

# **Instrument Development for Biological Research (IDBR)**

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## **Program Solicitation**

**NSF 07-568**

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*Replaces Document(s):*

**NSF 06-570**

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**National Science Foundation**

Directorate for Biological Sciences  
Division of Biological Infrastructure

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

September 12, 2007

August 29, 2008

Last Friday in August, Annually Thereafter

### **REVISION NOTES**

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There have been clarifications and updates, including the following:

- Research to demonstrate the utility of an instrument is no longer permitted
- Iterative improvements to prototype or commercial instruments are discouraged
- Renewals are not encouraged
- There is a limit on the number of proposals that may be submitted by an investigator
- Institutional eligibility has been updated to be consistent with DBI's other programs

### **SUMMARY OF PROGRAM REQUIREMENTS**

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#### **General Information**

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##### **Program Title:**

Instrument Development for Biological Research (IDBR)

##### **Synopsis of Program:**

The Instrument Development for Biological Research (IDBR) Program supports the development of novel instrumentation or instrumentation that has been improved by an order of magnitude or more in some aspects. Supported instruments are anticipated to have a significant impact on the study of biological systems at any level. The IDBR Program also supports the development or major improvement of software for the operation of instruments or the primary analysis of instrument data where these software developments have the effect of improving instrument performance by at least an order of magnitude in some aspects. Proposals are encouraged for proof-of-concept development for entirely novel instrumentation. Proposals are encouraged for instrument developments that are expected to meet a broad

need in the biological community in areas supported by NSF Biology programs. Proposals are encouraged for instrumentation that does not currently exist in the form of a working prototype. In the selection of projects for support, the program emphasizes the development of biological instrumentation that is not clinical or biomedical instrumentation.

**Cognizant Program Officer(s):**

- Robyn Hannigan, IDBR Program Director, Directorate for Biological Sciences, Division of Biological Infrastructure, 615 N, telephone: (703) 292-8470, fax: (703) 292-9063, email: [dbiuid@nsf.gov](mailto:dbiuid@nsf.gov)

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

- 47.074 --- Biological Sciences

**Award Information**

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**Anticipated Type of Award:** Standard Grant or Continuing Grant

**Estimated Number of Awards:** 15

**Anticipated Funding Amount:** \$3,000,000 (approximately) will be available for new IDBR awards in FY 2008, pending availability of funds.

**Eligibility Information**

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**Organization Limit:**

Proposals may only be submitted by the following:

- Proposals may only be submitted by U.S. academic institutions, U.S. non-profit research organizations including museums, research laboratories, professional societies and similar organizations in the U.S. that are directly associated with educational or research activities, and consortia of only the eligible organizations listed here. Separately submitted collaborative proposals from the eligible organizations will also be accepted. Organizations ineligible to submit to this program solicitation may not receive subawards.

**PI Limit:**

None Specified

**Limit on Number of Proposals per Organization:**

None Specified

**Limit on Number of Proposals per PI: 1**

An investigator may submit only one proposal per fiscal year as a principal investigator or co-principal investigator in response to this Program Solicitation. Proposals received in excess of this limit will be returned without review.

**Proposal Preparation and Submission Instructions**

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**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=ggp](http://www.nsf.gov/publications/pub_summ.jsp?ods_key=ggp).
- 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/bfa/dias/policy/docs/grantsgovguide.pdf>)

## B. Budgetary Information

- **Cost Sharing Requirements:** Cost Sharing is not required under this solicitation.
- **Indirect Cost (F&A) Limitations:** Not Applicable
- **Other Budgetary Limitations:** Other budgetary limitations apply. Please see the full text of this solicitation for further information.

## C. Due Dates

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

September 12, 2007

August 29, 2008

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## Proposal Review Information Criteria

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**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

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**Award Conditions:** Standard NSF award conditions apply.

**Reporting Requirements:** Standard NSF reporting requirements apply.

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# I. INTRODUCTION

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Recent advances in the biological sciences have emphasized the importance of new and greatly improved instrumentation. Such instrumentation is a vital component of progress in biological research. For over 20 years, the Directorate for Biological Sciences (BIO) has supported the development and major improvement of instrumentation useful in the conduct of basic research in biology through awards made by its Instrument Development in Biological Research (IDBR) program. Such instrumentation includes, but is not limited to, analytical instruments, sensors, microscopes of various types, and related devices for detection or measurement of biological molecules, structures or phenomena at any level, from the level of individual molecules to the level of whole ecosystems. To be eligible for support through IDBR, projects should aim at providing instruments with new or greatly enhanced performance. "Performance" includes: accuracy, precision, resolution, throughput, flexibility or breadth of application, cost of construction or operation, and user-friendliness. In general, projects whose aim is the combination of individual pieces of equipment are not considered to be instrument development unless there is a significant challenge in achieving the combination.

The development of new instrumentation provides an ideal opportunity for the training of students in multiple disciplines. Therefore, the IDBR program expects that most projects it supports will include provisions for the training or education of undergraduate, graduate and/or postdoctoral students. Therefore, in the selection of projects for support, the program emphasizes projects that will be conducted in academic environments.

The program does not support research or technique development activities, except to the extent these are required as part of the development of the new or improved instrument, or for the testing of its utility. Projects emphasizing the development of new research techniques should be addressed to an appropriate research program. The anticipated uses of the instrumentation to be developed or improved should include areas of research that fall within the scope of the Directorate for Biological Sciences (see BIO Home Page at <http://www.nsf.gov/bio>).

The BIO Directorate supports research and education activities whose goal is improved understanding of fundamental life processes at any level of biological organization, from molecules to ecosystems. Projects aimed at instrumentation whose primary use will be in studies of the etiology, diagnosis or treatment of physical or mental disease, abnormality, or malfunction in human beings or animals, is not supported by IDBR. Similarly, the development or testing of drugs or of procedures for their use is also not eligible for support. Such projects should be addressed to an appropriate program in another NSF Directorate or to another agency.

Projects in which the main portion of the instrument development activity will be subcontracted to a Federally Funded Research and Development Center (FFRDC) or a commercial (for profit) organization are also not eligible for support by IDBR, and should be addressed to an appropriate NSF program or to another agency.

# II. PROGRAM DESCRIPTION

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The IDBR program provides support for development of the following:

- Concept and proof of concept of novel instruments for biological research;
- New instruments that provide new capabilities for detection, measurement, and/or observation of biological phenomena, or that greatly extend currently achievable sensitivity, accuracy or resolution;
- Novel or greatly improved instruments for study of biological systems at any level of organization from molecules to ecosystems;
- Novel or greatly improved software for the operation of instruments, or software that effectively improves instrument sensitivity, accuracy, resolution or speed; and

- New or greatly improved devices for remote sensing of environmental and other information relevant to biological research, including novel software needed to network, operate, and collect data from such sensing devices.

The program also supports workshops in emerging areas of instrumentation and instrument development relevant to areas of biological research supported by the Directorate for Biological Sciences.

Renewal proposals, i.e., those requesting continued support of an ongoing project supported through a previous IDBR award, are accepted. However, the IDBR program's objective is to fund primarily the earliest prototypes of instruments and not the continued development of instruments that are ready for technology transfer and/or biological research. While it is not required that instruments developed under these awards have multiple users, the IDBR program expects that the advances that result from its awards will lead to improved instrumentation that is of use to a broad set of potential users, and is likely to lead to significant advances in biological research.

### **III. AWARD INFORMATION**

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The requested funds and award duration should be commensurate with the proposed activities. There are no specific limits on the amount of funds that may be requested; however, the requested period of support should not exceed 48 months. Funding is available beginning the March following submission. Estimated program budget, number of awards and average award size/duration are subject to the availability of funds.

### **IV. ELIGIBILITY INFORMATION**

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#### **Organization Limit:**

Proposals may only be submitted by the following:

- Proposals may only be submitted by U.S. academic institutions, U.S. non-profit research organizations including museums, research laboratories, professional societies and similar organizations in the U.S. that are directly associated with educational or research activities, and consortia of only the eligible organizations listed here. Separately submitted collaborative proposals from the eligible organizations will also be accepted. Organizations ineligible to submit to this program solicitation may not receive subawards.

#### **PI Limit:**

None Specified

#### **Limit on Number of Proposals per Organization:**

None Specified

#### **Limit on Number of Proposals per PI: 1**

An investigator may submit only one proposal per fiscal year as a principal investigator or co-principal investigator in response to this Program Solicitation. Proposals received in excess of this limit will be returned without review.

### **V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS**

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#### **A. Proposal Preparation Instructions**

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**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](http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg). Paper copies of the GPG may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from [pubs@nsf.gov](mailto:pubs@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/bfa/dias/policy/docs/grantsgovguide.pdf>). 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 [pubs@nsf.gov](mailto:pubs@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.3 of the Grant Proposal Guide provides additional information on collaborative proposals.

Proposals must follow guidelines described in the GPG or NSF Grants.gov Application Guide. The following additions or modifications apply to proposals submitted to this Program:

### 1. **Cover Sheet:**

**FastLane Users:** Indicate the number of this program solicitation in the appropriate box. In the box labeled "For consideration by NSF organizational unit," select "INSTRUMENTAT & INSTRUMENT DEVELOPMENT" from the drop-down list. **Grants.gov Users:** The program solicitation number will be pre-populated by Grants.gov on the NSF Grant Application Cover Page. Grants.gov users should refer to Section VI.1.2. of the NSF Grants.gov Application Guide for specific instructions on how to designate the NSF Unit of Consideration.

The project title should begin with "IDBR:" and be descriptive of the development activity to be pursued. If vertebrate animals or human subjects will be used, check the appropriate box, and provide the date of IRB or IACUC approval. If approval has not been obtained at the time of submission, indicate "pending" or "planned" instead of a date. If needed, such approval may be obtained after proposal review, but approval must be obtained before an award can be made.

### 2. **Project Summary (not more than 1 page in length):**

Provide a clear summary of the planned instrumentation development activity, the type(s) of biological research for which the instrument will be used (either by the Principal Investigator or by future intended users), and the expected significance of the instrument for that research. The summary should be understandable to a scientifically literate reader. As required of all NSF proposals, the project summary must clearly address in separate statements: (1) the intellectual merit of the proposal activity; and (2) the broader impacts resulting from the proposed activity. Additional information about intellectual merit and broader impacts is available below.

### 3. **Project Description:**

Provide a description of the instrument development activity to be pursued. This section may not exceed 15 pages in length. The section **must** cover the following four points:

**Results from Prior NSF Support (not more than 5 pages in length):** Describe the results of any relevant NSF award received by the PI or co-PIs in the last five years. Only describe projects related to the proposed project, if any. This description should discuss the broader impacts of the previous support.

**Development Plan:** Describe the development program to be undertaken, including the design of the

proposed instrument, in detail sufficient to allow assessment of the feasibility of the instrument and the potential success of the project.

**Broader Impacts: Scope of Potential Use:** Provide examples of the types of basic biological research in which the proposed instrument is expected to be of use. Explain specifically why no existing instrumentation will adequately fill the expected role of the proposed instrument. Estimate, where possible, the number and range of users and research areas that would benefit from development of this instrument. Describe plans to disseminate results of the project.

**Other Broader Impacts: Education and Human Resources:** Describe the expected contribution of the project to the education and development of human resources in science and engineering at the undergraduate, graduate, and/or postdoctoral levels. This discussion may include, but is not limited to, student training, course preparation, and seminars. Other expected impacts, such as those on K-12 or public education are also encouraged. The impact on production or enabling of professional scientists and engineers from under-represented groups should be described. Describe any other anticipated benefits to society.

#### 4. **References Cited:**

Provide references as specified in the *GPG* or *NSF Grants.gov Application Guide*.

#### 5. **Biographical Sketches:**

Provide biographical sketches for each of the senior personnel, professional staff, and any named postdoctoral students in the format specified in the *GPG* or *NSF Grants.gov Application Guide*. Each biographical sketch is limited to two pages in length.

#### 6. **Budgets:**

Provide a budget as specified in the *GPG* or *NSF Grants.gov Application Guide*. Among other items, funds for personnel, shop costs, and indirect costs may be requested. The period of support requested should not exceed 48 months. The budget justification, which must not exceed three pages, should itemize and explain all project costs.

#### 7. **Current and Pending Support:**

Provide information on all current and pending support for all senior personnel and for any other personnel for whom a biosketch is included.

#### 8. **Facilities, Equipment and Other Resources:**

Provide a facilities statement as described in the *GPG* or *NSF Grants.gov Application Guide*.

#### 9. **Supplementary Documents:**

When applicable, include documentation of collaborative arrangements discussed in the proposal. No general letters of endorsement may be included.

10. **List of Suggested Reviewers (optional):** Proposers may include a list of suggested reviewers whom they believe are well qualified to review the proposal. Proposers may also include a list of individuals who they would prefer not review the proposal. The form for this purpose is provided under **Single Copy Documents**.

#### *PROPOSAL SUBMISSION*

The **target date** for submitting proposals to the IDBR program is the **last Friday in August annually**. Proposals received by the target date are considered by an Advisory Panel that meets approximately 3-4 months following the target date.

## **B. Budgetary Information**

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**Cost Sharing:** Cost sharing is not required under this solicitation.

**Other Budgetary Limitations:** Projects of up to 48 months duration are supported.

## C. Due Dates

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

September 12, 2007

August 29, 2008

Last Friday in August, Annually Thereafter

## D. FastLane/Grants.gov Requirements

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- **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](mailto: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](mailto: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

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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

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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:**

In addition, reviewers are also asked to consider the following:

- feasibility of the proposed instrument design, including the likelihood of achieving expected performance;
- appropriateness of the project to the goals of the IDBR program, including the likely impact of the proposed instrument or software on biological research;
- adequacy and justification for proposed budget and timeline;
- the adequacy of the investigators' current research grants to support biological research that will utilize the instrument, and/or the developer's plans and capacity to transfer the technology to commercial development or to wider public research use;
- the adequacy of the mechanical and electronics shops or of subcontractors offering equivalent services, as appropriate; and
- potential of the project for the integration of research and education, and for the broadening of participation of members of underrepresented groups or underserved communities.

As part of the consideration of the merit of the research, the reviewers examine the importance of any new knowledge to be gained during the development project, of the biological research for which the instrument is eventually intended. As a part of the consideration of the effect on infrastructure, the reviewers consider the likely importance of the instrument to the biological research community.

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**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**

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### **A. Notification of the Award**

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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**

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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 Federal Demonstration Partnership (FDP) Terms and Conditions \* and (5) any announcement or other NSF issuance that may be incorporated by reference in the award letter. Cooperative 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/general\\_conditions.jsp?org=NSF](http://www.nsf.gov/awards/managing/general_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](mailto: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](http://www.nsf.gov/publications/pub_summ.jsp?ods_key=aag).

### **C. Reporting Requirements**

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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.

## VIII. AGENCY CONTACTS

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General inquiries regarding this program should be made to:

- Robyn Hannigan, IDBR Program Director, Directorate for Biological Sciences, Division of Biological Infrastructure, 615 N, telephone: (703) 292-8470, fax: (703) 292-9063, email: [dbiuid@nsf.gov](mailto:dbiuid@nsf.gov)

For questions related to the use of FastLane, contact:

- FastLane Help Desk, telephone: 1-800-673-6188; e-mail: [fastlane@nsf.gov](mailto:fastlane@nsf.gov).
- Jessie Brown, Science Assistant, Directorate for Biological Sciences, Division of Biological Infrastructure, telephone: (703) 292-8470, fax: (703) 292-9063, email: [dbiuid@nsf.gov](mailto:dbiuid@nsf.gov)
- Hou-Ming Fung, telephone: (703) 292-4507, email: [hfung@nsf.gov](mailto:hfung@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](mailto:support@grants.gov).

## IX. OTHER INFORMATION

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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>.

## ABOUT THE NATIONAL SCIENCE FOUNDATION

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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."

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