

George E. Brown, Jr. Network for Earthquake Engineering Simulation (NEES): Consortium Development

Program Solicitation

NSF 01-56

DIVISION OF CIVIL AND MECHANICAL SYSTEMS

LETTER OF INTENT DUE DATE(S): May 4, 2001

DEADLINE(S): June 4, 2001



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SUMMARY OF PROGRAM REQUIREMENTS

GENERAL INFORMATION

Program Title: George E. Brown, Jr. Network for Earthquake Engineering Simulation (NEES): Consortium Development

Synopsis of Program: The National Science Foundation's George E. Brown, Jr. Network for Earthquake Engineering Simulation (NEES) program requests proposals for a small team to initiate and coordinate activities with the earthquake engineering community, over a maximum three-year period with a target award date of October 1, 2001, that will result in the development and formation of a single community-based and community-led NEES Consortium. The NEES Consortium will be the single entity that will operate the NEES collaboratory for the ten-year period from October 1, 2004, through September 30, 2014. The NEES collaboratory will be developed by September 30, 2004, to provide new and challenging opportunities for integrated experimentation, computation, theory, databases, and model-based simulation in earthquake engineering research and education. The collaboratory will include approximately 20 geographically-distributed, shared-use next generation earthquake engineering experimental research equipment installations, with teleobservation and teleoperation capabilities, networked together through the high performance Internet. In addition to providing access for telepresence at the NEES equipment sites, the network will use cutting-edge tools to link high performance computational and data storage facilities, including a curated repository for experimental and analytical earthquake engineering and related data. The network will also provide distributed physical and numerical simulation capabilities and resources for visualization of experimental and computed data. Through NEES, the earthquake engineering community will use advanced experimental capabilities to test and validate more complex and comprehensive analytical and computer numerical models that will improve the seismic design and performance of our Nation's civil and mechanical systems. Under this program solicitation, NSF intends to make one award, over a maximum three-year period, with a target award date of October 1, 2001, for development and formation of the NEES Consortium. The NEES Consortium development awardee will work with the earthquake engineering community to gain community-generated input and reach broad consensus for the organizational structure and governance of the NEES Consortium. Two major milestones of the NEES Consortium development award are the following: (a) by October 1, 2003, or earlier, the NEES Consortium must be formally incorporated as a legal entity within the United States in order to receive awards, for operation and activities, from the federal government, over the period from October 1, 2004, through September 30, 2014, and (b) by October 1, 2003, a proposal must be submitted to NSF by the NEES Consortium for operation of the NEES collaboratory from October 1, 2004, through September 30, 2014. As the outcome of a successful peer review of the NEES Consortium proposal and pending availability of funds, the NEES Consortium will operate the NEES

collaboratory, under a separate new award from NSF, during the period from October 1, 2004, through September 30, 2014.

Cognizant Program Officer(s):

- Joy M. Pauschke, George E. Brown, Jr. Network for Earthquake Engineering Simulation, Program Director, Engineering (ENG), Civil and Mechanical Systems (CMS), Room 545, telephone: (703) 292-7024, Fax (703) 292-9053, e-mail: jpauschk@nsf.gov.

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

- 47.041 --- Engineering

ELIGIBILITY INFORMATION

- **Organization Limit:** Proposals may be submitted by U.S. universities and colleges and U.S. non-profit, non-academic organizations. Collaborative proposals involving more than one organization must be submitted as a single administrative package from the organization where the principal investigator is a permanent, full-time employee.
- **PI Eligibility Limit:** The principal investigator must be a permanent, full-time employee of the submitting organization.
- **Limit on Number of Proposals:** None

AWARD INFORMATION

- **Anticipated Type of Award:** Cooperative Agreement
- **Estimated Number of Awards:** One
- **Anticipated Funding Amount:** Up to \$2,000,000, over a maximum three-year period, with a target award date of October 1, 2001, pending availability of funds. A subsequent separate new award is anticipated for ten-year NEES Consortium operation, pending availability of funds.

PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

- **Letters of Intent:** Submission of Letters of Intent is optional. Please see the full program announcement/solicitation for further information.
- **Full Proposal Preparation Instructions:** 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:** Not Applicable.
- **Other Budgetary Limitations:** Not Applicable.

C. Deadline/Target Dates

- **Letter of Intent Due Date(s):** May 4, 2001
- **Preproposal Due Date(s):** None
- **Full Proposal Due Date(s):** June 4, 2001

D. FastLane Requirements

- **FastLane Submission:** Full Proposal Required
- **FastLane Contact(s):**
 - Kimberly Bryant, Engineering (ENG), Civil and Mechanical Systems (CMS), Room 545, telephone: (703) 292-7006, e-mail: kbryant@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.

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I. INTRODUCTION

The National Science Foundation's George E. Brown, Jr. Network for Earthquake Engineering Simulation (NEES) Program requests proposals for a small team to initiate and coordinate activities with the earthquake engineering community, over a maximum three-year period with a target award date of October 1, 2001, that will result in the development and formation of a single community-based and community-led NEES Consortium. The NEES Consortium will be the single entity that will operate the NEES collaboratory for the ten-year period from October 1, 2004, through September 30, 2014. The NEES collaboratory will be developed by September 30, 2004, to provide new and challenging opportunities for integrated experimentation, computation, theory, databases, and model-based simulation in earthquake engineering research and education. The collaboratory will include approximately 20 geographically-distributed, shared-use next generation earthquake engineering experimental research equipment installations, with teleobservation and teleoperation capabilities, networked together through the high performance Internet. In addition to providing access for telepresence at the NEES equipment sites, the network will use cutting-edge tools to link high performance computational and data storage facilities, including a curated repository for experimental and analytical earthquake engineering and related data. The network will also provide distributed physical and numerical simulation capabilities and resources for visualization of experimental and computed data. Through NEES, the earthquake engineering community will use advanced experimental capabilities to test and validate more complex and comprehensive analytical and computer numerical models that will improve the seismic design and performance of our Nation's civil and mechanical systems. Initially through 2004, the NEES collaboratory will include NEES equipment sites (shake tables, centrifuges, tsunami wave basin, large-scale laboratory experimentation systems, and field installation and monitoring sites) funded through NSF NEES program solicitations. However, NSF envisions that other major earthquake engineering equipment sites that bring unique experimental capabilities to NEES, both within the U.S. and abroad, will participate in the NEES collaboratory.

NEES is being developed, during the five-year period from October 1, 1999, through September 30, 2004, through NSF program solicitations to establish NEES equipment sites and the NEES high performance Internet network for the NEES collaboratory and the NEES Consortium. NSF 00-6, "Network for Earthquake Engineering Simulation (NEES): Earthquake Engineering Research Equipment," <http://www.nsf.gov/cgi-bin/getpub?nsf006>, issued in December 1999, focused on establishing the Phase 1 NEES Equipment Portfolio through construction, expansion, and modernization of the Nation's earthquake engineering experimental facilities. NSF intends to issue a program solicitation to establish the Phase 2 NEES Equipment Portfolio during 2001, pending availability of funds. NSF 00-7: "Network for Earthquake Engineering Simulation (NEES): System Integration," <http://www.nsf.gov/cgi-bin/getpub?nsf007>, issued in December 1999, requested proposals to develop the high performance Internet network for the NEES collaboratory. Currently, one scoping study is underway for development of the NEES network. Information on the scoping study award and its activities is available at <http://www.neesgrid.org>. The scoping study awardee conducted an earthquake engineering community workshop in Marina del Rey, CA, on November 16 and 17, 2000, to gain community input for the NEES network design. A report from this workshop will be posted on the neesgrid.org web site in March 2001. Proposers to this solicitation for NEES Consortium development should review NSF 00-6 and NSF 00-7 for NEES programmatic vision, scope, and concepts. Information on

awards funded under NSF 00-6 and NSF 00-7, and any subsequent NEES program solicitations, when available, may be found at the NSF NEES web site, at <http://www.eng.nsf.gov/nees>. This web site also contains links to reports from workshops that focused on various aspects leading to the development of the NEES Program. NSF will maintain a listing of Frequently Asked Questions (FAQ) relating to this solicitation, and this FAQ page will be accessible through the NSF NEES web site.

II. PROGRAM DESCRIPTION

NEES Consortium Concept

The NEES Consortium will be the single entity operating the NEES collaboratory for the ten-year period from October 1, 2004, through September 30, 2014. In this capacity, the NEES Consortium must be organized to encompass, represent, and serve the entire earthquake engineering community. As such an entity, from October 1, 2004, through September 30, 2014, the NEES Consortium will:

- lead, coordinate, and serve as the focal point for NEES,
- operate the NEES collaboratory, including managing of shared-use operations at the NEES equipment sites and all components of the NEES collaboratory,
- operate under ten-year strategic, business, and critical self-assessment plans,
- operate under established by-laws for governance and organizational and administrative structure,
- operate under policies and procedures that address items such as shared-use access, user fees, and operating cost reimbursement policies for the NSF funded NEES equipment sites and data protocols for the NEES curated repository,
- conduct activities to enhance the interaction of the NEES collaboratory with the earthquake engineering community to promote the development of integrated experimentation, computation, theory, databases, and model-based simulation,
- conduct and coordinate outreach and training activities for the NEES equipment sites, to encourage full participation in and use of the NEES collaboratory by the earthquake engineering community,
- develop connectivity and interactions with other relevant experimentation, computational, and visualization programs and networks, such as with additional major earthquake engineering experimentation sites located at U.S. academic institutions, U.S. Federal and national laboratory sites, and international sites, which bring unique capabilities to the NEES collaboratory,
- pursue technology development opportunities to enhance the capabilities of the NEES collaboratory (experimental facilities and network), and
- interface with NSF and other federal agency earthquake hazards reduction programs.

The NEES Consortium must provide programmatic vision, administrative capabilities, a formal organizational structure, a physical presence (corporate office), and high quality and reliable telecommunications support, including access to high performance academic networks. While a NEES Consortium office will take care of day-to-day NEES Consortium business, substantive programmatic input and guidance will come from committees drawn from the NEES Consortium membership, the earthquake engineering community, and allied disciplinary communities.

By October 1, 2003, or earlier, the NEES Consortium must be formally incorporated as a legal entity within the United States in order to receive awards, for operation and activities, from the federal government, over the period from October 1, 2004, through September 30, 2014. By October 1, 2003, a proposal must be submitted to NSF by the NEES Consortium for operation of the NEES collaboratory from October 1, 2004, through September 30, 2014. During the period from October 1, 2003, through September 30, 2004, the NEES Consortium must plan for start-up operation of the NEES collaboratory beginning on October 1, 2004. As the outcome of a successful peer review of the NEES Consortium proposal and pending availability of funds, the NEES Consortium will operate the NEES collaboratory, under a separate new award from NSF, over the period from October 1, 2004, through September 30, 2014.

NEES Consortium Development

This program solicitation requests proposals to coordinate the development and formation of a community-led NEES Consortium that will manage and conduct ten-year operation (October 1, 2004, through September 30, 2014) of the NEES collaboratory as described above under "NEES Consortium Concept." NSF intends to make one award, over a maximum three-year period, to develop this NEES Consortium. The awardee's scope of work will consist of coordination of activities for three aspects of NEES Consortium development. First, the awardee will organize and run activities to engage the earthquake engineering community to gain community-generated input and broad consensus for the organizational structure and governance of a single community-based and community-led NEES Consortium. These activities must culminate in the completion by October 1, 2003 (or earlier) of all documents required for NEES Consortium establishment and operation and in a proposal submitted to NSF by October 1, 2003, by the NEES Consortium for ten-year operation of the NEES collaboratory. Activities must be included during the period from October 1, 2003, through September 30, 2004, to enable start-up operation of the NEES collaboratory by the NEES Consortium entity beginning on October 1, 2004. Second, because the NEES Consortium will operate the NEES collaboratory that includes the high performance network, additional activities must facilitate community-generated input and consensus needed by the NEES system integration awardee, when established, for detailed network design. Third, the awardee must coordinate outreach and training activities for the NEES equipment sites as they become operational before September 30, 2004.

Types of project activities to be budgeted for this scope of work would include meetings, workshops, task forces, and interactive web-based communications. Task forces should be organized to provide input from the entire earthquake engineering community, and to reach consensus on key areas related to the NEES Consortium and NEES network design. Proposers should recommend key task force topics. For budgeting purposes, proposers should plan on up to ten task forces on-going at any one time. Within the first six months of the project, the awardee must make operational an interactive web-site presence that serves as a definitive source of information for the earthquake engineering community and facilitates communications,

discussions, and interaction with the entire earthquake engineering community. The web site will be used to inform on project activities, plans, and progress, post meeting minutes and publications from workshops and task forces, and coordinate outreach and training activities as NEES equipment sites become operational. The awardee must develop metrics that will be used continuously to evaluate its progress in Consortium formation.

Project activities must be planned to meet the following project milestones; however, proposers are encouraged to identify additional milestones:

By April 1, 2002 (six months after award date):

- Establishment of interactive web-site presence.

By October 1, 2002:

- Community-generated and community-supported workshop and task force reports posted on the web.
- Plans completed for coordination of outreach and training activities with NEES equipment sites.
- First-year critical self-assessment completed and documented.

By October 1, 2003:

- Documented evidence that a single community-led and community-based NEES Consortium has formed as a result of broad community-generated input and consensus among the earthquake engineering community.
- Completion of documents required for NEES Consortium formation, incorporation, governance, and operation, including by-laws, policies and procedures, ten-year plans (strategic, business and self-assessment), and ten-year budget for operation and activities.
- A proposal submitted to NSF by the NEES Consortium for operation of the NEES collaboratory from October 1, 2004, through September 30, 2014.
- Community-generated and community-supported workshop and task force reports posted on the web.
- Report on outreach and training activities coordinated with and implemented at NEES equipment sites.
- Second year critical self-assessment completed and documented.

By September 30, 2004:

- Completion of activities required to enable start-up operation of the NEES collaboratory by the NEES Consortium beginning on October 1, 2004.
- All workshop and task force reports completed and posted on the web.

- Final project year and cumulative critical self-assessment completed and documented, including recommendations for NEES Consortium operation.

This NEES Consortium development project requires a small team of dedicated investigators to plan and conduct its activities. The project staff credentials must demonstrate expertise and past accomplishments in development of organizations, earthquake engineering, task force organization and management, and interactive web site development, usage, and maintenance. Expertise must also be provided for technical report editing and web-based publications.

The principal investigator (PI) must lead this effort and budget a minimum half-time effort annually over the project period. The PI may be assisted by co-PIs, consultants who bring additional expertise needed to conduct the project, and administrative/clerical staff. An experienced webmaster must budget a minimum half-time effort annually over the project period. Office and meeting facilities must be available for the project, including Internet communications capabilities and institutional meeting space necessary to conduct planned activities.

III. ELIGIBILITY INFORMATION

Proposals may be submitted by U.S. universities and colleges and U.S. non-profit, non-academic organizations. The principal investigator must be a permanent, full-time employee of the submitting organization. Collaborative proposals involving more than one organization must be submitted as a single administrative package from the organization where the principal investigator is a permanent, full-time employee.

IV. AWARD INFORMATION

NSF intends to make one award for NEES Consortium Development, over a maximum three-year period, with a target award date of October 1, 2001, for up to \$2,000,000 total, pending availability of funds. NSF will use a two-step merit review process leading to one award for NEES Consortium Development: (1) mail and first panel review in July 2001 and (2) briefing by proposers before a second panel at NSF in August 2001. Proposals will first be reviewed by mail and a panel during July 2001. This first panel will recommend a subset of proposals for panel briefings by proposers in August 2001. This second panel will then make a recommendation to NSF for the NEES Consortium Development award. The awardee will be required to submit Quarterly Interim Progress Reports and Annual Reports on progress and plans. The format for these reports will be provided by NSF within one month of the award date.

As the outcome of a successful peer review of a proposal submitted to NSF by the NEES Consortium by October 1, 2003, and pending availability of funds, NSF will provide support, under a separate new NSF award, for the NEES Consortium to operate the NEES collaboratory from October 1, 2004, through September 30, 2014.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Letters of Intent: Letters of intent are optional and may be submitted by the principal investigator via email to jpauschk@nsf.gov by May 4, 2001. The letter of intent should include:

names and affiliations of the principal investigator and co-principal investigator(s); the telephone and facsimile numbers and email addresses of the principal investigator and an authorized organizational representative of the submitting institution, a list of participating institutions and organizations, and a brief description (not more than 500 words) of the overall NEES Consortium Development concept. Letters of intent will not be evaluated or used to decide on funding. They are requested to assist NSF in planning the review process. The submission of letters of intent enables NSF to begin identifying potential panelists before the proposal submission deadline. Letters of intent are treated with the same confidentiality as a NSF proposal submission. Receipt of the letter of intent will be acknowledged by NSF via email to the principal investigator.

Full Proposal Instructions:

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?nsf012>. 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.

Biographical sketches must be included for all project personnel, including subawardees and consultants. No appendices are permitted. The NSF budget request should include an estimated provision for travel by the principal investigator and several other key project members to two NSF NEES meetings per year through September 30, 2004.

The Project Description section (GPG, NSF 01-2, Chapter II.C.3) must not exceed 35 pages. Figures, including charts, graphs, maps, photographs, and other pictorial representations are included in this 35-page limit. Non-conforming proposals will be returned without review. References cited and biographical sketches are not included in this page limit. The Project Description section must contain the following sections, 1 through 8, in the sequence and with the headings shown below.

Section 1: List of All Project Personnel. For each project staff member, list name, professional title, department, organizational affiliation, and mailing address.

Section 2: Results from Prior NSF Support (up to 5 pages). If the principal investigator or co-principal investigator(s) have received NSF funding in the past five years, information on prior awards is required. Please consult the GPG for details. Reviewers will be asked to comment on the quality of the prior work described in this section of the proposal.

Section 3: Vision for Development of the NEES Consortium. Discuss the proposer's vision for the development of the NEES Consortium as aligned with the vision for the NEES Program that is articulated in this program solicitation and NSF 00-6 and NSF 00-7. Suggest candidate organizational structures for the administration, governance, and operation of the NEES Consortium that will be used to guide the development effort and discuss why these may be appropriate structures. Discuss the important decision points in determining which candidates to use. Identify the constituencies of the earthquake engineering community that are envisioned to participate in (1) the NEES Consortium and (2) the NEES Consortium development.

Section 4: Project Milestones, Outcomes, and Activities. Identify and discuss all project

milestones and outcomes, including those listed above in the section "Program Description." In tabular form, provide a concise list of project activities that are keyed to the milestones and outcomes. Provide rationale for why these activities are selected, who will organize, facilitate, and participate in them (cite types of backgrounds, disciplines, sectors, etc., rather than specific participant names), and the methods/metrics that will be used to evaluate their effectiveness to fulfill project milestones and outcomes. Describe the proposed plan, process, and activities during the project period that will be used to:

- (1) develop a consensus vision for the NEES Consortium organizational structure, governance, and operating plans.
- (2) identify and engage all constituencies of the earthquake engineering community in consensus-building activities. Discuss how outlying or dissenting input will be addressed.
- (3) identify and facilitate task forces for development of the NEES Consortium and NEES network design. Describe how the task forces will be organized, led, operate, reach consensus, and disseminate their findings.
- (4) coordinate outreach and training activities and connectivity for NEES equipment sites that become operational before September 30, 2004.
- (5) operate an interactive web site for communication with the earthquake engineering community. Describe how the web site will be developed and integrated into project activities and used to provide timely and definitive information for and communications among members of the earthquake engineering community.

Section 5: Risks. Discuss any risks associated with the formation of the NEES Consortium during the project period and discuss the strategy planned to manage these risks. Discuss lessons learned by the proposing team from past experience in the development of organizations and consensus building for similar types of organizations and broad constituencies.

Section 6: Project Schedule. Provide a legible Gantt chart and identify key milestones, key outcomes, and major activities over the project period. Identify and discuss the critical path for development and incorporation of the NEES Consortium. The schedule should show the sequencing of all major activities to be conducted during the project in sufficient detail to justify the proposed budget.

Section 7: Management Plan, Organizational Structure, and Project Staffing. Provide a management plan for this project. Discuss the administrative and organizational structure and qualifications of the project staff. Discuss why each member of the project staff, including all subawardees and consultants (if any), is needed. Provide a table that shows for each staff member, including all subawardees and consultants, the following: name, administrative position/title on the project, level of effort (monthly and annually), activities assigned, and responsibilities for achievement of key milestones and outcomes. Provide a functional project budget in tabular form showing how resources will be allocated for management and project milestones, outcomes, and activities. Provide a plan for annual project critical self-assessment that includes measurable metrics and discuss how the results of the self-assessment will be used for project improvement.

Section 8: Facilities. Describe office and meeting facilities that will be available for the project, including office equipment, communications capabilities, and institutional meeting space necessary to conduct project business.

Proposers are reminded to identify the program solicitation number (NSF 01-56) 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.

C. Deadline/Target Dates

Proposals submitted in response to this announcement/solicitation must be submitted by 5:00 PM, local time on the following date(s):

June 4, 2001

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.

Submission of Signed Cover Sheets. The signed copy of the proposal Cover Sheet (NSF Form 1207) must be postmarked (or contain a legible proof of mailing date assigned by the carrier) within five working days following proposal submission and be forwarded to the following address:

National Science Foundation

DIS – FastLane Cover Sheet

4201 Wilson Blvd.

Arlington, VA 22230

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. Each reviewer will be asked to address only those 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

In addition to the general review criteria established by the National Science Board, proposals will be reviewed against the following merit review criteria:

- Is the vision for NEES Consortium development aligned with the vision for the NEES program articulated in this program solicitation and in NSF 00-6 and NSF 00-7?
- Is there evidence that the proposing team has provided leadership and coordination for the development of organizations and consensus building for similar types of organizations and broad constituencies in the past?
- Does the proposing team provide all the expertise needed to conduct this project?
- Does the proposing team have the right concept for this project of who are the members of the entire earthquake engineering community?
- Will the proposing team be successful in engaging a broad constituency across the entire earthquake engineering community?
- Has a coherent concept for NEES Consortium organizational structure been identified that guides the selection of project milestones, outcomes, and activities?
- Have appropriate milestones, outcomes, and activities been identified for NEES Consortium development?
- Have appropriate milestones, outcomes, and activities been identified for NEES Consortium planning for start-up operation beginning on October 1, 2004?
- Have appropriate milestones, outcomes, and activities been identified for providing input to the NEES system integration effort for network design?
- Have appropriate milestones, outcomes, and activities been identified for coordinating outreach and training activities for the NEES equipment sites that become operational before September 30, 2004?
- How effective are the plans for communications with the entire earthquake engineering community? Is it likely that the proposed web site will facilitate effective communications and interactions with the earthquake engineering community?
- Have the risks to achieving a consensus NEES Consortium by October 1, 2003, been identified, and a strategy provided to address or mitigate them?
- Is the project schedule reasonable? Has the critical path leading to the formation of the NEES Consortium by October 1, 2003, been identified?
- Are project resources effectively allocated?

A summary rating and accompanying narrative will be completed and signed 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.

In most cases, proposers will be contacted by the Program Officer after his or her recommendation to award or decline funding has been approved by the Division Director. This informal notification is not a guarantee of an eventual award.

NSF will be able to tell applicants whether their proposals have been declined or recommended for funding within six months for 95 percent of proposals. The time interval begins on the proposal deadline or target date or from the date of receipt, if deadlines or target dates are not used by the program. 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.

VII. AWARD ADMINISTRATION INFORMATION

A. Notification of the Award

Notification of the award is made to *the submitting organization* by a Grants Officer in the Division of Grants and Agreements. Organizations whose proposals are declined will be advised as promptly as possible by the cognizant NSF Program 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

The NEES Consortium development award will be for a maximum three-year period, with a target award date of October 1, 2001, for up to \$2,000,000 total, pending availability of funds. This award will include support for the following: (1) the development and formation of the NEES Consortium by October 1, 2003, or earlier, (2) the development of a proposal to be submitted to NSF by the NEES Consortium by October 1, 2003, for ten-year operation of the NEES collaboratory from October 1, 2004, through September 30, 2014, and (3) planning during the period from October 1, 2003, through September 30, 2004, for start-up operation of the NEES collaboratory by the NEES Consortium beginning on October 1, 2004. As the outcome of a successful peer review of the proposal submitted to NSF by the NEES Consortium by October 1, 2003, and pending availability of funds, NSF will provide support, under a separate new NSF award, for the NEES Consortium to operate the NEES collaboratory from October 1, 2004, through September 30, 2014.

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.

During the project period, the awardee will be required to submit Quarterly Interim Progress Reports and Annual Reports on progress and plans. The format for these reports will be provided by NSF within one month of the award date.

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 George E. Brown, Jr. Network for Earthquake Engineering Simulation (NEES): Consortium Development should be made to:

- Joy M. Pauschke, George E. Brown, Jr. Network for Earthquake Engineering Simulation, Program Director, Engineering (ENG), Civil and Mechanical Systems (CMS), Room 545, telephone: (703) 292-7024, Fax (703) 292-9053, e-mail: jpauschk@nsf.gov.

For questions related to the use of FastLane, contact:

- Kimberly Bryant, Engineering (ENG), Civil and Mechanical Systems (CMS), Room 545, telephone: (703) 292-7006, e-mail: kbryant@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.

Information on consortia formed by other scientific communities is available at the following web sites:

Joint Oceanographic Institutions (JOI) <http://www.joi-odp.org/>

Incorporated Research Institutions for Seismology (IRIS) <http://www.iris.edu/>

Laser Interferometer Gravitational-Wave Observatory (LIGO) <http://www.ligo.caltech.edu/>

University Corporation for Atmospheric Research (UCAR) <http://www.ucar.edu/>

UNIDATA (enabling universities to acquire and use atmospheric and related data)
<http://www.unidata.ucar.edu/>

University Corporation for Advanced Internet Development (UCAID)
<http://www.internet2.edu/ucaid/>

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 (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-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.

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.

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