

NSF Computer Science, Engineering, and Mathematics Scholarships (CSEMS)

Program Solicitation

NSF 03-501

Replaces Document NSF 02-006



National Science Foundation

Directorate for Education and Human Resources

Division of Undergraduate Education

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

December 04, 2002

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

February 05, 2003

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

NSF Computer Science, Engineering, and Mathematics Scholarships (CSEMS)

Synopsis of Program:

This program supports scholarships for academically talented, financially needy students, enabling them to enter the high technology workforce following completion of an associate, baccalaureate, or graduate level degree in computer science, computer technology, engineering, engineering technology, or mathematics. Academic institutions apply for awards to support scholarship activities, and are responsible for selecting scholarship recipients, reporting demographic information about student scholars, and managing the CSEMS project at the institution.

Cognizant Program Officer(s):

- Calvin L. Williams, Program Director, Directorate for Education & Human Resources, Division of Undergraduate Education, 835 N, telephone: (703) 292-4642, email: cwilliam@nsf.gov
- Duncan E. McBride, Program Director, Directorate for Education & Human Resources, Division of Undergraduate Education, 835 N, telephone: (703) 292-4630, fax: (703) 292-9015, email: dmcbride@nsf.gov

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

- 47.076 --- Education and Human Resources

Eligibility Information

- **Organization Limit:**

Institutions of higher education (as defined in section 101 (a) of the Higher Education Act of 1965) in the United States and its territories that grant associate, baccalaureate or graduate degrees in computer science, computer technology, engineering, engineering technology, or mathematics are invited to submit proposals.

- **PI Eligibility Limit:**

The Principal Investigator must be a faculty member currently teaching within one of the CSEMS disciplines who can provide the leadership required to ensure the success of the project. Projects involving more than one department within an institution are eligible, but a single Principal Investigator must accept overall management responsibility. Other members of the CSEMS project management team may be listed as Co-Principal Investigators.

- **Limit on Number of Proposals:** An institution may submit no more than one proposal per competition.

Award Information

- **Anticipated Type of Award:** Standard or Continuing Grant
- **Estimated Number of Awards:** 90
- **Anticipated Funding Amount:** \$30,000,000 for FY 2003, pending availability of funds. Awards are normally not expected to exceed \$100,000 per year for up to four years.

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

- **Letters of Intent:** Submission of Letters of Intent is optional. Please see the full funding opportunity document for further information.
- **Full Proposal Preparation Instructions:** 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:** No indirect costs are allowed.
- **Other Budgetary Limitations:** Other budgetary limitations apply. Please see the full funding opportunity document for further information.

C. Due Dates

- **Letters of Intent (optional):**
December 04, 2002
- **Full Proposal Deadline Date(s)** (due by 5 p.m. proposer's local time):
February 05, 2003

D. FastLane Requirements

- **FastLane Submission:** Full proposal submission is required.

- **FastLane Contact(s):**
 - FastLane Help Desk, telephone: 800-673-6188, email: fastlane@nsf.gov

 - Elizabeth Tran, Science Education Analyst, Division of Undergraduate Education, telephone: 703-292-5338, email: duefl@nsf.gov

 - Antoinette Allen, Computer Specialist, Division of Undergraduate Education, telephone: 703-292-4646, email: duefl@nsf.gov

Proposal Review Information

- **Merit Review Criteria:** National Science Board approved criteria. Additional merit review considerations apply. Please see the full funding opportunity document for further information.

Award Administration Information

- **Award Conditions:** Standard NSF award conditions apply.
- **Reporting Requirements:** Additional reporting requirements apply. Please see the full funding opportunity document for further information.

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I. INTRODUCTION

The NSF Computer Science, Engineering, and Mathematics Scholarship (CSEMS) program provides institutions with funds for student scholarships to encourage and enable academically talented but financially needy students to enter the high technology workforce following completion of an associate, baccalaureate, or graduate degree in computer science, computer technology, engineering, engineering technology, or mathematics. The program was established by the National Science Foundation (NSF) in accordance with the American Competitiveness and Workforce Improvement Act of 1998 (P.L. 105-277) as modified by P.L. 106-313. The Act reflects the national need to increase substantially the number of American high technology workers and to develop high-quality professionals in these fields.

II. PROGRAM DESCRIPTION

The CSEMS program emphasizes the importance of recruiting students to high technology disciplines, mentoring and supporting students through degree completion, and partnering with industry to facilitate student career placement in the high technology workforce. Participating institutions are expected to support the goals of the CSEMS program including:

- Increased numbers of well educated and skilled employees in technical areas of national need;
- Improved educational opportunities for students in the named disciplines;
- Increased retention of students to degree achievement;
- Improved student support programs at institutions of higher education;
- Strengthened partnerships between institutions of higher education and high technology industry.

Student eligibility is determined, in part, by demonstrated financial need as defined by the U.S. Department of Education to be the difference between the institutional Cost of Attendance and the Estimated Family Contribution (see http://www.ed.gov/prog_info/SFA/StudentGuide/2002-3/need.html or <http://www.fafsa.ed.gov>). CSEMS scholarship funds may be used for expenses included in the institution's Cost of Attendance as calculated according to U. S. Department of Education guidelines. Refer to Section III. C. (Scholarship Recipients) in this Solicitation for details.

It is expected that scholarship recipients will achieve one of the following by the end of the scholarship award period:

- Receive an associate, baccalaureate, or graduate degree in one of the CSEMS disciplines;
- Transfer from an associate degree program to a baccalaureate degree program or from an undergraduate program to a graduate program in one of the CSEMS disciplines;
- Successfully complete a stage within an associate, baccalaureate, or graduate degree program in one of the CSEMS disciplines that, in the particular institution, is documented and described as a point of unusually high attrition.

CSEMS grants may be made for up to four years and may provide individual scholarships of up to \$3125 per year. Awardee institutions may elect to support individual student scholars for four years or may elect to support several cohorts of students for a shorter duration within the award period.

III. ELIGIBILITY INFORMATION

A. Institutions

Institutions of higher education (as defined in section 101 (a) of the Higher Education Act of 1965) in the United States and its territories that grant associate, baccalaureate, or graduate degrees in computer science, computer technology, engineering, engineering technology, or mathematics are invited to submit proposals. An institution may submit no more than one proposal per competition.

B. Principal Investigator

The Principal Investigator must be a faculty member currently teaching within one of the CSEMS disciplines who can provide the leadership required to ensure the success of the project. Projects involving more than one department within an institution are eligible, but a single Principal Investigator must accept overall management responsibility. Other members of the CSEMS project management team may be listed as Co-Principal investigators.

C. Scholarship Recipients

CSEMS scholarship recipients will be selected by the awardee institution, but must

- be United States citizens, nationals, refugee aliens, or permanent resident aliens at the time of application;
- be enrolled full time in computer science, computer technology, engineering, engineering technology, or mathematics degree programs at the associate, baccalaureate, or graduate level. Enrollment must be full-time for each semester or quarter a student receives a scholarship;
- demonstrate academic potential or ability; and
- demonstrate financial need, defined for undergraduate students by the US Department of Education rules for need-based Federal financial aid, or, for graduate students, defined as financial eligibility for Graduate Assistance in Areas of National Need (GANN).

Financial need is defined for undergraduates by the U.S. Department of Education as the Cost of Attendance (COA) minus the Estimated Family Contribution (EFC) (see http://www.ed.gov/prog_info/SFA/StudentGuide/2002-3/need.html). The Cost of Attendance, as defined by the U.S. Congress, is the total amount it will cost a student to go to school, including tuition and fees; on-campus room and board (or a housing and food allowance for off-campus students); allowances for books, supplies, transportation, loan fees, dependent care, costs related to a disability; and miscellaneous expenses. The Estimated Family Contribution is determined by the Free Application for Federal Student Aid (FAFSA) form and represents the expected family contribution toward the Cost of Attendance (<http://www.fafsa.ed.gov>). It is recommended that the PI consult the campus financial aid office for more information regarding the institutional COA and the calculation of student financial need.

IV. AWARD INFORMATION

The number and size of awards will vary depending upon the scope of projects and availability of funds. In fiscal year 2003, approximately \$30 million is expected to be available to support approximately 90 new CSEMS awards. These awards are normally not expected to exceed \$100,000 per year for up to four years. The \$100,000 per year limit includes the funds for administrative and support functions as well as the scholarship funds. (See section V.A.8. below)

If the submitting organization has never received an NSF award, it is recommended that the organization's appropriate administrative officials become familiar with the policies and procedures in the NSF Grant Policy Manual (GPM) (NSF 02151, <http://www.nsf.gov/pubsys/ods/getpub.cfm?gpm>) which are applicable to most NSF awards. The Prospective New Awardee Guide (NSF 02044) includes Administration and Management Information; Accounting System Requirements; Auditing Information; and

information on Payments to Organizations with Awards. This information will assist an organization in preparing documents that NSF requires to conduct administrative and financial reviews of an organization. The guide also serves as a means of highlighting the accountability requirements associated with Federal awards. This document is available electronically on NSF's Web site via <http://www.nsf.gov/pubs/2002/nsf02044/guide02044.pdf> .

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Letters of Intent (optional):

Optional Letters of Intent submitted in response to this announcement must be submitted by 5:00 PM, your local time, on December 4, 2002. Letters should merely indicate intent to submit a proposal along with the institution and Principal Investigator's name and should be sent by electronic mail to csems@nsf.gov.

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 (301) 947-2722 or by e-mail from pubs@nsf.gov.

Full Proposal:

FastLane Requirements

FastLane, NSF's system for conducting business over the Internet, must be used to prepare and submit proposals. Principal Investigators should contact their institution's Sponsored Research Office (which might also be known as the Office of Grants Administration, Office of Sponsored Research, Office of Research, etc.) to be registered as a FastLane user. (All Co-PIs listed in the proposal must also be FastLane registered users.) New FastLane users should acquaint themselves with the system as early as possible--well before the proposal deadline.

Full Proposal Content

1. Cover Sheet.

While filling out the cover sheet in FastLane, it is important to choose the program announcement number indicated on the cover of this document "NSF Computer Science, Engineering, and Mathematics Scholarship Program" from the list of programs in the "NSF Unit Consideration" section. This choice must be specified in order to have access to the DUE Project Data Form, which is required for CSEMS proposals.

An informative title for the proposed Computer Science, Engineering and Mathematics Scholarship project must be provided on the appropriate line. Please use the full project title and refrain from using the CSEMS acronym, NSF, or the institution's name in the project title.

2. Project Data Form.

A Project Data Form must be completed for 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 appear in the list of forms for the proposal only after you have selected the appropriate Program Announcement number (indicated on the cover of this document) on the proposal cover sheet and **have saved the cover sheet**.

3. Project Summary.

Provide a brief (500 words or fewer) description of the CSEMS project including the number of scholarships to be provided, the discipline areas to be served by the scholarship funds, the objectives of the project, and basic information about the student recruitment, selection, support, and career placement services to be provided as part of this CSEMS project.

The project summary **MUST** address both Merit Review Criteria (Intellectual Merit and Broader Impacts) in separate statements. See Section VI. A., Proposal Review Process, for a statement of the two criteria. Effective October 1, 2002, NSF will return without review proposals that do not address both criteria in the Project Summary.

4. Table of Contents.

The Table of Contents is generated by FastLane and cannot be edited.

5. Project Description.

The Project Description must not exceed 15 single-spaced pages of 12-point type. Proposals that exceed the page limit may not be reviewed or considered for funding. The Project description should contain the following information:

a. **Results from Prior NSF Support.**

Please report on the results from related prior NSF support. Provide information about any existing CSEMS projects at the institution and describe the relationship of this proposed project to the existing CSEMS project.

b. **Project Objectives and Plans.**

The project should have specific objectives that reflect the objectives of the CSEMS program and local needs, as well as specific plans to select students, encourage them to achieve their best academic performance, and enable them to enter the workforce in their fields.

c. **Activities on Which the Current Project Builds.**

CSEMS projects should build on existing student support structures and program elements. Proposals should discuss existing support structures and projects that are relevant to the CSEMS project and elaborate on the ways in which the CSEMS project will utilize or enhance the structures. Proposals should also mention specific support structures set up for CSEMS students.

d. **CSEMS Project Management Plan.**

CSEMS projects should be guided by a management plan in which the key personnel, the strategic plan, and project logistics are defined. The roles and responsibilities of the personnel involved should be clear. The Principal Investigator (PI) must be a faculty member in one of the CSEMS disciplines who can provide the leadership needed in order to ensure the success of the project. The PI will have overall responsibility for administering the project and for interacting with NSF. There should be evidence of strong faculty support and participation beyond the Principal Investigator within the disciplines impacted by this project. Financial aid and student support specialists as well as business and industry representatives may also be appropriate individuals to include in the management team as Co-Principal Investigators.

Plans should be in place for activities such as advertising and recruitment of students, selection of students, maintenance of CSEMS records, reporting responsibilities, oversight for student support services, and implementing a process by which students who lose CSEMS eligibility will be replaced by new students.

The management plan should indicate how students' eligibility will be determined, the mechanisms by which scholarships for students will be provided (up to a maximum amount of \$3125 per year per student), and how scholarship program outcomes will be evaluated and disseminated. It should also identify criteria for retention of students' scholarships from one year to the next. Demographic information should be presented in the proposal, including student enrollment numbers, the number of majors and graduates, and data on retention, graduation, and job placement. The information should support the number and size of the scholarships requested.

Grantee institutions may request additional funds of up to 5% of the total scholarship amount to support project management and up to 5% to support administrative costs. Information on the use of these funds must be clearly described and placed in relevant NSF budget categories. It is inappropriate to combine these funds and place them in

an "other" category. Note that these funds are included in the maximum of \$100,000 per year for each award. See Section V.A.8, Proposal Preparation Instructions, for a discussion of budget detail.

e. Student Selection Process and Criteria.

The proposal should include a plan for the process by which students will be selected to receive the CSEMS scholarship award. Included in this plan should be a description of the eligibility criteria to be used in selecting scholars. The program requires that the students meet the requirements for citizenship, major, academic potential, and need that are outlined in Section III-C, Eligibility Information, Scholarship Recipients. Projects should have additional selection criteria that reflect the local program. CSEMS scholars must be able to demonstrate their eligibility in each semester or quarter of CSEMS support.

The selection process for scholarship recipients should include indicators of academic merit and other indicators of likely professional success. Multiple indicators may be appropriate in gauging both academic merit (e.g., grade point average, placement test results) and professionalism (e.g., motivation, ability to manage time and resources, communication skills). Selection criteria should be flexible enough to accommodate applicants who come from diverse backgrounds and with diverse career goals. The program encourages efforts to increase the number of members of underrepresented groups (e.g., women, minorities, and persons with disabilities) in STEM fields, but it aims broadly to assist any student with financial need.

f. CSEMS Student Support Services and Programs.

It is expected that grantee institutions will have or develop support programs and services designed to enhance student learning, confidence, performance, retention to graduation, and career or higher education placement. Examples of student support include:

- Recruitment of students to higher education programs and careers in the CSEMS disciplines;
- Support and mentoring of students by faculty and industry representatives;
- Academic support services such as tutoring, study-groups, or supplemental instruction programs;
- Industry experiences or internship opportunities;
- Community building and support among CSEMS scholars within the institution;
- Participation in local or regional professional, industrial or scientific meetings and conferences;
- Access to appropriate technology and technological support personnel;
- Career counseling and job placement services for CSEMS scholars.

If some of the support services and programs already exist, there should be a plan to adapt them to meet the specific objectives of the CSEMS project.

Grantee institutions may request additional funds of up to 5% of the total scholarship amount for student support infrastructure costs. See section V. A., Proposal Preparation Instructions, for a discussion of budget detail.

g. Quality Educational Programs.

Institutions should provide evidence of the high quality of their educational programs, including those in the targeted disciplines. For example:

- External accreditations held by the institution, especially accreditations in the CSEMS disciplines;
- Academic courses of study that are well-defined, current, and academically rigorous;

Institutions should also provide student performance data that documents the success of the academic programs. For example:

- Percentage of enrolled students who are retained through completion of the targeted degree;
- Percentage of students who continue their education at higher degree levels;
- Data on student placement in employment or further higher education upon graduation.

h. Assessment and Evaluation.

As with all NSF projects, CSEMS projects must have clear and specific plans for assessment and evaluation. This includes not only assessment of student progress but overall evaluation of the CSEMS project. CSEMS projects are required to participate in regular NSF-led data collection activities to track the students. CSEMS projects should have impact on the departments and disciplines involved as well as the institution beyond simple student input and output. These goals must be clearly articulated in the CSEMS proposal. The CSEMS proposal should identify appropriate assessment and evaluation plans as well as plans for programmatic assessment and evaluation at the end of the project.

i. Special Program Features.

There are several considerations related to special features of the CSEMS program that may need to be considered and addressed in CSEMS proposals. These include:

CSEMS projects should provide student support structures that help the scholarship recipients succeed as students and, later, as working professionals. Ideally, CSEMS scholars are part of a cohort that is managed and supported as part of an active learning community. This can involve existing support structures or new support mechanisms to be developed by the CSEMS project. CSEMS proposals should describe these support structures and explain, particularly in the case of existing support structures, how the CSEMS students will be involved with the support structure or activity.

CSEMS projects often include enhancements such as research opportunities, tutoring of others, and internships for scholarship recipients. While these activities can clearly enhance the student experience, they must be included as optional components of the CSEMS project. CSEMS scholarships often provide funds that allow students to concentrate on full time studies rather than full time work. Thus, the program should not require regular additional activities that might be viewed as work to be done for the scholarships. The enhancement opportunities are valuable components of CSEMS projects as long as they are clearly optional for the students.

The CSEMS disciplines -- computer science, computer technology, engineering, engineering technology, and mathematics -- are legislatively determined. Scholarships are used to enhance our national workforce and productivity needs in these areas. Students who receive CSEMS scholarships must be enrolled full time in a degree program in one of the CSEMS disciplines. Often there are programs at an institution that do not have exactly the same title as a CSEMS discipline, but might be related to or part of the CSEMS discipline. In cases where students are in programs that are not included in the specific CSEMS disciplines, the proposal must clearly document and justify the inclusion of the program in the CSEMS scholarship group. This normally involves identification of the type of curriculum involved and the nature of the jobs that the students take upon graduation. These must clearly match with the technical nature of the CSEMS discipline curricula and jobs that CSEMS graduates normally fill upon graduation. CSEMS proposals should address this issue in enough detail so that expert reviewers can see the connection and relevance of the project to the CSEMS disciplines.

The CSEMS solicitation specifies that a faculty member currently teaching in a CSEMS discipline must serve as the principal investigator for the project. The purpose of this requirement is to ensure that the faculty of the disciplines involved have a commitment to active involvement with the CSEMS scholars. In addition to the faculty involvement, it is often helpful if a team of individuals, including financial aid and student support specialists, is developed for the CSEMS project. CSEMS proposals must document and show strong faculty involvement and commitment through leadership of the principal investigator, as well as through identification of other faculty who will be involved and the nature of their involvement.

CSEMS scholarships involve full time students who are financially needy as well as academically talented. NSF has adopted the standard U.S. Department of Education guidelines for determining financial need as well as allowable educational expenses. NSF, however, cannot prescribe the way in which local Financial Aid offices or departments develop policies or manage their students. Thus, rather than defining a specific number of hours for full time classification, CSEMS provides that students are full time if classified as full time by their local institution. At the same time, NSF cannot dictate financial aid policy to institutions. While we hope that our broad interpretation of allowable educational expenses will be used to calculate need and funding potential, NSF must rely on local financial aid office policies about management of student aid and scholarship funds. Likewise, each institution determines measures of academic promise for its students. Principal investigators developing CSEMS proposals should talk over these issues with appropriate financial aid offices as well as their discipline faculty in developing policies and criteria that are included in the CSEMS proposal.

j. Project Description Content Checklist.

In summary, the proposal should clearly describe the plan for implementing a program with the goals and characteristics outlined in the preceding text. The proposal should include, within the project description (limited to 15 single-spaced pages), the following:

- Results from any prior support, with particular emphasis on any prior CSEMS awards made to the institution;
- Statement of the project objectives and plans;
- Discussion of the project's significance;
- Discussion of activities on which the project builds (particularly connections to any existing CSEMS award at the institution);
- Description of the management plan, including discussion of the role of faculty in the disciplines in the operation of the project;
- Student selection process and criteria;
- Description of the student support structures and impact on students;
- Evidence of the quality of the institution's educational programs;
- Information on the demographics of the departments or programs affected by the scholarships, including number of majors and number of graduates per year, as well as information on enrollment and retention within the institution and programs involved;
- Rationale for the number of scholarships and the scholarship amount requested;
- Plans for documentation of project activities and assessment of outcomes.

6. References Cited. If applicable.

7. Biographical Sketches.

Include a 2-page biographical sketch for the Principal Investigator and each listed Co-Principal Investigator and/or Senior Personnel.

8. Budget, Budget Justification, and Allowable Costs:

Provide a budget for each year of support requested. The maximum CSEMS request is normally not to exceed \$100,000 per year. The \$100,000 per year limit includes all funds (scholarships, administrative costs, and student support costs).

- No indirect costs are allowed.
- Allocations for scholarships should be indicated in Section F.1 Participant Support - "Stipends" of the budget form. Scholarships may be requested for up to \$3125 per student per year.
- In addition, up to 10% of the total scholarship amount shown on budget line F.1. may be requested for expenses related to program administration (up to 5%) and student support services (up to 5%). The request for funds under this 10% allowance must be assigned to the appropriate NSF budget categories on the NSF budget form and must be explained on the budget explanation page. Refer to the GPG instructions for appropriate categories. Do not enter any costs on line G.6. (Other Direct Costs - "Other") or F.4. (Participant Support Costs - "Other").
- Faculty salary requests must be accompanied by an appropriate indication of the fraction of academic or summer months to be paid by the grant. If no salary is requested from the grant, then the fraction of academic and summer months should be listed on the budget form as zero.

9. Current and Pending Support.

A Current and Pending Support form must be completed for the Principal Investigator and each Co-Principal Investigator. Investigators with no prior support should fill out this form and include the CSEMS proposal as a pending project.

10. Facilities, Equipment, and Other Resources.

See GPG Section II. D.9.

11. Special Information and Supplementary Documentation.

A limited number of carefully selected materials that serve as evidence of the high quality of academic programs or further demonstrate excellence in student recruitment, support, or career placement may be included in the appendices. Scanned copies of letters of institutional support and letters documenting industry support or partnership commitments should also be included in the appendices. Do not send paper copies to NSF.

Proposers are reminded to identify the program announcement/solicitation number ((03-501)) 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

Cost Sharing:

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

Indirect Cost (F&A) Limitations:

No indirect costs are allowed.

Other Budgetary Limitations:

Additional funds up to 10% of the total scholarship amount may be requested for expenses related to program administration (up to 5%) and student services (up to 5%), all of which must be listed under the appropriate NSF budget categories. Do not enter items in either G.6. or F.4., "Other."

C. Due Dates

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

Letters of Intent (optional):

December 04, 2002

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

February 05, 2003

Optional Letters of Intent are encouraged and should be sent to csems@nsf.gov by December 4, 2002. Letters should indicate only the intent to submit a proposal along with the institution and PI name. The letter should not discuss the substance of the project.

D. FastLane Requirements

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. 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

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.

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 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?

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 above two merit review criteria with emphasis placed on the CSEMS program components (see "Program Description"). Those elements include:

- Student-support infrastructure for the successful graduation of scholarship recipients,
- Management and administration plan that is effective and clearly articulated,
- Evidence of faculty participation and support from the appropriate financial aid and student services personnel,
- Justification of the number and amount of scholarships requested based on current student demographics, and
- Educational program of high quality.

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

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 Website 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 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

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.

In addition, in response to the need for NSF to report on the operation and success of the CSEMS program, a web-based survey has been developed for the purpose of tracking student success and evaluating the overall impact of the CSEMS program. An external evaluator has been retained to assist in the program evaluation process. This evaluator will use the demographic data and student contact information to conduct formative and summative evaluation of the CSEMS program which includes post-graduation and post-employment assessment. These data are not used to evaluate individual projects.

Each CSEMS PI is required to complete the CSEMS web survey for each CSEMS scholar and subsequently update the information reported through the web site during each semester of continued CSEMS support. Instructions will be provided shortly after the award to successful grantees. This survey must be completed within 30 days of the beginning of each semester or quarter and includes the following information about each CSEMS scholar: name, permanent address, school address, major, career goals, race/ethnicity (student's option to report), disabilities (student's option to report), gender, date of birth, grade point average, participation in an internship (in a CSEMS-related area), and student employment (part-time or full-time; not necessarily in a CSEMS-related area). Any information that would permit identification of individual respondents will be held in strict confidence.

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 that PI. PIs should examine the formats of the required reports in advance to assure availability of required data.

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

- Calvin L. Williams, Program Director, Directorate for Education & Human Resources, Division of Undergraduate Education, 835 N, telephone: (703) 292-4642, email: cwilliam@nsf.gov
- Duncan E. McBride, Program Director, Directorate for Education & Human Resources, Division of Undergraduate Education, 835 N, telephone: (703) 292-4630, fax: (703) 292-9015, email: dmcbride@nsf.gov

For questions related to the use of FastLane, contact:

- FastLane Help Desk, telephone: 800-673-6188, email: fastlane@nsf.gov
- Elizabeth Tran, Science Education Analyst, Division of Undergraduate Education, telephone: 703-292-5338, email: duefl@nsf.gov
- Antoinette Allen, Computer Specialist, Division of Undergraduate Education, telephone: 703-292-4646, email: duefl@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](http://www.nsf.gov/home/ebulletin), 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:

The following programs might also be of interest:

- EHR/DUE - Advanced Technological Education (ATE) ([NSF 02-035](#))
- EHR/DUE - Course, Curriculum, and Laboratory Improvement (CCLI) ([NSF 02-043](#) and [NSF 02-095](#))
- EHR/DUE - National Science, Mathematics, Engineering, and Technology Education Digital Library (NSDL) ([NSF 02-054](#))
- EHR/DUE - Federal Cyber Service: Scholarship for Service (SFS)([NSF 02-181](#))
- EHR/DUE - Assessment of Student Achievement in Undergraduate Education (ASA) ([NSF 01-082](#))
- EHR/DUE - NSF Director's Award for Distinguished Teaching Scholars (DTS) ([NSF 02-131](#))
- EHR/DGE - NSF Graduate Teaching Fellows in K-12 Education (GK-12) ([NSF 02-042](#))
- EHR/HRD - Louis Stokes Alliances for Minority Participation (LSAMP) ([NSF 01-140](#))
- EHR/HRD - Historically Black Colleges and Universities - Undergraduate Program (HBCU-UP) ([NSF 02-162](#))
- EHR/HRD - Program for Persons with Disabilities ([NSF 02-177](#))
- EHR/HRD - Program for Gender Equity in Science, Mathematics, Engineering, and Technology ([NSF 02-107](#))
- CISE/EI - Educational Innovation Program ([NSF 02-082](#))
- CISE/EIA - Minority Institutions Infrastructure Program ([NSF 96-15](#))
- ENG & CISE - Combined Research-Curriculum Development (CRCD) ([NSF 01-139](#))
- MPS/DMS - Vertical Integration of Research and Education in Mathematical Sciences (VIGRE) ([NSF 02-120](#))
- NSF-wide - Research Experiences for Undergraduates (REU) ([NSF 02-136](#))

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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 11, 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

- **To Order Publications or Forms:**

Send an e-mail to: pubs@nsf.gov
or telephone: (301) 947-2722

- **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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