

# Federal Cyber Service: Scholarship for Service (SFS)

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## Program Solicitation

NSF 04-505

*Replaces Document 02-181*



### National Science Foundation

Directorate for Education and Human Resources

Division of Undergraduate Education

### Letter of Intent Due Date(s) (*optional*):

December 12, 2003

### Full Proposal Deadline(s) (due by 5 p.m. proposer's local time):

January 12, 2004

## REVISIONS AND UPDATES

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The anticipated funding amount has been increased from \$11.2 million in FY03 to approximately \$16.2 million in FY04.

The deadline dates have been updated.

An increased emphasis on the need to be proactive in terms of Scholarship Track PIs and students assisting the Office of Personnel and Management in placing students in Federal positions has been added to the program description.

Cost sharing is no longer required for entire track of this program.

Funding limit has increased to \$150,000 per year for two years in the Capacity Building track.

The Scholarship Track now provides up to 10 percent of the total budget to address the management and administrative costs.

The Scholarship Track now provides up to 5 percent of the total budget to address curriculum, laboratory, and faculty development.

Section III. ELIGIBILITY INFORMATION correctly states that "An organization may submit no more than one proposal per track per round of competition." The earlier statement "Limit on Number of Proposals: None Specified" is insufficient since Section III does specify the limit.

### General Information

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#### Program Title:

Federal Cyber Service: Scholarship for Service (SFS)  
A Federal Cyber Service Training and Education Initiative

#### Synopsis of Program:

The Federal Cyber Service: Scholarship for Service (SFS) program seeks to increase the number of qualified students entering the fields of information assurance and computer security and to increase the capacity of the United States higher education enterprise to continue to produce professionals in these fields to meet the needs of our increasingly technological society. The SFS program is composed of two tracks:

- The *Scholarship Track* provides funding to colleges and universities to award scholarships to students in information assurance and computer security fields. Scholarship recipients shall pursue academic programs in information assurance for the final two years of undergraduate study, or for two years of master's-level study, or for the final two years of Ph.D.-level study. These students will participate as a cohort during two years of study and activities, including a summer internship in a Federal Agency at the end of their first year of support. The recipients of the scholarships will become part of the Federal Cyber Service of Information Technology Specialists whose responsibility is to ensure the protection of the United States Government's information infrastructure. Upon graduation after their two-year scholarships, recipients will be required to work for a Federal Agency for two years in fulfillment of their Federal Cyber Service commitment. The scholarships provide academic year stipends of \$8,000 per year for undergraduate students and \$12,000 per year for graduate students.
- The *Capacity Building Track* provides funds to colleges and universities to improve the quality and increase the production of information assurance and computer security professionals. Professional development of information assurance faculty and development of academic programs can be funded under this track. Funding of up to \$150,000 per year for two years is available. Partnerships designed to increase participation by underrepresented groups are particularly encouraged. Additional funding of up to \$150,000 per year for two years is available to partnerships that include minority-serving institutions as recognized by the U.S. Department of Education's list at <http://www.ed.gov/offices/OCR/minorityinst.html>.

#### Cognizant Program Officer(s):

- Dr. Ernest L McDuffie, Program Director, Division of Undergraduate Education, telephone: 703.292.4655, email: [emcduffi@nsf.gov](mailto:emcduffi@nsf.gov)

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

- 47.076 --- Education and Human Resources

### Eligibility Information

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- **Organization Limit:**
  - **Scholarship Track:** The proposing organization must be an accredited U.S. university or college that either (1) has been designated by the National Security Agency as a Center of Academic Excellence in Information Assurance Education (CAE/IAE) or (2) has an information assurance program that meets the

criteria equivalent to those necessary for designation as a CAE/IAE. In the latter case, the proposal must demonstrate the program's qualifications for CAE/IAE designation. (See <http://www.nsa.gov/isso/programs/coeiae/measure.htm> for CAE/IAE criteria).

- **Capacity Building Track:** The proposing organization may be either an accredited U.S. university or college or a consortium. The lead institution in the consortium must either (1) have a CAE/IAE designation or (2) have an information assurance program that meets criteria equivalent to those necessary for CAE/IAE designation. In the latter case, the proposal must demonstrate the program's qualifications for CAE/IAE designation. (See <http://www.nsa.gov/isso/programs/coeiae/measure.htm> for CAE/IAE criteria).
- **PI Eligibility Limit:** None Specified.
- **Limit on Number of Proposals:** An organization may submit no more than one proposal per track per round of competition

## Award Information

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- **Anticipated Type of Award:** Standard or Continuing Grant
- **Estimated Number of Awards:** 15 - 24 consisting of 3 - 6 Scholarship Track awards and 12 - 18 Capacity Building Track awards
- **Anticipated Funding Amount:** \$16,200,000 in FY 2004, pending availability of funds

## Proposal Preparation and Submission Instructions

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### A. Proposal Preparation Instructions

- **Letters of Intent:** Submission of Letters of Intent is optional. Please see the full text of this solicitation for further information.
- **Full Proposal Preparation Instructions:** This solicitation contains information that supplements the standard Grant Proposal Guide (GPG) proposal preparation guidelines. Please see the full text of this solicitation for further information.

### B. Budgetary Information

- **Cost Sharing Requirements:** Cost Sharing is not required.
- **Indirect Cost (F&A) Limitations:** No indirect costs may be charged in Scholarship Track proposals, but proposers may request up to 10 percent of the total budget to address the management and administrative costs associated with operating the SFS scholarship program and may request up to 5 percent of the total budget to address curriculum, laboratory, and faculty development in support of the SFS program. Indirect costs may be charged in Capacity Building Track proposals.
- **Other Budgetary Limitations:** Other budgetary limitations apply. Please see the full text of this solicitation for further information.

### C. Due Dates

- **Letters of Intent (optional):**  
December 12, 2003
- **Full Proposal Deadline Date(s)** (due by 5 p.m. proposer's local time):  
January 12, 2004

## Proposal Review Information

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

- **Award Conditions:** Standard NSF award conditions apply.
- **Reporting Requirements:** Standard NSF reporting requirements apply.

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## I. INTRODUCTION

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The Federal Cyber Service: Scholarship for Service (SFS) program provides funding to colleges and universities for scholarships and capacity building in the information assurance and computer security fields. A typical grant for scholarships will provide four years of funding to enable the institution to cover as many as three cohorts of up to 10, two-year full scholarships (30 two-year scholarships total during the grant period) for study leading to baccalaureate, master's, or Ph. D. degrees providing technical competence in the area of information assurance and security. A typical grant for capacity building will provide funds for institutional and/or faculty development in the area of information assurance and computer security. The program was established by the National Science Foundation (NSF) in accordance with the Federal Cyber Service Training and Education Initiative as described in the President's *National Plan for Information Systems Protection*. This initiative reflects the critical need for Information Technology (IT) professionals specializing in information assurance and security. The expected outcomes of this program include:

- new entrants to the federal workforce with the education and training that will enhance the security of critical federal information infrastructure,
- an increased national capability for the education of IT professionals in critical information infrastructure protection disciplines,
- increased national research and development capabilities in critical information infrastructure protection, and
- strengthened partnerships between institutions of higher education and relevant employment sectors.

The scholarship program provides funding for two-year full scholarships plus stipends for students to pursue academic programs in information assurance for the final two years of undergraduate study, or for two years of master's-level study, or for the final two years of Ph.D.-level study. Upon graduation, the recipients of the scholarships will become part of the Federal Cyber Service of information technology specialists whose responsibility is to ensure the protection of the United States Government's information infrastructure. After their two-year scholarships, the recipients will be required to work for a Federal Agency for two years in fulfillment of their Federal Cyber Service commitment.

The capacity building component of the SFS program provides funds to colleges and universities to improve the quality and increase the production of information assurance and computer security professionals through professional development of information assurance faculty and the development of academic programs.

## II. PROGRAM DESCRIPTION

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The primary objective of the SFS program is to build information assurance capacity and to provide an educated cadre of information technology professionals who can help assure the protection of the United States Government information infrastructure. The two tracks in this program are described below.

In order to increase information security expertise and capacity at institutions serving underrepresented populations, application by and partnerships with minority institutions, as recognized by the U.S. Department of Education's list at <http://www.ed.gov/offices/OCR/minorityinst.html>, are encouraged.

### ***Scholarship Track***

The SFS program provides funds to colleges and universities for student scholarships in support of education in information technology areas relevant to information assurance and computer security. In return for their scholarship and stipend, scholarship recipients must agree to work after graduation for two years as an information assurance specialist in the Federal Cyber Service for a Federal Agency.

It is important for all PIs and SFS scholarship students to understand that the U.S. Office of Personnel and Management (OPM) expects and needs active participations on your part to help assist with both summer internship and permanent placement at a Federal Agency. The program has a (as near as possible to) 100% placement goal, which can only be reached through active cooperation between all parties involved. Material to assist PIs in this process developed at a recent NSF workshop dealing with this issue is available here: <http://www.ehr.nsf.gov/ehr/DUE/programs/sfs/>.

During the scholarship period, the students will participate in internships at Federal Agencies and participate in other SFS activities such as conferences, workshops, and seminars. These activities are aimed at developing a community of practice that will enhance their individual and collective skills in an area increasingly important to the health and safety of the United States. OPM partners with NSF in this program by providing the internships at Federal Agencies and Federal Agency placement after graduation. OPM is also responsible for the coordination of students as Federal employees, for ensuring that contractual obligations are met by the students during their scholarship period and after graduation, and for assessing whether the program helps meet the personnel needs of the federal government for information infrastructure protection.

Grantee institutions will provide scholarship support to students who compete successfully in a selection process developed by the institution, who meet the SFS eligibility criteria, and who are selected as qualified for employment in the Federal Cyber Service by OPM. It is expected that scholarship participants will receive their degree (undergraduate, master's, or Ph.D.) within two years of the beginning of their scholarships. Each proposing institution must provide a description of its selection criteria and process, and explain and justify the proposed distribution of scholarship recipients. In particular, institutions must ensure that groups underrepresented in Information Technology have fair access to scholarships.

To be eligible for consideration for an SFS scholarship, a student must be

- a United States citizen and
- a full-time student within two years of graduation in a coherent formal program that is focused on computer security or information assurance at an awardee institution.

Students identified by their institutions for scholarships must meet selection criteria for federal employment. In addition, internship placements and final job placements may require security clearances. Scholarship recipients may be required to undergo the background investigation required to obtain such clearances.

The selection process for scholarship recipients should include indicators of academic merit and other indicators of future professional success. Multiple indicators may be appropriate in gauging both academic merit (e.g., grade point average, class rank) and professionalism (e.g., motivation, ability to manage time and resources, communication skills). Selection criteria should be flexible enough to accommodate applicants who have diverse backgrounds and with diverse career goals. Federal Cyber Service scholars must continue to demonstrate their eligibility in each semester/quarter of SFS support.

Awardee institutions must submit their lists of candidates for SFS scholarships to OPM for final eligibility approval. OPM will manage the scholars' internships and job placements. OPM will also manage compliance with the mandatory employment component of this program.

It is expected that grantee institutions will provide the infrastructure to recruit and support students, so that a sufficient number of scholarship recipients will graduate. Such an infrastructure might include, for example:

- recruitment of students, with special consideration to groups underrepresented in SFS fields (i.e., women, racial and ethnic minorities, and persons with disabilities);
- academic support and mentoring to support students in making progress toward the degree and to prepare students for the workplace;
- application-oriented experiences to increase the students' understanding of information assurance needs and their relationship to educational preparation and to build their leadership skills; and
- mechanisms to ensure retention of scholarship recipients to degree completion.

Grantee institutions are also expected to have clearly articulated management and administrative plans for the following program elements:

- Verification of scholarship candidates' eligibility, including the recipients' academic merit, appropriate affective skills, and enrollment in a designated or equivalent information assurance program.
- Provision of scholarship amounts to be used for expenses normally incurred by full-time students in the institution, including tuition, room and board, and equipment. These shall be included in Participant Support costs.
- Provision of academic-year stipends of \$8,000 per year for undergraduate students and \$12,000 per year for graduate students. These charges shall be included in Participant Support costs.
- Provision for coordination with OPM for summer intern placements for each student. Students are expected to take Federal intern positions in the summer between their first and second year of scholarship study. The payments for summer internships will take place outside the university grant structure and are not to be included in the budget.
- Provisions for tracking the academic progress of students to determine their continued eligibility throughout the academic part of the program. Subsequent tracking of students to verify that they meet the service obligation will be

done by OPM.

- Evaluation of program outcomes.
- Demonstration of ability to partner with the OPM in student hiring and agency placement.

The above items must be clearly detailed in the Budget Justification section of the proposal.

No indirect costs may be charged in Scholarship Track proposals, but proposers may request up to 10 percent of the total budget to address the management and administrative costs associated with operating the SFS scholarship program, and institutions may also request up to 5 percent of the total budget to address curriculum, laboratory, and faculty development in support of the SFS program. Funds requested for management and administrative costs, as well as for curriculum, laboratory, and faculty development, must be included in standard budget categories in the proposal budget, and appropriate justification must be provided in the Budget Justification.

Collaborations with industry, non-profit, or state organizations are strongly encouraged to allow students not chosen for scholarships to participate in student internships and in Federal Cyber Service activities.

The Principal Investigator (PI) will have overall responsibility for the administration of the institution's award, the management of the project, and interactions with NSF and OPM. The PI and the grantee institution are expected to have or to develop an administrative structure that enables faculty, academic administrators, scholarship recipients, and others involved in the project to interact productively during the award period. The PI is expected to be an integral participant in the educational activities of the SFS project. The management plan will be an integral part of the proposal evaluation.

Within the grantee institution, the departments making up the Center of Academic Excellence in Information Assurance Education or equivalent are expected to collaborate in implementing the project plan. To broaden the support of their activities, proposers are encouraged to establish collaborative arrangements with other organizations.

A proposing institution must have a strong program of activity in information assurance with Center of Academic Excellence in Information Assurance Education (CAE/IAE) designation, or must be able to demonstrate that its programs meet criteria equivalent to those necessary for designation as a CAE/IAE by the National Security Agency. Additionally, the institution must demonstrate its continuing commitment to both faculty development and curriculum excellence in information assurance. Proposals should contain documentation of CAE/IAE designation or demonstrate how the program meets the criteria published by the National Security Agency at <http://www.nsa.gov/isso/programs/coeiae/measure.htm>.

Proposals should clearly describe the activities to be undertaken, the processes through which the program elements will be implemented, and plans for documentation. Proposals should also clearly describe the student support structure, plans to manage and administer the program, and evidence of the quality of the institution's educational program in information assurance.

### ***Capacity Building Track***

The SFS program provides for capacity building in information assurance and computer security fields by providing funds to support faculty, institutional, and partnership development.

The intent of the Capacity Building Track is to increase the production of high quality information assurance and computer security professionals by providing support for efforts within the higher education system. These efforts may take many forms, but must be designed to:

- increase national capability for the high-quality education of information technology professionals in critical information infrastructure protection disciplines, or
- strengthen partnerships between institutions of higher education, government, and relevant employment sectors leading to improved educational opportunities in information assurance studies.

Funding for up to \$150,000 per year for two years is available. Additional funding of up to \$150,000 per year for two years is available to partnerships that include minority institutions as recognized by the U.S. Department of Education's list at <http://www.ed.gov/offices/OCR/minorityinst.html>.

Indirect costs may be charged against all costs except Participant Support and Equipment.

Typical projects include, but are not limited to, the following:

- *Adaptation and Implementation:* The program wishes to foster collaboration and dialogue among institutions offering courses and programs in information assurance. Consequently, the SFS program supports proposals for the adaptation and implementation of exemplary educational materials, courses, and curricula that have been developed at CAE/IAE or comparable institutions to promote increased educational capacity in information assurance and computer security education programs.
- *Curriculum and Educational Materials Development:* Supported activities should affect the learning environment, course content, and the experience of instruction. Projects often result in textbooks, laboratory experiments and manuals, software, CD-ROMS, videos, and other courseware. Such products are expected to be widely disseminated through commercial publishers, conferences, workshops, electronic networks, journal articles, and other means. A project's focus may range from the substantial revision of existing instructional materials to the creation of entirely new ones; from a few modules at a single educational level to comprehensive curriculum for multiple years; and from a single subject to the integration of several disciplines.
- *Faculty Development:* Grants are made to CAE/IAE designated or equivalent institutions for the development and implementation of activities that assist faculty from other institutions to learn about recent advances in information assurance and computer security and to improve their instructional capability in these areas. Such activities might include residencies, conferences, workshops, intensive seminars, distance learning opportunities, or a combination of these to bring about the desired professional development for faculty. These activities typically last from a few days to several weeks and are usually conducted in the summer, with follow-up activities during the academic year. To effect long-term change, projects for faculty development should normally span at least two academic years.

Proposals must describe how faculty participants will be recruited, what level of support will be provided for participants, what evaluation procedures will be used, and what type of follow-up will be provided as participants implement new courses and curricula in information assurance and computer security. Proposals must also describe how institutional teams of two or more members will be formed, and provide evidence of the institutional support that assures that these teams can continue to work towards building institutional capacity once the teams complete their faculty development activities.

*Inclusion of faculty belonging to underrepresented populations and from institutions serving underrepresented populations in such partnerships is strongly encouraged.*

- *Technical Experiences:* Well-designed technical experiences in the classroom and in a work environment can give students and faculty a broad, up-to-date, real-world perspective on the information assurance fields. Such experiences typically allow participants to get hands-on exposure to the field and thereby gain confidence in their abilities in technical areas; interact closely with computer security experts; obtain information about various careers available in information assurance and computer security; become aware of academic preparation necessary for such careers; become acquainted with the environments of other academic institutions, private industry, and government agencies; and develop leadership skills.

Projects providing technical experiences may consist of any combination of activities involving instruction, problem solving, research, deployment of security solutions, and industrial internships. Proposals should describe recruitment strategies, criteria for selection of participants, and the relevance of the planned experiences to the goal of developing expertise in information assurance and computer security.



- *Laboratory Development:* Laboratory or field experiences using suitable modern instrumentation are crucial elements in advanced technology fields. The SFS program supports the development of innovative methods for using laboratory and field exercises to improve students' understanding of basic principles. It also supports use by faculty of modern instrumentation, new technologies, or applications of instruments that extend their instructional capability. The program also encourages the establishment of equipment-sharing arrangements through consortia of institutions developing capacity in information assurance and computer security.
- *Partnerships:* Partnerships between CAE/IAE and equivalent institutions and institutions seeking to enhance their IA programs are strongly encouraged. Such partnerships serve to increase the capacity of the educational system to produce high-quality information assurance and security degree recipients. Including private companies and local, state, and federal governmental agencies greatly increases the value of such partnerships.

*Inclusion of institutions serving underrepresented populations in such partnerships is strongly encouraged.*

Proposals must clearly explain how their project will address the previously stated objectives of the program.

Proposals must describe impact on the production of qualified students, plans to evaluate the success of the project, and plans to provide effective dissemination of results.

### III. ELIGIBILITY INFORMATION

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For the Scholarship Track, the proposing organization must be an accredited U.S. university or college that either (1) has been designated by the National Security Agency as a Center of Academic Excellence in Information Assurance Education (CAE/IAE) or (2) has an information assurance program that meets criteria equivalent to those necessary for designation as a CAE/IAE. In the latter case, the proposal must demonstrate the program's qualifications for CAE/IAE designation. (See <http://www.nsa.gov/isso/programs/coeiae/measure.htm> for CAE/IAE criteria.)

For the Capacity Building Track, the proposing organization may be either an accredited U.S. university or college or a consortium. The lead institution in a proposing consortium must either (1) have a CAE/IAE designation or (2) have an information assurance program that meets criteria equivalent to those necessary for CAE/IAE designation. In the latter case, the proposal must demonstrate the program's qualifications for CAE/IAE designation. (See <http://www.nsa.gov/isso/programs/coeiae/measure.htm> for CAE/IAE criteria.)

An organization may submit no more than one proposal per track per round of competition.

### IV. AWARD INFORMATION

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The SFS Scholarship Track supports a university- or college-based scholarship program that supports two years of tuition, room and board, and stipends for students in the general area of information assurance and security. The program contains an internship component intended to support hands-on training in the Federal Government that is supported through the award for the internships and other training. A typical award might be approximately \$2.5 million for four years supporting three cohort classes of 10 first-year students (year 1), 10 first-year and 10 second-year students (year 2), 10 first-year and 10 second-year students (year 3), and 10 second-year students (year 4). The total award sizes will depend upon the tuition and room and board costs and on the cost of management and development.

The SFS Capacity Building Track supports a university or college or partnership in efforts to increase the numbers of highly qualified degree graduates with emphasis in information assurance and/or computer security. Awards provide up to \$150,000

per year for up to two years. Additional funding of up to \$150,000 per year for two years is available to partnerships that include minority institutions as recognized by the U.S. Department of Education's list at <http://www.ed.gov/offices/OCR/minorityinst.html>.

NSF anticipates that approximately \$16 million will be available for the SFS program in FY2004. The program expects to make 3 - 6 awards in the Scholarship Track and 12 -18 awards in the Capacity Building Track, depending on the quality of proposals received and the availability of funds.

## V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

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### A. Proposal Preparation Instructions

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#### Letters of Intent (*optional*):

A letter of intent to submit a proposal is requested (but not required) to assist NSF in planning for review. The letter of intent is not a preliminary proposal. It should be a brief statement that lists the submitting organization and any partners, and the intended track (Scholarship or Capacity Building), for the proposal. Letters of intent should be sent by electronic mail to [sfs@nsf.gov](mailto:sfs@nsf.gov) no later than December 12, 2003

#### 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 Website at: <http://www.nsf.gov/cgi-bin/getpub?gpg>. Paper copies of the GPG may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from [pubs@nsf.gov](mailto:pubs@nsf.gov).

A Project Data Form must be submitted (via Fastlane) as part of all proposals. The information on this form is used to direct proposals to appropriate reviewers and to determine the characteristics of projects supported by the Division of Undergraduate Education. In Fastlane, this form will show up in the list of forms for your proposal only after you have selected the correct Program Announcement/ Solicitation No. on the Cover Sheet and *saved* the Cover Sheet.

A Budget Justification of up to a total of three pages must accompany the budget forms and provide details about line items. Proposals that involve subawards should include the justification for the subawards in the three-page total.

Organizations intending to submit simultaneous Collaborative Proposals must carefully follow the instructions for electronic submission specified in the *GPG* (Chapter II, Section D.3.b). The titles of the related proposals must be identical and must begin with the words "Collaborative Project," and the *combined* budgets of the related proposals should conform to the anticipated individual award sizes specified in Section IV ("AWARD INFORMATION") above. These simultaneous Collaborative Proposals will be treated as a single proposal (with a single Project Summary, Project Description, and References Cited) during the review process.

Proposers are reminded to identify the program announcement/solicitation number (04-505) in the program announcement/solicitation block on the proposal Cover Sheet. Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Failure to submit this information may delay processing.

### B. Budgetary Information

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#### Cost Sharing:

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

**Indirect Cost (F&A) Limitations:**

No indirect costs may be charged in Scholarship Track proposals, but proposers may request up to 10 percent of the total budget to address the management and administrative costs associated with operating the SFS scholarship program and may request up to 5 percent of the total budget to address curriculum, laboratory, and faculty development in support of the SFS program. Indirect costs may be charged in Capacity Building Track proposals.

**Other Budgetary Limitations:**

The Scholarship Track provides academic year stipends of \$8,000 per year for undergraduate students and \$12,000 per year for graduate students. The Capacity Building Track provides funding of up to \$150,000 per year for two years; additional funding of up to \$150,000 per year for two years is available to partnerships that include minority institutions as recognized by the U.S. Department of Education's list at <http://www.ed.gov/offices/OCR/minorityinst.html>.

Funds requested for equipment or other technology may not exceed \$100,000 or 10 percent of the total NSF funding request, whichever is larger.

**C. Due Dates**

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

**Letters of Intent (optional):**

December 12, 2003

**Full Proposal Deadline(s)** (due by 5 p.m. proposer's local time):

January 12, 2004

**D. FastLane Requirements**

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Proposers are required to prepare and submit all proposals for this announcement/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 the FastLane Help Desk at 1-800-673-6188 or e-mail [fastlane@nsf.gov](mailto:fastlane@nsf.gov). The FastLane Help Desk answers general technical questions related to the use of the FastLane system. Specific questions related to this program announcement/solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this announcement/solicitation.

*Submission of Electronically Signed Cover Sheets.* The Authorized Organizational Representative (AOR) must electronically sign the proposal Cover Sheet to submit the required proposal certifications (see Chapter II, Section C of the [Grant Proposal Guide](#) for a listing of the certifications). The AOR must provide the required electronic certifications within five working days following the electronic submission of the proposal. Proposers are no longer required to provide a paper copy of the signed Proposal Cover Sheet to NSF. Further instructions regarding this process are available on the FastLane Website at: <http://www.fastlane.nsf.gov>

## VI. PROPOSAL REVIEW INFORMATION

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### A. NSF Proposal Review Process

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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.

The National Science Board approved revised criteria for evaluating proposals at its meeting on March 28, 1997 ([NSB 97-72](#)). All NSF proposals are evaluated through use of the two merit review criteria. In some instances, however, NSF will employ additional criteria as required to highlight the specific objectives of certain programs and activities.

On July 8, 2002, the NSF Director issued [Important Notice 127](#), Implementation of new Grant Proposal Guide Requirements Related to the Broader Impacts Criterion. This Important Notice reinforces the importance of addressing both criteria in the preparation and review of all proposals submitted to NSF. NSF continues to strengthen its internal processes to ensure that both of the merit review criteria are addressed when making funding decisions.

In an effort to increase compliance with these requirements, the January 2002 issuance of the GPG incorporated revised proposal preparation guidelines relating to the development of the Project Summary and Project Description. Chapter II of the GPG specifies that Principal Investigators (PIs) must address both merit review criteria in separate statements within the one-page Project Summary. This chapter also reiterates that broader impacts resulting from the proposed project must be addressed in the Project Description and described as an integral part of the narrative.

Effective October 1, 2002, NSF will return without review proposals that do not separately address both merit review criteria within the Project Summary. It is believed that these changes to NSF proposal preparation and processing guidelines will more clearly articulate the importance of broader impacts to NSF-funded projects.

The two National Science Board approved merit review criteria are listed below (see the [Grant Proposal Guide](#) Chapter III.A for further information). The criteria include considerations that help define them. These considerations are suggestions and not all will apply to any given proposal. While proposers must address both merit review criteria, reviewers will be asked to address only those considerations that are relevant to the proposal being considered and for which he/she is qualified to make judgments.

#### **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?

NSF staff will give careful consideration to the following in making funding decisions:

### ***Integration of Research and Education***

One of the principal strategies in support of NSF's goals is to foster integration of research and education through the programs, projects, and activities it supports at academic and research institutions. These institutions provide abundant opportunities where individuals may concurrently assume responsibilities as researchers, educators, and students and where all can engage in joint efforts that infuse education with the excitement of discovery and enrich research through the diversity of learning perspectives.

### ***Integrating Diversity into NSF Programs, Projects, and Activities***

Broadening opportunities and enabling the participation of all citizens -- women and men, underrepresented minorities, and persons with disabilities -- is essential to the health and vitality of science and engineering. NSF is committed to this principle of diversity and deems it central to the programs, projects, and activities it considers and supports.

### **Additional Review Criteria:**

Reviewers will be asked to consider the merit review criteria with respect to the SFS program components (see Section II ["PROGRAM DESCRIPTION"]). These include:

- the quality and completeness of the management and administrative plan--the plan must address all elements expressed in the program solicitation;
- quality of education and research in information assurance at the institution and the extent to which education and research are integrated;
- application-oriented experiences to increase the student's understanding of information assurance needs and their relationship to educational practices, with particular emphasis on K-12 education, governmental and industrial partnerships, and outreach;
- faculty members with specific expertise in information assurance and security, as well as professional development for other faculty;
- discipline faculty members integrally involved with the scholarship students and working with the students as a cohort; and
- for the Scholarship Track, reviewers may also consider the provision for appropriate student support infrastructure for the successful graduation of scholarship recipients, as expressed in the program solicitation.

## **B. Review Protocol and Associated Customer Service Standard**

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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 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.

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.

NSF is striving to be able to tell applicants whether their proposals have been declined or recommended for funding within six months. The time interval begins on the 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 their own risk.

## VII. AWARD ADMINISTRATION INFORMATION

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### A. Notification of the Award

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

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An NSF award consists of: (1) the award letter, which includes any special provisions applicable to the award and any numbered amendments thereto; (2) the budget, which indicates the amounts, by categories of expense, on which NSF has based its support (or otherwise communicates any specific approvals or disapprovals of proposed expenditures); (3) the proposal referenced in the award letter; (4) the applicable award conditions, such as Grant General Conditions (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 Website at [http://www.nsf.gov/home/grants/grants\\_gac.htm](http://www.nsf.gov/home/grants/grants_gac.htm). Paper copies may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from [pubs@nsf.gov](mailto:pubs@nsf.gov).

More comprehensive information on NSF Award Conditions is contained in the NSF *Grant Policy Manual* (GPM) Chapter II, available electronically on the NSF Website 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 Website at <http://www.gpo.gov>.

### C. Reporting Requirements

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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.

Within 90 days after the expiration of an award, the PI also is required to submit a final project report. Failure to provide final technical reports delays NSF review and processing of pending proposals for the PI and all Co-PIs. PIs should examine the formats of the required reports in advance to assure availability of required data.

PIs are required to use NSF's electronic project reporting system, available through FastLane, for preparation and submission of annual and final project reports. 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

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General inquiries regarding this program should be made to:

- Dr. Ernest L McDuffie, Program Director, Division of Undergraduate Education, telephone: 703.292.4655, email: [emcduffi@nsf.gov](mailto:emcduffi@nsf.gov)

For questions related to the use of FastLane, contact:

- Ms. Antoinette Allen, Computer Specialist, Division of Undergraduate Education, telephone: 703.292.4646, email: [duefl@nsf.gov](mailto:duefl@nsf.gov)
- FastLane Help Desk, telephone: 800.673.6188, email: [fastlane@nsf.gov](mailto:fastlane@nsf.gov)

## IX. OTHER PROGRAMS OF INTEREST

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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 Website 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) (<http://www.nsf.gov/home/cns/start.htm>) to be notified of new funding opportunities that become available.

### **Related Programs:**

Information about the NSF Computer Science, Engineering, and Mathematics Scholarships (CSEMS) program, which provides additional support for students, is available at <http://www.ehr.nsf.gov/EHR/DUE/programs/csems/>.

## ABOUT THE NATIONAL SCIENCE FOUNDATION

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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, although some programs may have special requirements that limit eligibility.

*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 GPG Chapter II, Section D.2 for instructions regarding preparation of these types of proposals.

The National Science Foundation promotes and advances scientific progress in the United States by competitively awarding grants and cooperative agreements for research and education in the sciences, mathematics, and engineering.

To get the latest information about program deadlines, to download copies of NSF publications, and to access abstracts of awards, visit the NSF Website at <http://www.nsf.gov>

- **Location:** 4201 Wilson Blvd. Arlington, VA 22230
  
- **For General Information** (NSF Information Center): (703) 292-5111
  
- **TDD (for the hearing-impaired):** (703) 292-5090 or (800) 281-8749
  
- **To Order Publications or Forms:**  
  
Send an e-mail to: [pubs@nsf.gov](mailto:pubs@nsf.gov)  
  
or telephone: (703) 292-7827
  
- **To Locate NSF Employees:** (703) 292-5111

## 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.



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, Division of Administrative Services, National Science Foundation, Arlington, VA 22230.

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