MEMORANDUM

DATE: June 15, 2004

TO: Fae L. Korsmo

FROM: James Lightbourne, Senior Advisor
Directorate for Education and Human Resources

SUBJECT: COV for Federal Cyber Scholarships for Service (SFS) Program

COI and Diversity Memo

The Committee of Visitors report for the Federal Cyber Scholarships for Service (SFS) Program was approved at the EHR Advisory Committee meeting held at NSF in Room 830 on May 12-13, 2004. The COV consisted of 6 members selected for their expertise related to the goals of the program. They provided a balance with respect to the type of institutions supported through the program, gender, and representation from underrepresented groups. The following table shows the main features of the COV's diversity.

Member of EHR Advisory Committee	2
Institution Type	
University	2
Four year college	x
Two year college	x
K-12	x
Industry	1
Federal Agency	3
Location	
East	5
Midwest	x
West Coast	1
Foreign	x
Gender	
Female	4
Male	2
Race/Ethnicity	
White	3
Black	3
Hispanic	x
Asian	x
Pacific Islander	x

The COV was briefed on Conflict of Interest issues and each COV member completed a COI form. COV members had no conflicts with any of the proposals or files.

CORE QUESTIONS and REPORT TEMPLATE
for
FY 2003 NSF COMMITTEE OF VISITOR (COV) REVIEWS

Guidance to NSF Staff: This document includes the FY 2003 set of Core Questions and the COV Report Template for use by NSF staff when preparing and conducting COVs during FY 2003. Specific guidance for NSF staff describing the COV review process is described in Subchapter 300- Committee of Visitors Reviews (NSF Manual 1, Section VIII) that can be obtained at http://www.inside.nsf.gov/od/gpra/.

NSF relies on the judgment of external experts to maintain high standards of program management, to provide advice for continuous improvement of NSF performance, and to ensure openness to the research and education community served by the Foundation. Committee of Visitor (COV) reviews provide NSF with external expert judgments in two areas: (1) assessments of the quality and integrity of program operations and program-level technical and managerial matters pertaining to proposal decisions; and (2) comments on how the outputs and outcomes generated by awardees have contributed to the attainment of NSF's mission and strategic outcome goals.

Many of the Core Questions developed for FY 2003 are derived, in part, from the OMB-approved FY 2003 performance goals and apply to the portfolio of activities represented in the program(s) under review. The program(s) under review may include several subactivities as well as NSF-wide activities. The directorate or division may instruct the COV to provide answers addressing a cluster or group of programs – a portfolio of activities integrated as a whole – or to provide answers specific to the subactivities of the program, with the latter requiring more time but providing more detailed information.

The Division or Directorate may choose to add questions relevant to the activities under review. NSF staff should work with the COV members in advance of the meeting to provide them with the report template, organized background materials, and to identify questions/goals that apply to the program(s) under review.

Guidance to the COV: The COV report should provide a balanced assessment of NSF's performance in two primary areas: (A) the integrity and efficiency of the *processes* related to proposal review; and (B) the quality of the *results* of NSF's investments in the form of outputs and outcomes that appear over time. The COV also explores the relationships between award decisions and program/NSF-wide goals in order to determine the likelihood that the portfolio will lead to the desired results in the future. Discussions leading to answers for Part A of the Core Questions will require study of confidential material such as declined proposals and reviewer comments. *COV reports should not contain confidential material or specific information about declined proposals.* Discussions leading to answers for Part B of the Core Questions will involve study of non-confidential material such as results of NSF-funded projects. It is important to recognize that the reports generated by COVs are used in assessing agency progress in order to meet government-wide performance reporting requirements, and are made available to the public. Since material from COV reports is used in NSF performance reports, the COV report may be subject to an audit.

We encourage COV members to provide comments to NSF on how to improve in all areas, as well as suggestions for the COV process, format, and questions.

FY 2003 REPORT TEMPLATE FOR
NSF COMMITTEES OF VISITORS (COVs)

Date of COV: *November 19-20, 2003*	
Program/Cluster: *Federal Cyber Scholarships for Service (SFS) Program*	
Division: *Undergraduate Education (DUE)*	
Directorate: *Education and Human Resources (EHR)*	
Number of actions reviewed by COV[1]: Awards: 8 Declinations: 10 Other:	
Total number of actions within Program/Cluster/Division during period being reviewed by COV[2]: Awards: 51 Declinations: 70 Other:	
Manner in which reviewed actions were selected: *Randomly selected jackets*	

PART A. INTEGRITY AND EFFICIENCY OF THE PROGRAM'S PROCESSES AND MANAGEMENT

Briefly discuss and provide comments for *each* relevant aspect of the program's review process and management. Comments should be based on a review of proposal actions (awards, declinations, and withdrawals) that were *completed within the past three fiscal years*. Provide comments for *each* program being reviewed and for those questions that are relevant to the program under review. Quantitative information may be required for some questions. Constructive comments noting areas in need of improvement are encouraged. Please do not take time to answer questions if they do not apply to the program.

A.1 Questions about the quality and effectiveness of the program's use of merit review procedures. Provide comments in the space below the question. Discuss areas of concern in the space provided.

QUALITY AND EFFECTIVENESS OF MERIT REVIEW PROCEDURES	YES, NO, DATA NOT AVAILABLE, or NOT APPLICABLE
Is the review mechanism appropriate? (panels, ad hoc reviews, site visits) **Comments: Panel reviews are used in all cases. Site visits have not been used beyond year one of the program.**	**Yes**

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[1] To be provided by NSF staff.
[2] To be provided by NSF staff.

Is the review process efficient and effective? **Comments: The timeline exceeded agency goals by about two months**	**Yes**
Are reviews consistent with priorities and criteria stated in the program's solicitations, announcements, and guidelines? **Comments: Reviewers evaluated intellectual merit and broader impact but they do not always comment on criteria such as administrative and management plans or adminstrative structure that enables faculty, academic administrators, recipients and others to interact productively**.	**Yes**
Do the individual reviews (either mail or panel) provide sufficient information for the principal investigator(s) to understand the basis for the reviewer's recommendation? Comments	**Yes**
Do the panel summaries provide sufficient information for the principal investigator(s) to understand the basis for the panel recommendation? **Comments: The panel summaries could do a better job consolidating reviewer's summaries, highlighting the most significant points that would allow applicants to refine and submit stronger proposals in the future**.	**Yes with qualifications**
Is the documentation for recommendations complete, and does the program officer provide sufficient information and justification for her/his recommendation? **Comments: In 2002, one proposal ranked above two other proposals that were funded. The program officer cited "weaknesses that put it below the level of quality for which funds are available this year" as his reason for the recommendation. However, the FY02 SFS Review Process document said the proposal "has been placed at the end of the competitive group because [the institution] received an FY01 award.**	**Yes**

Is the time to decision appropriate? Comments:	**Yes**
Discuss issues identified by the COV concerning the quality and effectiveness of the program's use of merit review procedures:	

A.2 Questions concerning the implementation of the NSF Merit Review Criteria (intellectual merit and broader impacts) by reviewers and program officers.
Provide comments in the space below the question. Discuss issues or concerns in the space provided.

IMPLEMENTATION OF NSF MERIT REVIEW CRITERIA	YES, NO, DATA NOT AVAILABLE, or NOT APPLICABLE
Have the individual reviews (either mail or panel) addressed whether the proposal contributes to both merit review criteria? Comments	**Yes**
Have the panel summary reviews addressed whether the proposal contributes to both merit review criteria? Comments:	**Yes**
Have the *review analyses* (Form 7s) addressed whether the proposal contributes to both merit review criteria? **Comments: The COV noted that the Form 7s are considerably stronger today than they were in the early years. Being the decision document, it should be as strong as possible.** **In many cases, the review analysis addresses both criteria only by reference to individual reviews and panel summaries. In contrast, one case made no reference at all to the merit review criteria.**	**Yes**

Discuss any issues or concerns the COV has identified with respect to NSF's merit review system.	

A.3 Questions concerning the selection of reviewers. Provide comments in the space below the question. Discuss areas of concern in the space provided.

SELECTION OF REVIEWERS	YES , NO, DATA NOT AVAILABLE, or NOT APPLICABLE
Did the program make use of an adequate number of reviewers for a balanced review? Comments:	**Yes**
Did the program make use of reviewers having appropriate expertise and/or qualifications? Comments:	**Yes**
Did the program make appropriate use of reviewers to reflect balance among characteristics such as geography, type of institution, and underrepresented groups? **Comments: No data was provided on the demographics of reviewers for years 01 and 02. It was noted that only I governmental person participated on a panel in 03. Since the graduates are to be placed in governmental agencies, the reviews could benefit from the input of more reviewers from governmental agencies.**	**Yes**
Did the program recognize and resolve conflicts of interest when appropriate? **Comments: The COV did not observe any possible conflicts of interest.**	**Yes**

Discuss any concerns identified that are relevant to selection of reviewers.

A.4 Questions concerning the resulting portfolio of awards under review. Provide comments in the space below the question. Discuss areas of concern in the space provided.

RESULTING PORTFOLIO OF AWARDS	APPROPRIATE, NOT APPROPRIATE, OR DATA NOT AVAILABLE
Overall quality of the research and/or education projects supported by the program. **Comments: The overall quality of education programs was rated highly by reviewers and will achieve the goal of providing high quality education to scholarship recipients. Although the program does not stress research, in most cases proposals indicated that students will have an opportunity to engage in research with faculty who have active research programs.**	**Appropriate**
Are awards appropriate in size and duration for the scope of the projects? Comments:	**Appropriate**
Does the program portfolio have an appropriate balance of: • High Risk Proposals? Comments:	**Not Applicable**
Does the program portfolio have an appropriate balance of: • Multidisciplinary Proposals? **Comments: As to be expected, all of the programs have a focus on the core disciplines in information assurance. It was also noted that most of them were designed with cross-disciplinary collaborations**.	**Appropriate**
Does the program portfolio have an appropriate balance of: • Innovative Proposals? Comments:	**Appropriate**
Does the program portfolio have an appropriate balance of: • Funding for centers, groups and awards to individuals? Comments:	**Not Applicable**

Does the program portfolio have an appropriate balance of: • Awards to new investigators? Comments:	**Appropriate**
Does the program portfolio have an appropriate balance of: • Geographical distribution of Principal Investigators? **Comments: The COV noted that the western part of the United States appeared to be underrepresented in the awards, probably because of a limited number of centers in the western part of the US.**	**Appropriate**
Does the program portfolio have an appropriate balance of: • Institutional types? Comments:	**Appropriate**
Does the program portfolio have an appropriate balance of: • Projects that integrate research and education? Comments:	**Appropriate**
Does the program portfolio have an appropriate balance: • Across disciplines and subdisciplines of the activity and of emerging opportunities? Comments:	**Appropriate for the mission of the program**
Does the program portfolio have appropriate participation of underrepresented groups? **Comments: Since preparing a diverse workforce is a key element of the program, NSF should take responsibility for gathering demographic data on scholarship recipients in order to measure the program's success.**	**Insufficient Data**
Is the program relevant to national priorities, agency mission, relevant fields and other customer needs? Include citations of relevant external reports. Comments:	**Appropriate**

Discuss any concerns identified that are relevant to the quality of the projects or the balance of the portfolio.

A.5 Management of the program under review. Please comment on:

Management of the program.

Comments: The COV commends Dr. Ernest McDuffie for his strong and effective leadership and management of the program. The COV noted significant improvements in the program under his leadership.

There is a need to establish a formal longitudinal evaluation plan to assess program outcomes and objectives met, including such measures as candidate quality, candidate diversity, retention over time, impact on universities and government, cost-effectiveness, identification of best practices.

Responsiveness of the program to emerging research and education trends.

Comments: The program is designed to address a need of national security.

Program planning and prioritization process (internal and external) that guided the development of the portfolio under review.

Comments: The program is well defined and the portfolio is developed following the plan.

Discuss any concerns identified that are relevant to the management of the program.

1. **The program must establish a process by which demographic data can be collected on the students.**
2. **The NSF must develop an outcomes assessment of the program and its objectives.**
3. **The reviewers should be given a list of certified institutions.**
4. **Efforts must be continued to place more governmental employees on the panels.**
5. **As soon as the students are selected, the security clearance process should be started. This will facilitate the placement of students into internships. It is noted that not all students will go to agencies requiring security clearances, but if the process is delayed until placement, the program runs the risk of delaying placement.**
6. **The reviewers must address all aspects of merit as described in the solicitation and the panel orientation. For example, the COV saw very few comments on evaluation plans and/or administrative and management plans.**
7. **There must be a more extensive marketing program to make governmental agencies aware of the program. The COV notes that this recommendation was included in the workshop held in August 2003 to address student placement issues.**
8. **Because of need to strengthen security throughout the government, it might be wise to allow placement of graduates within state government. Weaknesses within the states will weaken national security.**
9. **Excellent cooperation between OPM and NSF has moved the program ahead in absence of the Interagency Coordinating Committee. However, it is important to provide a home for the committee.**
10. **The COV believes that the absence of permanent employees within the program could impact the continuity of the program. The new rotator for the director should overlap with the current program director. The Program could benefit if some key persons were in permanent positions.**

NSF FY 2003 CORE QUESTIONS FOR COVs

PART B. RESULTS :   OUTPUTS AND OUTCOMES OF NSF INVESTMENTS

NSF investments produce results that appear over time. The answers to questions for this section are to be based on the COV's study of award results, which are direct and indirect accomplishments of projects supported by the program. These projects may be currently active or closed out during the previous three fiscal years. The COV review may also include consideration of significant impacts and advances that have developed since the previous COV review and are demonstrably linked to NSF investments, regardless of when the investments were made. Incremental progress made on results reported in prior fiscal years may also be considered.

The following questions are developed using the NSF outcome goals in the FY 2003 Performance Plan. The COV should look carefully at and comment on (1) noteworthy achievements of the year based on NSF awards; (2) the ways in which funded projects have collectively affected progress toward NSF's mission and strategic outcomes; and (3) expectations for future performance based on the current set of awards. NSF asks the COV to provide comments on the degree to which past investments in research and education have contributed to NSF's progress towards its annual strategic outcome goals and to its mission:
- To promote the progress of science.
- To advance national health, prosperity, and welfare.
- To secure the national defense.
- And for other purposes.

B. Please provide comments on the activity as it relates to NSF's Strategic Outcome Goals. Provide examples of outcomes (nuggets) as appropriate. Examples should reference the NSF award number, the Principal Investigator(s) names, and their institutions.

B.1 NSF OUTCOME GOAL for PEOPLE: Developing "a diverse, internationally competitive and globally engaged workforce of scientists, engineers, and well-prepared citizens."

Comments:

1. The Program has not collected demographic data on the scholarship recipients; Consequently, no assessment of this outcome could be made.

2. NSF must communicate to the awardees a clear definition of underrepresented minorities. For example, one annual report identified a US Army veteran as a member of an underrepresented group (Award number DUE 0112426).

3. Scholarship recipients should receive some training in project management because many of the federal positions require some skills in this area.

4. Faculty development activities are a strong component of several projects. Through outreach activities this program is extending institutional capability in information assurance.

5. There is a need to establish a formal longitudinal evaluation plan to assess program outcomes and objectives met, including such measures as candidate quality, candidate diversity, retention over time, impact on universities and government, cost-effectiveness, identification of best practices.

B.2 NSF OUTCOME GOAL for IDEAS: Enabling "discovery across the frontier of science and engineering, connected to learning, innovation, and service to society."

Comments: Program is designed for and connected to learning and service to society. Faculty research, while not funded directly by this program, will influence the curriculum and advance the field of information assurance.

B.3 OUTCOME GOAL for TOOLS: Providing "broadly accessible, state-of-the-art and shared research and education tools."

Comments: The Program is contributing to the development of information assurance as a discipline. Scaffolding tools, on-line and web courses; battle labs, seminars, publications and symposia to train faculty are tools by which program outcomes becomes broadly accessible and shared.

PART C. OTHER TOPICS

C.1 Please comment on any program areas in need of improvement or gaps (if any) within program areas.

 1. Since project management expertise is increasingly demanded by government, some training in project management should be incorporated into the curriculum.

 2. Also students should receive more training designed to develop interpersonal skills for job success.

C.2 Please provide comments as appropriate on the program's performance in meeting program-specific goals and objectives that are not covered by the above questions.

1. In some cases, there appears to be a mismatch between grade levels being sought by employers versus experience of students and the level they would qualify as an entering government employee

 2. While the students are receiving an excellent educational experience, many government agencies are seeking applicants with more work experience than most of these students possess. Thus, it is a concern that the program may not be addressing comprehensive government needs when only supplying lower level expertise. It may be difficult for the government to qualify these students at the higher GS levels needed

 3. Combining SFS with Co-op employment program would enable the students to gain more work experience potentially making them eligible for higher level jobs.

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 4. Only 10 –20% of major Federal agencies are taking advantage of this program, which may make placement more difficult. With better marketing of the program, placement may become even easier.

 5. Receiving security clearances earlier in the scholarship program with enhance the placement process for both internships and final placement.

 6. The COV expects that an 88% placement figure will improve over time and encourages the program to develop mechanisms to assure the students have all skills necessary to be successfully placed.

 7. The COV commends the program for hosting a workshop on placement issues.   Many of our recommendations are similar to those in the report, and where appropriate, NSF should implement them.

C.3 Please identify agency-wide issues that should be addressed by NSF to help improve the program's performance.

C.4 Please provide comments on any other issues the COV feels are relevant.

C.5 NSF would appreciate your comments on how to improve the COV review process, format and report template.

1. Future COV's should be offered an opportunity to review annual reports on-line prior to its meeting. NSF staff should give consideration as to how the COV process will change in an on-line environment.

2. It would be helpful to the COV if the program staff would provide guidance on which portions of the template are not applicable to this program.

SIGNATURE BLOCK:

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For the Committee of Visitors for the Federal Cyber Scholarship for Service (SFS) Program

Dr. William B. DeLauder, Co-Chair
Dr. Alfred Moye, Co-Chair
Dr. Alicia Jackson
Dr. Sally Rockey
Ms. Jean Schaffer
Dr. Brigitte W. Schay