

# Cognitive Neuroscience

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## PROGRAM SOLICITATION

NSF 06-557

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*REPLACES DOCUMENT(S):*

NSF 02-031

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National Science Foundation

Directorate for Social, Behavioral & Economic Sciences  
Division of Behavioral and Cognitive Sciences

### Full Proposal Target Date(s):

July 14, 2006

July, Annually Thereafter

January 14, 2007

January, Annually Thereafter

## REVISION NOTES

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A revised version of the *NSF Proposal & Award Policies & Procedures Guide* (PAPPG), [NSF 09-1](#), was issued on October 1, 2008 and is effective for proposals submitted on or after January 5, 2009. Please be advised that the guidelines contained in [NSF 09-1](#) apply to proposals submitted in response to this funding opportunity. Proposers who opt to submit prior to January 5th, 2009, must also follow the guidelines contained in [NSF 09-1](#).

One of the most significant changes to the PAPPG is implementation of the mentoring provisions of the America COMPETES Act. Each proposal that requests funding to support postdoctoral researchers must include, as a separate section within the 15-page project description, a description of the mentoring activities that will be provided for such individuals. Proposals that do not include a separate section on mentoring activities within the Project Description will be returned without review (see the PAPP Guide Part I: *Grant Proposal Guide* Chapter II.C.2.d for further information)

## SUMMARY OF PROGRAM REQUIREMENTS

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### General Information

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#### Program Title:

Cognitive Neuroscience

#### Synopsis of Program:

The Cognitive Neuroscience Program seeks highly innovative and interdisciplinary proposals aimed at advancing a rigorous understanding of how the human brain supports thought, perception, affect, action, social processes, and other aspects of cognition and behavior, including how such processes develop and change in the brain and through time.

#### Cognizant Program Officer(s):

- Stacia Friedman-Hill, Program Director, 995 N, telephone: (703) 292-8121, email: [sfriedma@nsf.gov](mailto:sfriedma@nsf.gov)
- Ping Li, Program Director, 995 N, telephone: (703) 292-8643, email: [p-li@nsf.gov](mailto:p-li@nsf.gov)
- Maurice Dues, Program Assistant, 995 N, telephone: (703) 292-7311, email: [mdues@nsf.gov](mailto:mdues@nsf.gov)

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

- 47.075 --- Social Behavioral and Economic Sciences

## Award Information

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

**Estimated Number of Awards:** 15 to 40 each year

**Anticipated Funding Amount:** \$5,000,000 - annually, pending availability of funds.

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## Eligibility Information

### Organization Limit:

None Specified

### PI Limit:

None Specified

### Limit on Number of Proposals per Organization:

None Specified

### Limit on Number of Proposals per PI:

None Specified

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## 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](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/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:** Not Applicable

### C. Due Dates

- **Full Proposal Target Date(s):**
  - July 14, 2006
  - July, Annually Thereafter
  - January 14, 2007
  - January, Annually Thereafter

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## Proposal Review Information Criteria

**Merit Review Criteria:** National Science Board approved criteria apply.

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## Award Administration Information

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

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

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## I. INTRODUCTION

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The National Science Foundation announces the area of Cognitive Neuroscience within the Division of Behavioral and Cognitive Sciences in the Directorate for Social, Behavioral, and Economic Sciences.

Cognitive neuroscience has emerged in the last decade as an intensely active and influential discipline, forged from interactions among the cognitive sciences, neurology, neuroimaging (including physics and statistics), physiology, neuroscience, psychiatry, and other fields. Of particular importance for this discipline have been new methods for non-invasive functional neuroimaging of humans performing psychological tasks. As this field is reaching maturity, the National Science Foundation intends for the new cognitive neuroscience emphasis to spur the development of highly novel techniques and models directed toward enabling basic scientific understanding of a broad range of issues involving brain, cognition, and behavior. The emphasis at NSF will be placed on integration of the cognitive sciences, social and economic sciences, and engineering in service of insights into healthy functions of brain, cognition, and behavior.

The cross-disciplinary integration and exploitation of new techniques in cognitive neuroscience has generated a rapid growth in significant scientific advances. Research topics have included sensory processes (including olfaction, thirst, multi-sensory integration), higher perceptual processes (for faces, music, etc.), higher cognitive functions (e.g., decision-making, reasoning, mathematics, mental imagery, awareness), language (e.g., syntax, multi-lingualism, discourse), sleep, affect, social processes, learning, memory, attention, motor, and executive functions. Cognitive neuroscientists further clarify their findings by examining developmental and transformational aspects of such phenomena across the span of life, from infancy to late adulthood, and through time.

New frontiers in cognitive neuroscience research have emerged from investigations that integrate data from a variety of techniques. One very useful technique has been neuroimaging, including positron emission tomography (PET), functional magnetic resonance imaging (fMRI), magnetoencephalography (MEG), optical imaging (near infrared spectroscopy or NIRS), anatomical MRI, and diffusion tensor imaging (DTI). A second class of techniques includes physiological recording such as subdural and deep brain electrode recording, electroencephalography (EEG), event-related electrical potentials (ERPs), and galvanic skin responses (GSRs). In addition, stimulation methods have been employed, including transcranial magnetic stimulation (TMS), subdural and deep brain electrode stimulation, and drug stimulation. A fourth approach involves cognitive and behavioral methods, such as lesion-deficit neuropsychology and experimental psychology. Other techniques have included genetic analysis, molecular modeling, and computational modeling. The foregoing variety of methods is used with individuals in healthy, neurological, psychiatric, and cognitively-impaired conditions. The data from such varied sources can be further clarified by comparison with invasive neurophysiological recordings in non-human primates and other mammals.

Findings from cognitive neuroscience can elucidate functional brain organization, such as the operations performed by a particular brain area and the system of distributed, discrete neural areas supporting a specific cognitive, perceptual, motor, or affective operation or representation. Moreover, these findings can reveal the effect on brain organization of individual differences (including genetic variation), plasticity, and recovery of function following damage to the nervous system.

Hypotheses springing from the data of a cognitive science, social, developmental, or life span study can now in some instances be constrained by brain-based data. Strategies for collecting brain-based data that bear on cognitive/behavioral hypotheses include but are not limited to the following four examples. Other powerful strategies are expected to evolve in the future.

- First, if a pattern of neural activity can be linked to a particular cognitive process, the presence of that pattern can be used as a marker of that cognitive process in studies of other mental performances.
- Second, data from studies of stimulus adaptation during neuroimaging can elucidate the character of mental representations in a particular neural system. Thus, as in the "looking time" paradigms used with infants, the neural sensitivity to the "sameness" of stimuli can be used to provide rich descriptions of equivalence classes, invariances, and non-invariances for neural representations in each cortical region.
- A third example of using brain data for evaluating cognitive hypotheses is experiments in which behavioral success on a given task is correlated with the intensity of a neuroimaging signal in a specific brain area. Such relationships between cognitive performance and neural activity are important indicators of a necessary relationship between a brain area and a component of cognitive/behavioral processing.

- Fourth, hypotheses derived from behavioral data suggesting separable processes can be evaluated with respect to the functional brain organization implied by cognitive neuroscience findings. If a given theory hypothesizes that two specific cognitive states are supported by the same underlying process, but an alternative assumes those states are supported by different processes, data from cognitive neuroscience might favor one account. Neuroimaging data from healthy humans can be refined by comparison with findings from studies of cognitive/behavioral impairments exhibited either by humans with discrete lesions (stroke patients), humans with implanted deep brain stimulators, healthy humans with transient neural disruptions (via TMS), or humans stimulated by a pharmacological agent.

Moreover, cognitive neuroscience also can elucidate the duration and sequencing of sub-processes, for example, by integrating high temporal resolution MEG data with high spatial resolution fMRI within subject and task. Such finely calibrated data can then inform cognitive and behavioral process models. Finally, subsequent comparisons of brain organization across species may allow the neural basis of such processes to be understood in a biological context.

## II. PROGRAM DESCRIPTION

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The Cognitive Neuroscience program seeks highly innovative proposals aimed at advancing a rigorous understanding of how the human brain supports thought, perception, affect, action, social processes, and other aspects of cognition and behavior. Topics may bear on core functions such as sensory, learning, language, reasoning, emotion, and executive processes, or more specialized processes such as empathy, creativity, representation of self and other, or intentionality, among many other possibilities. Topics may also include how such processes develop and change in the brain.

The program is particularly interested in supporting the development of new techniques and technologies for recording, analyzing, and modeling complex brain activity. Such projects should include a plan for sharing new software and other technologies with the research community at large.

Studies of disease states (e.g., brain damaged patients) may be components of projects supported by this program. However, the emphasis in such projects must be to advance basic scientific understanding of neural mechanisms, and not on disease etiology, diagnosis, or treatment.

The program also intends to foster projects that integrate perspectives across disciplines, e.g., from the cognitive sciences, developmental sciences, biology, computer science, engineering, education, anthropology, physics, mathematics and statistics. For example, projects that involve collaborations among individuals with expertise in one of the cognitive sciences, neuroimaging, neural microcircuitry, and modeling complex systems are strongly encouraged. Other interdisciplinary emphases are also of keen interest.

Examples of appropriate grant proposals include, but are not be limited to, the following. It is to be expected that scientific advances will overtake many of the following issues, and that other research and development matters will emerge as key enablers to progress in basic cognitive neuroscience.

- Approaches addressing research questions with a novel range of techniques (e.g., using neuroimaging, lesion-deficit data, and computational modeling).
- Hypotheses based on cognitive/behavioral/social/developmental research that lead to tests either of systems level or neuro-computational models of psychological processes. The computational models should involve vertical integration over realistic neural circuitry at specified scales.
- Development of new methods for acquisition-time representation of functional neuroimaging data, e.g., providing output which can be used to control online continuous, experimental manipulations of behavioral/cognitive (stimulus) variables.
- Study of the relation between cognitive/behavioral performance and structural features of brain such as white/gray matter ratio, neurotransmitter sites, connectivity maps, unfolded topological models of cortex, morphology, or diffusion tensor imaging.
- Integrated use of techniques involving both human and animal models to provide convergent evidence about a specific research problem (e.g., the neural codes for perceptual representations, the role of endogenous neurochemicals in social bonding).
- Development of quantitative techniques for meta-analysis and modeling of functional neuroimaging data with respect to localization, temporal dynamics, and componential modeling of cognitive/behavioral processes.
- Neuroimaging of the infant and child brain for comparison with adults in order to understand the development of functional brain organization.
- Development of new methods for characterizing the morphology of activation clusters in neuroimaging data (going beyond the stereotactic location of peak activation).
- Comparative gene expression studies in nonhuman primates of the neural regions governing higher cognitive functions within a biological framework.
- Study of the development and character of specialization of brain areas for particular cognitive, perceptual, affective, and action processes.
- Development of new techniques for integrating independent measurements of the dynamic interactions in time and space of specific neural activity.
- Mathematical analyses of stable individual differences in brain organization (e.g., modeling individual differences in localized neural activity for elementary psychological operations).
- Adaptation of advanced experimental psychology methods for adults and children afflicted with neurological or cognitive impairments in order to characterize more fully the effects of dysfunctions of specific brain areas, clarifying thereby the functions of those areas. (For instance, do brain areas compromised by Parkinson's Disease support non-motor cognitive or executive functions?)
- The effect of environmental factors (impoverishment or enrichment) on the development and function of specific brain areas.

- Development of effective techniques for mapping receptor/ligand binding profiles during cognitive functions such as working memory, selective attention, and implicit memory in healthy humans.

## FUNDING OPPORTUNITIES

1. **Individual Investigator Research Projects.** Many research topics are studied most effectively by individual research scientists or by small teams of collaborating investigators. Investigators are invited to submit proposals that focus on cognitive neuroscience topics, including but not limited to those illustrated above.
2. **Workshops.** Workshops will be supported that bring together diverse scientific partners around specific topics. Meetings will be focused on topics that can benefit from intensive small group discussions. It is anticipated that most workshops will require \$15,000-\$20,000 of support for 12 months, including indirect costs. However, larger requests will also be considered.

## III. AWARD INFORMATION

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Estimated program budget (of about \$5,000,000 annually), number of awards, and average award size/duration are subject to the availability of funds. It is anticipated that about 15 - 40 awards will be made annually as standard or continuing grants.

## IV. ELIGIBILITY INFORMATION

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### Organization Limit:

None Specified

### 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 categories of proposers identified in the [Grant Proposal Guide](#) are eligible to submit proposals under this program announcement/solicitation.

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

## 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.

## B. Budgetary Information

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

## C. Due Dates

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

July 14, 2006

July, Annually Thereafter

January 14, 2007

January, 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.

## B. Review and Selection Process

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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 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](http://www.nsf.gov/awards/managing/award_conditions.jsp?org=NSF). Paper copies may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from [pubs@nsf.gov](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:

- Stacia Friedman-Hill, Program Director, 995 N, telephone: (703) 292-8121, email: [sfriedma@nsf.gov](mailto:sfriedma@nsf.gov)
- Ping Li, Program Director, 995 N, telephone: (703) 292-8643, email: [p-li@nsf.gov](mailto:p-li@nsf.gov)
- Maurice Dues, Program Assistant, 995 N, telephone: (703) 292-7311, email: [mdues@nsf.gov](mailto:mdues@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).

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."

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**  
(NSF Information Center): (703) 292-5111
- **TDD (for the hearing-impaired):** (703) 292-5090
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