflect the statement of goals in item 1. Estimate the number of stocks added to, or removed from, the collection in each of the last three years. Indicate the number of duplicate or unidentified stocks at the current time. Justify the presence of any duplicates, and describe plans to identify any unknown stocks. Describe the protocol for identifying dead stocks and the procedure for their removal.
    6. **Relationship to similar collections**. Identify other national or foreign collections of the same taxa, if any, and estimate overlap in collection contents. Describe how this collection interfaces with other similar collections worldwide. Include methods for communications between these stock collections organizations. StrainInfo.net is an example of a portal to microbial culture collections worldwide (http://www.strainInfo.net/). This and similar portals for other taxa should be included in the collection website. It is strongly encouraged that the collection register with StrainInfo.net or a similar registry for relevant taxa. The World Federation of Culture Collections (http://www.wfcc.info/index.html) is an example of an international federation that serves as an information network between collections. This Federation and similar federations for other relevant taxa should be consulted when developing coordination and communication plans with other related collections.
    7. **Documentation and ordering.** Describe the use of electronic databases in operation of the collection and in provision of public access to information about the collection, including the frequency with which such public information is updated. Describe the ordering procedure.

8. **Quality control practices.** Describe procedures and practices intended to assure integrity of the individual stocks and other resources, including reducing or eliminating contamination, and steps being taken to assess the quality of service provided to the community. Describe plans to develop a back-up stock protocol (whether as frozen stocks at a secondary location or in another procedure) to ensure stock integrity.

9. **Future goals**. Describe any expected changes in the scope of the collection, in its manner of operation, in staffing, or in facilities. Describe short- and long-term plans for the collection in the event of unanticipated changes in ability of the key personnel to participate.

10. **Cost analysis**. Estimate the staff time and other costs (pro-rata cost of glassware, growth media, cage charges, etc.) required for accession and for yearly maintenance of a typical stock. List the fraction of the annual cost of operation of the collection currently provided by: 1) NSF; 2) Other Federal agencies; 3) User charges; and, 4) Other sources, such as private foundations, endowments, and personal contributions. Estimate the expected change, if any, in this total cost of operation over the period for which funding is requested. *Proposers should anticipate that the fraction of total cost borne by NSF will decrease over time, and that the actual amount of direct NSF support may itself decrease. Thus, a strategic plan for long-term sustainability or disposition of the collection should be included.*

11. **User charges**. Describe the accounting basis or other strategy for establishment of user fees and use of fees to offset operational costs of the collection. Collections with long-term LSCBR support are expected to recover a significant fraction of the cost of operation through user fees. The fees for any additional services or products (i.e., those provided in addition to samples of living stocks from the collection) are expected to reflect the cost to the collection of providing the services or products. In the Supplementary Documents section (see below), provide a current list of all user fees and the date on which these were last changed as part of Table 1.

12. **External advisory committee**. All collections supported on a long-term basis are required to have an external advisory committee that provides guidance to the collection and to the host organization with respect to collection operations and policies, including user fees, new acquisitions, other improvements, long-term plans, etc. The committee should also serve as a resource for user community input into assessment of the quality of services and products. The committee is expected to meet annually, and to provide a written report to the collection's Director following the meeting. The PI should include a summary of the report as part of the collection's annual progress report to NSF. In this section of the project description, outline the functions of the advisory committee and the mechanisms for assuring that the committee broadly represents the research community that uses the collection. The term of service of members and the mechanism for their selection should be described. A list of current membership of the advisory committee should be presented in the Supplementary Documents section as Table 5 (see below). In selecting this committee, the NSF goal for broadening participation should be considered.

13. **Organizational role**. Describe the host organization's long-term plans for maintaining the collection, including a view to the future beyond the period of requested support. Include a financial projection of support from all sources for the first year of operation following termination of the NSF support being requested. Strategic long-term plans are strongly encouraged.

14. **Prior Support** (maximum 5 pages). Briefly describe the outcome of any prior support of the collection by the NSF in the last five years, irrespective of the PI or organization that received the support, and list all publications that resulted. If this is a renewal proposal, state the title, amount of funds received and duration of the award for which renewal is sought. Describe any accomplishments that are not included in the narrative section. *Do not describe the results of other prior support received by the current PI, unless that prior support was intended to improve operation of the collection.* This portion of the Project Description is limited to five pages.

15. Broader impacts of the project should be fully described. For examples of broader impacts, see http://www.nsf.gov/pubs/gpg/broaderimpacts.pdf

16. **Security of Stocks.** Where appropriate, include the institution's policy on security and safety of stock collections.

17. **Intellectual Property Policy.** NSF generally allows grantees to retain principal legal rights to intellectual property developed under NSF support.

D. References Cited.

Provide any references necessary to support the project description (e.g., those cited in discussion of prior support).

E. Budget and Budget Justification.

Provide a budget for each year of requested support. Budgets for short-term projects are limited to 36 months. Long-term projects may request up to 60 months support. Use the budget justification section to explain and justify the need for funds in each budget category. The following direct costs will be considered allowable under the terms of the grant:

1. **Personnel and technical assistance** (non-research).

2. **Limited administrative assistance**.

3. **Equipment**.

4. **Travel**. Include only travel directly related to collection activities. Support for travel to scientific meetings is not provided on long-term awards unless justified as necessary for the collection's operation.

5. **Participant support**. Include funds needed for annual advisory committee meetings (long-term projects only). No honoraria for committee members may be provided from NSF funds.

6. **Other direct costs.** Include cost of materials and supplies, development and maintenance of electronic databases and collection web site, and minor renovations (long-term projects only). In general, funds will not be provided for items that would normally be part of an individual research grant (such as salaries of investigators or research assistants, supplies for research or special equipment for particular research projects), except in the case of short-term projects aimed at improving methods or techniques.

F. Current and Pending Support.

Provide information about current and pending support for the PI and any other key personnel.

G. Biographical Sketches.

Provide a biographical sketch for the PI and for other key personnel (limited to 2 pages per person).

H. Supplementary Documentation.

Provide the following information about use of the collection, using a tabular format for items 1 – 5. These supplementary documents should be attached in Block 11 of the R&R Other Project Information Form.

1. Table 1: Services and categories of products available to users. List user fees associated with stocks and any other individual services or products. If some stocks (or products or services) are priced differentially, indicate the number in each price category. Thus, if some stocks are more expensive than others, indicate the number of stocks at each price.

2. Table 2: Organizational usage of the collection. Show numbers of orders and of stocks sent to U.S. and foreign organizations; if known, categorize types of organizations - academic or non- profit research organizations, industrial, or governmental, internal versus external users, educational versus research, etc. on an annual basis for the past five years.

3. Table 3: Individual usage of the collection. Indicate the total number of users, total number of orders, total number of stocks sent, and total user fees collected in each of the five years covered by Table 2. If the collection provides other products or services, give separate figures for stocks and for these other products or services.

4. Table 4: Top individual users. Provide individual data for top 25 users of the collection in each of the last two full years, including number of orders and of stocks provided to each. If possible, combine usage by a single research group or laboratory. In providing this list, an anonymous identifier (e.g.,'user A' or 'group A') may be assigned to users, *using the same identifier for each user or group from year to year*. Each user's country (U.S., etc.) and organizational type (academic, medical, commercial, governmental) should be indicated.

5. Table 5: Members of External Advisory Committee. Provide a list of the external advising committee members, including length of term, institutional affiliation, area of expertise, and current position. The NSF goal of broadening participation in science should be considered in selecting members of the external advising committee.

6. Other productive use of the collection. For example, provide a list of researchers visiting the facility in the last five years with purpose of visits, organizational affiliation and duration of stay; source of funding. List any courses, workshops, etc. offered by the collection and provide a selected list of publications resulting from research based on the collection.

7. When applicable, a statement confirming a collaboration (as described *only* within the proposal itself) **must** be included if a proposed effort involves a private sector partner or other collaborator, using the following format:

To: NSF LSCBR Coordinator

By signing the below I acknowledge that I am listed as a collaborator, committee member and/or service provider on this LSCBR proposal, entitled "____*proposal title*_____", with _____*PI name*_____ as the Principal Investigator. I agree to perform the tasks assigned to me, as described in the proposal, and I commit to provide or make available the resources therein designated to me.

Signed: _____

Date: _____

8. Provide a statement assuring that all pertinent regulations will be followed in receiving and sending the living stocks. All perishable biological materials must be shipped in compliance with postal regulations. Other applicable regulations may include Public Health Service regulations governing transportation of etiologic agents, the Endangered Species Act of 1973 and the Convention on International Trade in Endangered Species of Wild Fauna and Flora, and the USDA Animal and Plant Health Inspection Service's regulations governing transportation of animal and plant disease agents. For genetically engineered organisms, all pertinent permits must be obtained from appropriate agencies.

B. Budgetary Information

Cost Sharing: Inclusion of voluntary committed cost sharing is prohibited

C. Due Dates

- **Full Proposal Target Date(s):**

  July 15, 2009

  July 07, 2010

  July 06, 2011

  First Wednesday in July, Annually Thereafter

D. FastLane/Grants.gov Requirements

- **For Proposals Submitted Via FastLane:**

  Detailed technical instructions regarding the technical aspects of 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 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.

- **For Proposals Submitted Via Grants.gov:**

Before using Grants.gov for the first time, each organization must register to create an institutional profile. Once registered, the applicant's organization can then apply for any federal grant on the Grants.gov website. The Grants.gov's Grant Community User Guide is a comprehensive reference document that provides technical information about Grants.gov. Proposers can download the User Guide as a Microsoft Word document or as a PDF document. The Grants.gov User Guide is available at: http://www.grants.gov/CustomerSupport. In addition, the NSF Grants.gov Application Guide provides additional technical guidance regarding preparation of proposals via Grants.gov. For Grants.gov user support, contact the Grants.gov Contact Center at 1-800-518-4726 or by email: support@grants.gov. The Grants.gov Contact Center answers general technical questions related to the use of Grants.gov. Specific questions related to this program solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this solicitation.

Submitting the Proposal: Once all documents have been completed, the Authorized Organizational Representative (AOR) must submit the application to Grants.gov and verify the desired funding opportunity and agency to which the application is submitted. The AOR must then sign and submit the application to Grants.gov. The completed application will be transferred to the NSF FastLane system for further processing.

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.

Mentoring activities provided to postdoctoral researchers supported on the project, as described in a one-page supplementary document, will be evaluated under the Broader Impacts criterion.

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:**

In addition to the standard NSF review criteria, reviewers of LSCBR proposals are asked to consider the following:

- Feasibility of a project's aims and, particularly in the case of requests for long-term support, the importance of the collected taxa for basic biological research supported by the NSF BIO programs;
- Size, quality and uniqueness of the collection;especially in regards to other collections worldwide;
- Capability and qualifications of the PI, collections manager, and other staff;
- Management provisions, including acquisitions policy, user fee structure, and external advisory committee;
- Usage of the collection by the scientific community and host organization; and
- Long-term commitment of the host organization to the collection's maintenance and long-term strategic plans for the collection.

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 nsfpubs@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.

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, and a project outcomes report for the general public.

Failure to provide the required annual or final project reports, or the project outcomes report 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. The project outcomes report must be prepared and submitted using Research.gov. This report serves as a brief summary, prepared specifically for the public, of the nature and outcomes of the project. This report will be posted on the NSF website exactly as it is submitted by the PI.

Annual reports for long-term projects should summarize salient features of collection operation over the past year of support. The report must include up-to-date versions of Tables 1 - 5 as described in the Supplementary Documentation section of the proposal. The report must also include a summary of the most recent written report of the external advisory committee, and a summary of the collection's written response to the report, if any. Verbatim copies of the annual report and collection response are not required, but may be provided in lieu of the summaries. Any workshop or course conducted by the collection's staff should be described. Plans for operation of the collection in the coming year, including new acquisitions, date and location of the external advisory committee meeting if known, and any changes in user fees, should be outlined. A discussion of the strategic plan for long-term commitment by the host institution for collections maintenance should also be included.

VIII. AGENCY CONTACTS

General inquiries regarding this program should be made to:

- Anne M. Maglia, telephone: (703) 292-8470, email: amaglia@nsf.gov

For questions related to the use of FastLane, contact:

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

For questions relating to Grants.gov contact:

- Grants.gov Contact Center: If the Authorized Organizational Representatives (AOR) has not received a confirmation message from Grants.gov within 48 hours of submission of application, please contact via telephone: 1-800-518-4726; e-mail: support@grants.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, National Science Foundation Update is a free e-mail subscription service 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 when new publications are issued that match their identified interests. Users can subscribe to this service by clicking the "Get NSF Updates by Email" link on the NSF web site.

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.

ABOUT THE NATIONAL SCIENCE FOUNDATION

The National Science Foundation (NSF) is an independent Federal agency created by the National Science Foundation Act of 1950, as amended (42 USC 1861-75). The Act states the purpose of the NSF is "to promote the progress of science; [and] to advance the national health, prosperity, and welfare by supporting research and education in all fields of science and engineering."

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)**:**

- **TDD (for the hearing-impaired):**   (703) 292-5090

- **To Order Publications or Forms:**

       Send an e-mail to: nsfpubs@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; 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 3145-0058. 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 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
National Science Foundation
Arlington, VA 22230

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