

NEW TECHNOLOGIES PROGRAM

Program Announcement

Proposal submission via FastLane

DEADLINES: September 15, March 14

DIVISION OF ADVANCED SCIENTIFIC COMPUTING
DIRECTORATE FOR COMPUTER AND INFORMATION
SCIENCE AND ENGINEERING



NATIONAL SCIENCE FOUNDATION

PROGRAM OBJECTIVES

The focus of the New Technologies Program is enabling technologies for computational science. The Program supports the range of technologies needed to advance the state of the art in high performance computing, and bring advanced computing and simulation capabilities to bear on fundamental problems throughout the sciences and engineering.

As pointed out in many documents and reports, computer simulation has now joined theory and experimentation as a third path to scientific knowledge. Simulation plays an increasingly critical role in all areas of science and engineering. However, as the uses of simulation expand, the need for high performance computing of increasing power, flexibility, and utility grows proportionately.

The New Technologies Program focuses on the full spectrum of research activities designed to fill this need. The Program makes two and three year grants to U.S. universities and other nonprofit research institutions for support of scientists and engineers. The program typically funds fifteen to twenty proposals a year, with award sizes ranging from \$100,000 to \$400,000 over three years, though both larger and smaller awards are possible.

FOCUS AREAS

Current focus areas of the Program are:

Programming environments and tools

- Parallel languages and compiler technology
- Performance evaluation and prediction
- Application specific environments
- Distributed/heterogeneous computing

Graphics and visualization

- Scientific visualization
- Applications of virtual reality in scientific computing
- Remote computing and remote collaboration
- Computational steering

High performance computing

- Innovative uses of high performance computing
- Parallel numerical algorithms and libraries
- Very high performance computing applications

This list of topics here should be considered representative, rather than exclusive. The Program will consider proposals dealing with all aspects of high performance computing. However, proposals relating to the listed focus topics and to combinations of them are especially welcome. Proposers interested in submitting proposals outside these areas should contact the Program Director in advance to ascertain suitability. In all cases, the relationship to high performance computing should be made explicit in the proposal. Novelty of approach and development of new methodology should be stressed.

TWO IMPORTANT CHANGES

There are two important changes to the Program this year. First, we are introducing use of deadlines. Second, the Program will be one of the first in CISE to make use of the new FastLane system. Submission by FastLane is required. Together, these two changes should result in improved proposal processing.

The Program is changing to use of deadlines since they facilitate comparative review of proposals by panels, and will enable the Program to provide quicker response to proposers. In order to provide flexibility, the Program will have two deadlines per year. Proposals received after the deadline will be returned without review. Current deadlines are:

- Fall Sep. 15
- Spring Mar. 14

Time critical proposals, e.g. workshops, will be handled by internal or mail review, as usual. Please contact the Program Director before submitting such proposals.

All New Technologies Program proposals must be submitted via NSF FastLane. This is a set of Web-based programs allowing direct electronic submission to NSF. FastLane can be accessed using a Web browser with forms capability (e.g. NetScape). Please see the FastLane references cited in the New Technologies Home Page for details:

<http://www.cise.nsf.gov/asc/NewTechProg.html>

Note that in order to submit a proposal via FastLane your institution must be registered as a FastLane institution. This can take up to several weeks, so please allow adequate time for this, since the Program deadlines will not be extended.

PROPOSAL REVIEW AND BUDGET

Proposals will be reviewed by panel or mail review in accordance with established NSF review criteria and guidelines. See the NSF Grant Proposal Guide (GPG) (NSF 95-27) for details. Proposals are encouraged from scientists and engineers associated with U.S. universities and other nonprofit research institutions. Support may be used for graduate student support, equipment and supplies, indirect costs, travel, visiting researchers, and academic release time.

INQUIRIES AND PROPOSAL PREPARATION

Inquiries about this program may be directed to:

New Technologies Program
Division of Advanced Scientific Computing
National Science Foundation
4201 Wilson Blvd., Arlington, VA 22230

Or contact the Program Director, Dr. John Van Rosendale, (703) 306-1962, jvanrose@nsf.gov. Potential applicants are encouraged to discuss their ideas with the Program Director in advance.

All proposals must be prepared in accordance with the instructions contained in the NSF Grant Proposal Guide (NSF 95-27). Single copies of this brochure are available at no cost from the NSF Forms and Publications Unit, (703) 306-1130, or via e-mail: pubs@nsf.gov. Brochures are also available through NSF's on-line Science and Technology Information System (STIS). To access the system, follow the instructions on the STIS flyer (NSF 94-4). To get an electronic copy of the flyer, send an Email message to stisfly@nsf.gov.

Grants awarded as a result of this announcement are administered in accordance with the terms and conditions of NSF GC-1, "Grant General Conditions," or FDP-III, "Federal Demonstration Partnerships Phase III General Terms and Conditions," and "NSF Agency Specific Requirements," both dated July 1, 1996, depending on the grantee organization. Copies of these documents are available at no cost from the NSF Forms and Publications Unit, phone (703) 306-1130, or e-mail: pubs2note.nsf.gov. More comprehensive information is contained in NSF Grant Policy Manual (GPG 95-26) for sale through the Superintendent of Documents, Government Printing Office, Washington, DC 20402.

GENERAL INFORMATION

The Foundation provides awards for research in the sciences and engineering. The awardee is wholly responsible for the conduct of such research and preparation of the results for publication. The Foundation, therefore, does not assume responsibility for the research findings or their interpretation.

The Foundation welcomes proposals from all qualified scientists and engineers and strongly encourages women, minorities, and persons with disabilities to compete fully in any of the research related programs described here. 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 subject to discrimination under any program or activity receiving financial assistance from the National Science Foundation. Programs described in this publication are in Category 47.070 (Computer and Information Science and Engineering) in the Catalog of Federal Domestic Assistance.

Facilitation Awards for Scientists and Engineers with Disabilities (FASSED) provide funding for special assistance or equipment to enable persons with disabilities (investigators and other staff, including student research assistants) to work on NSF projects. See the program announcement or contact the program coordinator at (703) 306-1636.

Privacy Act and Public Burden. The information requested on proposal forms is solicited under the authority of the National Science Foundation Act of 1950, as amended. It will be used in connection with the selection of qualified proposals and may be disclosed to qualified reviewers and staff assistants as part of the review process; to applicant institutions/grantees; to provide or obtain data regarding the application review process, award decisions, or the administration of awards; to government contractors, experts, volunteers, and researchers as necessary to complete assigned work; and to other government agencies in order to coordinate programs. See Systems of Records, NSF 50, Principal Investigators/Proposal File and Associated Records, and NSF-51, 60 Federal Register 4449 (January 23, 1995). Reviewer/Proposal File and Associated Records, 59 Federal Register 8031 (February 17, 1994). Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of your receiving an award.

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 or any other aspect of this collection of information, including suggestions for reducing this burden, to Herman G. Fleming, Reports Clearance Officer, Contracts, Policy, and Oversight, National Science Foundation, 4201 Wilson Boulevard, Arlington, VA 22230.

The National Science Foundation has TDD (Telephonic Device for the Deaf) capability, which enables individuals with hearing impairment to communicate with the Foundation about NSF programs, employment, or general information. To access NSF TDD, dial (703) 306-0090; for FIRS, 1-800-877-8339.

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