Joint NSF/NIH Initiative to Support Collaborative Research in Computational Neuroscience (CRCNS)

Program Solicitation
NSF 02-018

NATIONAL SCIENCE FOUNDATION
   DIRECTORATE FOR BIOLOGICAL SCIENCES
   DIRECTORATE FOR COMPUTER AND INFORMATION SCIENCE AND
   ENGINEERING
   DIRECTORATE FOR ENGINEERING
   DIRECTORATE FOR SOCIAL, BEHAVIORAL, AND ECONOMIC SCIENCES

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   NATIONAL INSTITUTE ON DEAFNESS AND OTHER COMMUNICATION
   DISORDERS
   NATIONAL INSTITUTE ON ALCOHOL ABUSE AND ALCOHOLISM
   NATIONAL EYE INSTITUTE

LETTER OF INTENT DUE DATE(S) (*required*): **December 14, 2001**
FULL PROPOSAL DEADLINE(S): February 4, 2002

NATIONAL SCIENCE FOUNDATION

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SUMMARY OF PROGRAM REQUIREMENTS

GENERAL INFORMATION

Program Title: Joint NSF/NIH Initiative to Support Collaborative Research in Computational Neuroscience (CRCNS)

Synopsis of Program: The most exciting and difficult challenge facing neuroscientists is to understand the functions of complex neurobiological systems. Computational neuroscience provides a theoretical foundation and set of technological approaches that may enhance our understanding of nervous system function by providing analytical and modeling tools that describe, traverse and integrate different levels of organization, spanning vast temporal and spatial scales. Computational approaches are needed in the study of neuroscience as the requirement for comprehensive analysis and interpretation of complex data sets becomes increasingly important. Collaborations among computer scientists, cognitive scientists, engineers, theoreticians and neuorobiologists are imperative to advance our understanding of the nervous system.

Participating Directorates of the National Science Foundation (NSF) and the Institutes of the National Institutes of Health (NIH) (see cover list) plan to support interdisciplinary research in computational neuroscience. Both agencies recognize the need for research that focuses on integrating computational models and methods with neuroscience. This solicitation is designed to encourage new and existing collaborations at this interface.

Cognizant Program Officer(s):

- Dr. Mita Desai, Program Director, Division of Experimental and Integrative Activities, Suite 565S, telephone: 703-292-8909, e-mail: mdesai@nsf.gov.

- Dr. Christopher Platt, Program Director, Division of Integrative Biology and Neuroscience, Suite 685, telephone: 703-292-8423, e-mail: cplatt@nsf.gov.

- Dr. Gary W. Strong, Program Director, Division of Experimental and Integrative Activities, Suite 565S, telephone: 703-292-8909, e-mail: gstrong@nsf.gov.

- Dr. Lawrence Parsons, Program Director, Division of Behavioral and Cognitive Sciences, Suite 995, telephone: 703-292-8740, e-mail: lparsons@nsf.gov.

- Dr. Bruce Hamilton, Program Director, Division of Bioengineering and Environmental Systems, Suite 565S, telephone: 703-292-7066, e-mail: bhamilto@nsf.gov.

- Dr. Eugene Bruce, Program Director, Division of Integrative Biology and Neuroscience, Suite 685, telephone: 703-292-8413, e-mail: ebruce@nsf.gov.

- Dr. Rajinder Khosla, Acting Director, Division of Electrical & Communications Systems, Suite 675, telephone: 703-292-8339, e-mail: rkhosla@nsf.gov.

- Dr. Sohi Rastegar, Program Director, Division of Engineering Education and Centers, Suite 585, telephone: 703-292-7946, e-mail: srastega@nsf.gov.

- Dr. Barry Davis, Director, Taste and Smell Programs, NIDCD, telephone: 301-402-3464, e-mail: barry_davis@nih.gov.

- Dr. Dennis Glanzman, Chief, Theoretical and Computational Neuroscience Research Program, NIMH, telephone: 301-443-1576, e-mail: glanzman@heliz.nih.gov.

- Dr. Yuan Liu, Director, Channels, Synapses, and Circuits Program, NINDS, telephone: 301-496-1917, e-mail: liuyuan2@ninds.nih.gov.

- Dr. Antonio Noronha, Chief, Neurosciences and Behavioral Research Branch, NIAAA, telephone: 301-443-7722, e-mail: anoronha@willco.niaaa.nih.gov.

- Dr. David Shurtleff, Deputy Director for Programs, NIDA, Division of Neuroscience and Behavioral Research, telephone: 301-443-1887, e-mail: david_shurtleff@nih.gov.

- Dr. Judith Finkelstein, Program Director, Sensory/Motor Disorders of Aging Programs, NIA, telephone: 301-496-9350, e-mail: jf119k@nih.gov.

- Dr. Michael Oberdorfer, Program Director, Visual Neuroscience Program, NEI, telephone: 301-496-5301, e-mail: oberderfer@nei.nih.gov.

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

- 47.074 --- Biological Sciences

- 47.070 --- Computer and Information Science and Engineering

- 47.041 --- Engineering

- 47.075 --- Social, Behavioral and Economic Sciences

- 93.242 --- NIMH

- 93.853 --- NINDS

- 93.279 --- NIDA

- 93.866 --- NIA

- 93.173 --- NIDCD

- 93.273 --- NIAAA

- 93.867 --- NEI

ELIGIBILITY INFORMATION

- **Organization Limit:** None

- **PI Eligibility Limit:** None

- **Limit on Number of Proposals:** None

AWARD INFORMATION

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

- **Estimated Number of Awards:** 20-25

- **Anticipated Funding Amount:** $7.0 Million in FY 2002 ($3.0 Million from NSF and $4.0 Million from NIH), subject to availability of funds. Award sizes are expected to range from $100,000 to $500,000 per year with durations of 3-5 years.

PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

- **Letters of Intent:** Submission of Letters of Intent is required. Please see the full program announcement/solicitation for further information.

- **Full Proposals:** Supplemental Preparation Guidelines

    - The program announcement/solicitation contains supplements to the standard Grant Proposal Guide (GPG) proposal preparation guidelines. Please see the full program announcement/solicitation for further information.

B. Budgetary Information

- **Cost Sharing Requirements:** Cost Sharing is not required.

- **Indirect Cost (F&A) Limitations:** None

- **Other Budgetary Limitations:** Other budgetary limitations apply. Please see the full program announcement/solicitation for further information.

C. Deadline/Target Dates

- **Letters of Intent (*required*):** December 14, 2001

- **Preliminary Proposals (*optional*):** None

- **Full Proposal Deadline Date(s):** February 4, 2002

D. FastLane Requirements

- **FastLane Submission:** Required

- **FastLane Contact(s):**

  - Fastlane user support services, e-mail: fastlane@nsf.gov.

PROPOSAL REVIEW INFORMATION

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

AWARD ADMINISTRATION INFORMATION

- **Award Conditions:** Additional award conditions apply. Please see the program announcement/solicitation for further information.

- **Reporting Requirements:** Additional reporting requirements apply. Please see the full program announcement/solicitation for further information.

I. INTRODUCTION

Revolutionary opportunities have emerged for computationally driven advances in neuroscience research. These opportunities are recognized by the National Science Foundation (NSF), as well as by the National Institutes of Health (NIH). Research supported by the NSF in the computational and biological sciences and engineering, along with their ties to related research communities, and by the NIH in biological and biomedical fields make computational neuroscience an area where cooperation between the two agencies is appropriate.

The most exciting and difficult challenge facing neuroscientists is to understand the functions of complex neurobiological systems, i.e., how the elements of the nervous system execute computational tasks, integrate multiple inputs, and produce complex outputs. These elements and subsystems exist at all levels of organization, from the genetic determinants of protein structure to the complex interplay of individual neurons, neural circuits and systems in orchestrating behavior. Disorders of the nervous system are also associated with diverse and complex neurobiological changes leading to profound alterations at all levels of organization. We have seen a recent and dramatic increase in our knowledge of the genes, molecules and patterns of neural activity that control key biological events, but similar advances have not yet come about in our understanding of the computational principles that govern these dynamic changes in the nervous system.

Computational neuroscience provides a theoretical foundation and set of technological approaches that may enhance our understanding of nervous system function by providing analytical and modeling tools that describe, traverse and integrate different levels of organization, spanning vast temporal and spatial scales. Computational approaches are needed in the study of neuroscience as the requirement for comprehensive analysis and interpretation of complex datasets becomes increasingly important. Collaborations among computer scientists, engineers, mathematicians, theoreticians and neuroscientists, are imperative to advance our understanding of the nervous system.

II. PROGRAM DESCRIPTION

Under this solicitation, the participating NSF Directorates and NIH Institutes (here in called NSF/NIH units in this document) request applications for research projects in computational neuroscience. In general, appropriate scientific areas of investigations are those that are currently supported by or related to the participating NSF and NIH units. Some specific examples are given below. Questions concerning a particular project's focus, direction and relevance to a participating funding unit should be addressed to the appropriate person in the list of NSF and NIH contacts.

Each of the NSF/NIH units participating in this solicitation has a commitment to developing and supporting computational neuroscience research for the purpose of advancing the understanding of the biomedical questions relevant to the missions of the agencies.

Assurance of Collaborative Research Effort Across Scientific Disciplines

The driving principle behind this program solicitation is the recognition that projects crossing traditional academic interdisciplinary boundaries often bring about increased productivity and creativity when collaborative efforts include participation by scientists and engineers bringing their experience and training from widely varying backgrounds. Such interdisciplinary collaborations are required and should be demonstrated in the grant proposal, for example, by naming a co-investigator with academic credentials and appointment in an area different from that of the principal investigator, or by other means. A typical research collaboration might include a computer scientist and a neurobiologist. This interdisciplinary approach can also be demonstrated by a single investigator with appropriate multidisciplinary expertise. Proposals should describe interdisciplinary work to be done. Applications that are not clearly collaborative and/or interdisciplinary in nature will be returned without review.

The computational research that will be supported under this initiative must impact on, and relate to biological processes, and optimally provide hypotheses testable in biological studies. It is expected that: 1) applications will include collaborations between computational and/or modeling experts, and neuroscientists; 2) the collaboration will involve a dynamic and, possibly, a protracted period of model development and refinement, and intense interaction between computational and theoretical modelers and experimentalists; 3) there will be a need for continued and sustained interaction as new experimentally based information becomes available, and as models begin to shape future experimentation; and 4) the development and testing of new models will provide a framework for the design of experiments and the generation of new hypotheses that can help to reveal functional mechanisms underlying both normal and diseased states of the nervous system.

The following is a list of example areas of research that are appropriate under this solicitation. Research activities and computational approaches are supported at all levels of organization including molecular, cellular, systems, behavior and theory-based development studies. These examples are illustrative of areas of research that would be appropriate under this solicitation.

• Develop explanatory, predictive and informative models and simulations of normal and abnormal functions of the nervous system and related disorders.

• Develop and improve mathematical, statistical and other quantitative analyses of research related to behavioral and cognitive neuroscience.

• Develop theoretical and computational approaches to delineate and understand neural circuits.

• Develop and improve algorithms for designing of experiments and analyzing data related to genomic and proteomic and other high-throughput technologies.

• Develop and improve algorithms for designing of experiments and analyzing data related to structural and functional brain mapping technologies.

• Develop and improve algorithms for designing of experiments and analyzing data related to normal biological rhythms and time courses of pathophysiological processes.

Examples of topics amenable to these approaches include but are not limited to the following:

• Structural and functional relationship of neuronal specific molecules, such as ion channels and neurotransmitter receptors, neural trophic factors;
• Neurotransmission, neuromodulation, and neural plasticity;
• Mechanisms underlying neuronal cell growth, cell death, and neurodegenerative disorders;
• Neurodevelopment and regeneration;
• Normal and abnormal sensory processing (vision, audition, olfaction, taste, balance, proprioception and somatosensation);
• Motor control mechanisms and motor integration;
• Neurological disorders;
• Mental health related disorders;
• Alcohol and drug abuse related disorders;
• Aging related disorders; and
• Cognitive functions and dysfunction.

III. ELIGIBILITY INFORMATION

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

IV. AWARD INFORMATION

It is estimated that approximately $7.0 Million ($3.0 Million from NSF and $4.0 Million from NIH) will be available for this competition. Award sizes are expected to range from $100,000 to $500,000 per year with durations of 3-5 years. Estimated program budget, number of awards and average award size/duration are subject to the availability of funds.

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

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Letters of Intent: Should be submitted via email at crcns@nsf.gov by December 14, 2001.

Letters of intent should be sent from the prospective PI by email to crcns@nsf.gov, and should contain the PI and the co-PI's names, a list of possible participating institutions, a possible title, and not more than 500 words to describe the work enough to permit intelligent choice of reviewers. Letters of intent will not be evaluated or used to decide on funding. They are requested to assist NSF and NIH in planning the review process. The submission of letters of intent enables NSF to begin choosing panelists before the proposal submission deadline.

Full Proposal:

Proposals submitted in response to this program announcement/solicitation should be prepared and submitted in accordance with the general guidelines contained in the NSF *Grant Proposal Guide* (GPG). The complete text of the GPG is available electronically on the NSF Web Site at: http://www.nsf.gov/cgi-bin/getpub?gpg. Paper copies of the GPG may be obtained from the NSF Publications Clearinghouse, telephone (301) 947-2722 or by e-mail from pubs@nsf.gov.

Proposal Titles: To assist NSF staff in sorting proposals for review, proposal titles should begin with "CRCNS:"

Proposers must must select the CISE Directorate/ EIA Division for consideration of your proposal.

Proposers are reminded to identify the program solicitation number (NSF 02-018) in the program announcement/solicitation block on the proposal Cover Sheet (NSF Form 1207). Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Failure to submit this information may delay processing.

B. Budgetary Information

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

Indirect Cost (F&A) Limitations: None

Other Budgetary Limitations: Budget requests are limited to $500,000 per year.

C. Deadline/Target Dates

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

Letters of Intent (*required*): December 14, 2001
Full Proposals *by 5:00 PM local time*: February 4, 2002

D. FastLane Requirements

Proposers are required to prepare and submit all proposals for this Program Solicitation through the FastLane system. Detailed instructions for proposal preparation and submission via FastLane are available at: http://www.fastlane.nsf.gov/a1/newstan.htm. For FastLane user support, call 1-800-673-6188 or e-mail fastlane@nsf.gov.

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 certifications within five working days following the electronic submission of the proposal. Further instructions regarding this process are available on the FastLane website at: http://www.fastlane.nsf.gov.

VI. PROPOSAL REVIEW INFORMATION

A. NSF Proposal Review Process

Reviews of proposals submitted to NSF are solicited from peers with expertise in the substantive area of the proposed research or education project. These reviewers are selected by Program Officers charged with the oversight of the review process. NSF invites the proposer to suggest, at the time of submission, the names of appropriate or inappropriate reviewers. Care is taken to ensure that reviewers have no conflicts with the proposer. Special efforts are made to recruit reviewers from non-academic institutions, minority-serving institutions, or adjacent disciplines to that principally addressed in the proposal.

Proposals will be reviewed against the following general review criteria established by the National Science Board. Following each criterion are potential considerations that the reviewer may employ in the evaluation. These are suggestions and not all will apply to any given proposal. Proposers are reminded that both the intellectual merit and the broader impacts of the work to be accomplished should be addressed. While reviewers are expected to address both merit review criteria, each reviewer will be asked to address only considerations that are relevant to the proposal and for which he/she 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 and original concepts? How well conceived and organized is the proposed activity? Is there sufficient access to resources?

What are the broader impacts of the proposed activity?

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

Principal Investigators should address the following elements in their proposal to provide reviewers with the information necessary to respond fully to both of the above-described NSF merit review criteria. NSF staff will give these elements careful consideration 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
• What is the intellectual merit of the proposed activity? (This criterion also includes the main considerations that are used by NIH to assess the merit of applications and assign priority scores.)

• How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields? Significance: Does this study address an important problem? If the aims of the application are achieved, how will scientific knowledge be advanced? What will be the effect of these studies on the concepts or methods that drive this field?

• 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.) Investigator: Is the investigator appropriately trained and well suited to carry out this work? Is the work proposed appropriate to the experience level of the principal investigator and other researchers (if any)?

• To what extent does the proposed activity suggest and explore creative and original concepts? Innovation: Does the project employ novel concepts, approaches or methods? Are the aims original and innovative? Does the project challenge existing paradigms or develop new methodologies or technologies?

• How well conceived and organized is the proposed activity? Approach: Are the conceptual framework, design, methods, and analyses adequately developed, well integrated, and appropriate to the aims of the project? Does the applicant acknowledge potential problem areas and consider alternative tactics?

• Is there sufficient access to resources? Environment: Does the scientific environment in which the work will be done contribute to the probability of success? Do the proposed experiments take advantage of unique features of the scientific environment or employ useful collaborative arrangements? Is there evidence of institutional support?

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

• The adequacy of the plans to include both genders, minorities and their subgroups, and children as appropriate to the scientific goals of the research.

• NIH requirements for projects involving research with human subjects and plans for the recruitment and retention of subjects should also be included. (see http://grants.nih.gov/grants/funding/women_min/guidelines_update.htm and http://grants.nih.gov/grants/funding/children/children.htm)

• The reasonableness of the proposed budget and duration in relation to the proposed research.

• The adequacy of the proposed protection of humans, animals, or the environment, to the extent that they may be adversely affected by the project proposed in the application.

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

B. Review Protocol and Associated Customer Service Standard

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

NSF is striving to be able to tell applicants whether their proposals have been declined or recommended for funding within six months for 70 percent of proposals. The time interval begins on the date of receipt. The interval ends when the Division Director accepts the Program Officer's recommendation.

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

The NSF/NIH program officers will meet as soon as possible after the applications are submitted to determine participating unit interest in specific applications. After the applications have been reviewed, the NSF and NIH program officers will meet again to formulate, by consensus, a set of funding recommendations consistent with the goals of the initiative. In doing so, the program officers will consider panel recommendations and other appropriate concerns such as program relevance and breadth of impact.

Those applications selected for funding by NSF will be handled under the usual NSF processes. For those applications that are selected for potential funding by the participating NIH Institutes, the NIH will ask the applicant to resubmit the application on the PHS 398 application form directly to the Center for Scientific Review (http://www.csr.nih.gov) at the NIH. Each of these applications must be accompanied by a cover letter that associates the application with the Joint NSF/NIH Initiative. An applicant will not be allowed to increase the proposed budget or change the scientific content of the application in the resubmission to the NIH. These NIH applications will be entered into the NIH IMPAC II system. The results of the review will be presented to the involved National Advisory Council for the second level of review. Subsequent to the Council review, NIH Institutes will make their funding determination and selected awards will be made.

VII. AWARD ADMINISTRATION INFORMATION

This section provides an overview of the award administration policies and process for the NSF. The NIH has similar procedures and requirements with some differences in details and deadlines. For more information on NIH policy and requirements for grants, see http://grants.nih.gov/grants/oer.htm. Specific questions on NIH and specific Institute policies can be addressed to the appropriate person in the list of NSF/NIH contacts.

A. Notification of the Award

Notification of the award is made to *the submitting organization* by a Grants Officer in the Division of Grants and Agreements. Organizations whose proposals are declined will be advised as promptly as possible by the cognizant NSF Program Division administering the program. Verbatim copies of reviews, not including the identity of the reviewer, will be provided automatically to the Principal Investigator. (See section VI.A. for additional information on the review process.)

B. Award Conditions

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

*These documents may be accessed electronically on NSF's Web site at http://www.nsf.gov/home/grants/grants_gac.htm. Paper copies may be obtained from the NSF Publications Clearinghouse, telephone (301) 947-2722 or by e-mail from pubs@nsf.gov.

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

Special Award Conditions
Awards made by the NIH will be administered according to the NIH grants policy statement http://grants.nih.gov/grants/policy/nihgps/.

C. Reporting Requirements

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

Grants made by NSF will be subject to NSF's reporting requirements. Grants made by NIH will be subject to NIH's reporting requirements. The following information is for NSF grants only. (For information about NIH reporting requirements, contact the cognizant NIH Program Director in the list of NSF/NIH contacts.)

Within 90 days after the expiration of an award, the PI also is required to submit a final project report. Approximately 30 days before expiration, NSF will send a notice to remind the PI of the requirement to file the final project report. Failure to provide final technical reports delays NSF review and processing of pending proposals for that PI. PIs should examine the formats of the required reports in advance to assure availability of required data.

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

VIII. CONTACTS FOR ADDITIONAL INFORMATION

General inquiries regarding Joint NSF/NIH Initiative to Support Collaborative Research in Computational Neuroscience should be made to:

- Dr. Mita Desai, Program Director, Division of Experimental and Integrative Activities, Suite 565S, telephone: 703-292-8909, e-mail: mdesai@nsf.gov.

- Dr. Christopher Platt, Program Director, Division of Integrative Biology and Neuroscience, Suite 685, telephone: 703-292-8423, e-mail: cplatt@nsf.gov.

- Dr. Gary W. Strong, Program Director, Division of Experimental and Integrative Activities, Suite 565S, telephone: 703-292-8909, e-mail: gstrong@nsf.gov.

- Dr. Lawrence Parsons, Program Director, Division of Behavioral and Cognitive Sciences, Suite 995, telephone: 703-292-8740, e-mail: lparsons@nsf.gov.

- Dr. Bruce Hamilton, Program Director, Division of Bioengineering and Environmental Systems, Suite 565S, telephone: 703-292-7066, e-mail: bhamilto@nsf.gov.

- Dr. Eugene Bruce, Program Director, Division of Integrative Biology and Neuroscience, Suite 685, telephone: 703-292-8413, e-mail: ebruce@nsf.gov.

- Dr. Rajinder Khosla, Acting Director, Division of Electrical & Communications Systems, Suite 675, telephone: 703-292-8339, e-mail: rkhosla@nsf.gov.

- Dr. Sohi Rastegar, Program Director, Division of Engineering Education and Centers, Suite 585, telephone: 703-292-7946, e-mail: srastega@nsf.gov.

- Dr. Barry Davis, Director, Taste and Smell Programs, NIDCD, telephone: 301-402-3464, e-mail: barry_davis@nih.gov.

- Dr. Dennis Glanzman, Chief, Theoretical and Computational Neuroscience Research Program, NIMH, telephone: 301-443-1576, e-mail: glanzman@heliz.nih.gov.

- Dr. Yuan Liu, Director, Channels, Synapses, and Circuits Program, NINDS, telephone: 301-496-1917, e-mail: liuyuan2@ninds.nih.gov.

- Dr. Antonio Noronha, Chief, Neurosciences and Behavioral Research Branch, NIAAA, telephone: 301-443-7722, e-mail: anoronha@willco.niaaa.nih.gov.

- Dr. David Shurtleff, Deputy Director for Programs, NIDA, Division of Neuroscience and Behavioral Research, telephone: 301-443-1887, e-mail: david_shurtleff@nih.gov.

- Dr. Judith Finkelstein, Program Director, Sensory/Motor Disorders of Aging Programs, NIA, telephone: 301-496-9350, e-mail: jf119k@nih.gov.

- Dr. Michael Oberdorfer, Program Director, Visual Neuroscience Program, NEI, telephone: 301-496-5301, e-mail: oberderfer@nei.nih.gov.

For questions related to NIH grants management issues, contact:

- Kenny Bond, Team Leader, Grants Management Branch, NINDS, NIH, telephone: 301-496-3813, email: Bondk@ninds.nih.gov

- Diana Trunnell, Grants Management Branch, NIMH, NIH, telephone: 301-443-2805, email: dtrunnel@mail.nih.gov

- Gary Fleming, Grants Management Specialist, Grants Management Branch, NIDA, NIH, 6001 Executive Boulevard, Room 3131, MSC 9541, Bethesda, MD 20892-9541, telephone: 301-443-6710, email: gf6s@nih.gov

- Linda Whipp, Chief, Grants and Contracts Management Office, NIA, NIH, 7201 Wisconsin Ave, Gateway Bldg., Suite 2N212, Bethesda, MD 20892-9205, telephone: 301-496-1472, email: whippl@nia.nih.gov

- Sara Stone, Chief, Grants Management Branch, NIDCD, NIH, telephone: 301-402-0909, email: stones@nidcd.nih.gov

- Judy Simons, Acting Chief, Grants Management Branch, NIAAA, NIH, telephone: 301-443-2434, email: jsimons@willco.niaaa.nih.gov

- William W. Darby, Chief, Grants Management Branch, NEI, NIH, Executive Plaza South, Suite 350, 6120 Executive Blvd., MSC 7164, Bethesda, MD 20892-7164, telephone: 301-496-5884; email: wwd@nei.nih.gov

For questions related to the use of FastLane, contact:

- Fastlane user support services, e-mail: fastlane@nsf.gov.

IX. OTHER PROGRAMS OF INTEREST

The NSF *Guide to Programs* is a compilation of funding for research and education in science, mathematics, and engineering. The NSF *Guide to Programs* is available electronically at http://www.nsf.gov/cgi-bin/getpub?gp. General descriptions of NSF programs, research areas, and eligibility information for proposal submission are provided in each chapter.Many NSF programs offer announcements or solicitations concerning specific proposal requirements. To obtain additional information about these requirements, contact the appropriate NSF program offices. Any changes in NSF's fiscal year programs occurring after press time for the *Guide to Programs* will be announced in the NSF E-Bulletin, which is updated daily on the NSF web site at http://www.nsf.gov/home/ebulletin, and in individual program announcements/solicitations. Subscribers can also sign up for NSF's Custom News Service (http://www.nsf.gov/home/cns/start.htm) to be notified of new funding opportunities that become available. The NSF and the NIH has a number of programs related to computational biology and complex systems and the desire to bring physicists, mathematicians, computer scientists, engineers and theorists into the area of biomedical research. Information on these programs can be obtained at:
Computational Neuroscience, Div. Integrative Biol. & Neurosci/BIO:
http://www.nsf.gov/bio/ibn/ibnneuro.htm#co Biological Databases & Informatics, Div. Biol. Infrastructure/BIO
http://www.nsf.gov/bio/dbi/dbiresearch.htm#da
Biomedical Engineering & Research to Aid Persons with Disabilities Program
http://www.nsf.gov/pubs/2001/nsf0112/nsf0112.htm

Quantum and Biologically Inspired Computing(QuBIC)
http://www.nsf.gov/pubs/2002/nsf02017/nsf02017.html
Control, Networks and Computational Intelligence
http://www.eng.nsf.gov/ecs/programs/cnci/cnci.htm
Quantitative approaches to the analysis of complex biological systems:
http://grants.nih.gov/grants/guide/pa-files/PA-98-077.html
Mentored quantitative research career development award:
http://grants.nih.gov/grants/guide/pa-files/PA-99-087.html
Planning grants: national programs of excellence in biomedical computing (pre-NPEBC)
http://grants.nih.gov/grants/guide/pa-files/PAR-00-102.html
Innovations in biomedical information science and technology: phased innovation award (R21/R33)
http://grants.nih.gov/grants/guide/pa-files/PA-00-117.html

ABOUT THE NATIONAL SCIENCE FOUNDATION

The National Science Foundation (NSF) funds research and education in most fields of science and engineering. Awardees are wholly responsible for conducting their project activities and preparing the results for publication. Thus, the Foundation does not assume responsibility for such findings or their interpretation.NSF welcomes proposals from all qualified scientists, engineers and educators. The Foundation strongly encourages women, minorities and persons with disabilities to compete fully in its programs. In accordance with Federal statutes, regulations and NSF policies, no person on grounds of race, color, age, sex, national origin or disability shall be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving financial assistance from NSF (unless otherwise specified in the eligibility requirements for a particular program). Facilitation Awards for Scientists and Engineers with Disabilities (FASED) provide funding for special assistance or equipment to enable persons with disabilities (investigators and other staff, including student research assistants) to work on NSF-supported projects. See the program announcement/solicitation for further information.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, FIRS at 1-800-877-8339.The National Science Foundation is committed to making all of the information we publish easy to understand. If you have a suggestion about how to improve the clarity of this document or other NSF-published materials, please contact us at plainlanguage@nsf.gov.

ABOUT THE NATIONAL INSTITUTES OF HEALTH

The National Institutes of Health (NIH) has as its mission to uncover new knowledge that will lead to better health for everyone. NIH works toward that mission in a variety of ways including supporting the research of non-Federal scientists in universities, medical schools, hospitals, and research institutions throughout the country and abroad. The NIH institutes participating in this solicitation -- The National Institute of Neurological Disorders and Stroke (NINDS), The National Institute of Mental Health (NIMH), The National Institute on Drug Abuse (NIDA), The National Institute on Aging (NIA), The National Institute on Deafness and Other Communication Disorders (NIDCD), The National Institute on Alcohol Abuse and Alcoholism (NIAAA), and National Eye Institute (NEI) -- contribute to NIH's mission through research efforts aimed at understanding, treating, and preventing disease states that involve or are related to the nervous system.

- NINDS supports research on the healthy and diseased brain, spinal cord, peripheral nerves, and mechanisms underlying neurological and neuromuscular disorders.

- NIMH supports an integrated program of basic and clinical research in biology, neuroscience, epidemiology, behavioral sciences as well as services research aimed at developing and assessing new approaches to diagnose, prevent and treat mental illness.

- NIDA supported research is aimed at increasing the understanding of the causes and consequences of drug abuse and addiction. NIDA supports a broad research program in basic and clinical research, neuroscience, epidemiology, behavioral sciences and services research.

- NIA supports biomedical, social, and behavioral research on the aging process and diseases of the aging organism, including basic science and clinical studies of the central and peripheral nervous system at genetic, molecular, cellular and systems levels.

- NIDCD supports biomedical and behavioral research related to normal and disordered processes of hearing, balance, smell, taste, voice, speech and language. Basic and clinical studies of genetic, molecular, cellular, physiological, biochemical, and behavioral aspects of function in health and disease are encouraged.

- NIAAA supports a wide range of areas relevant to alcoholism and alcohol abuse including basic and applied research on the mechanisms of action of alcohol on bio-behavioral processes and effects of alcohol on the nervous system.

- NEI supports basic and clinical research aimed at increasing our understanding of the eye and the visual system in normal health and disease.

PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

The information requested on proposal forms and project reports is solicited under the authority of the National Science Foundation Act of 1950, as amended. The information on proposal forms will be used in connection with the selection of qualified proposals; project reports submitted by awardees will be used for program evaluation and reporting within the Executive Branch and to Congress. The information requested may be disclosed to qualified reviewers and staff assistants as part of the proposal review process; to applicant institutions/grantees to provide or obtain data regarding the proposal review process, award decisions, or the administration of awards; to government contractors, experts, volunteers and researchers and educators as necessary to complete assigned work; to other government agencies needing information as part of the review process or in order to coordinate programs; and to another Federal agency, court or party in a court or Federal administrative proceeding if the government is a party. Information about Principal Investigators may be added to the Reviewer file and used to select potential candidates to serve as peer reviewers or advisory committee members. See Systems of Records, NSF-50, "Principal Investigator/Proposal File and Associated Records," 63 Federal Register 267 (January 5, 1998), and NSF-51, "Reviewer/Proposal File and Associated Records," 63 Federal Register 268 (January 5, 1998). Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of receiving an award.Pursuant to 5 CFR 1320.5(b), an agency may not conduct or sponsor, and a person is not required to respond to an information collection unless it displays a valid OMB control number. The OMB control number for this collection is 3145-0058. Public reporting burden for this collection of information is estimated to average 120 hours per response, including the time for reviewing instructions. Send comments regarding this burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to: Suzanne Plimpton, Reports Clearance Officer, Information Dissemination Branch, Division of Administrative Services, National Science Foundation, Arlington, VA 22230, or to Office of Information and Regulatory Affairs of OMB, Attention: Desk Officer for National Science Foundation (3145-0058), 725 17th Street, N.W. Room 10235, Washington, D.C. 20503.
OMB control number: 3145-0058.