CORE QUESTIONS and REPORT TEMPLATE
for
FY 2011 NSF COMMITTEE OF VISITOR (COV) REVIEWS

(Staff responses are in blue, italicized type.)

Guidance to NSF Staff: This document includes the FY 2011 set of Core Questions and the COV Report Template for use by NSF staff when preparing and conducting COVs during FY 2011. 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 <www.inside.nsf.gov/od/oia/cov>.

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 (2) managerial matters pertaining to proposal decisions.

The program(s) under review may include several sub-activities 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 sub-activities 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.

Suggested sources of information for COVs to consider are provided for each item. As indicated, a resource for NSF staff preparing data for COVs is the Enterprise Information System (EIS) –Web COV module, which can be accessed by NSF staff only at http://budg-eis-01/eisportal/default.aspx. In addition, NSF staff preparing for the COV should consider other sources of information, as appropriate for the programs under review.

For section IV addressing portfolio balance the program should provide the COV with a statement of the program's portfolio goals and ask specific questions about the program under review. Some suggestions regarding portfolio dimensions are given on the template. These suggestions will not be appropriate for all programs.

Guidance to the COV: The COV report should provide a balanced assessment of NSF's performance in the integrity and efficiency of the ***processes*** related to proposal review. 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.*** The reports generated by COVs are made available to the public.

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. For past COV reports, please see http://www.nsf.gov/od/oia/activities/cov/covs.jsp.

FY 2011 REPORT TEMPLATE FOR
NSF COMMITTEES OF VISITORS (COVs)

The table below should be completed by program staff.

Date of COV: May 2, 2011 – May 3, 2011
Program/Cluster/Section: Federal Cyber Service: Scholarship for Service (SFS) program
Division: Division of Undergraduate Education (DUE)
Directorate: Education and Human Resources (EHR)
Number of actions reviewed: **Awards: 20** **Declinations: 16** **Other: N/A**
Total number of actions within Program/Cluster/Division during period under review: **Awards:52** **Declinations: 136** **Other: N/A**
Manner in which reviewed actions were selected: The NSF staff randomly selected award jackets and declinations for the SFS COV review by using a similar method as other programs. Proposals were first sorted by track (Scholarship and Capacity Building) into their fiscal year of funding (there were four years of funding) with awards and declines put into separate categories in each of the above sorts. This resulted in eight different bins for awards and eight for declines. The top and bottom proposal on the list (sorted by proposal identification number) were selected in each category. For the Scholarship track awards, the top two and bottom one proposal were selected. If a non-lead collaborative proposal was randomly selected, NSF staff replaced it with the lead proposal of the collaborative. This resulted in a list that comprised approximately 20% of all proposals submitted to SFS during FY 2007, 2008, 2009, and 2010. These proposals consisted of 20 awards and 16 declines. The selection process chosen for SFS was pre-approved by the Session Chair of the COV.

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.

Introductory COV Comments

The COV expresses their appreciation to the NSF staff and SFS program staff for providing excellent support, extensive documentation, and a very effective technological system through eJacket.

The COV recognizes the effectiveness of the program in its efforts to produce a large number of graduates who will meet a growing government need for cybersecurity personnel.

I. Questions about the quality and effectiveness of the program's use of merit review process. Please answer the following questions about the effectiveness of the merit review process and provide comments or concerns in the space below the question**.**

QUALITY AND EFFECTIVENESS OF MERIT REVIEW PROCESS	YES, NO, DATA NOT AVAILABLE, or NOT APPLICABLE
1. Are the review methods (for example, panel, ad hoc, site visits) appropriate? Comments: The review methods are appropriate. They provide ample time for review and discussion of each proposal. No site visits occurred or were considered necessary; however, interaction with current and prospective PIs occurred during professional meetings and conferences. *No response needed.*	**Yes**
2. Are both merit review criteria addressed a) In individual reviews? b) In panel summaries? c) In Program Officer review analyses?	**a) Yes** **b) Yes** **c) Yes**

Comments: It may be useful to provide the panel reviewers with a sample of an effective review. This may be especially useful for the novice reviewer. *We appreciate the COV's suggestion to provide panelists with sample reviews. Giving panels' actual reviews is problematic because of issues of confidentiality and because some reviewers may tend to follow the samples too closely and thereby limit their scrutiny of important issues in proposals. However, in webinars, orientations, and the other instructions we give to reviewers, we will address more explicitly the structure that good reviews should take and the issues they should address, and we will stress the importance of providing as much substantive information as possible in both the individual reviews and the panel summaries.* The COV members were surprised by the variance in proposal scores – both awarded and declined – and the closeness between scores of awards and declines. The COV recommends five crisp statements clearly explaining to reviewers the interpretation of the five scoring terms (i.e. creating a detailed rubric of the scoring terms). *We will clearly define the five scoring terms, as they are defined on the official NSF review form, in the webinars, orientation presentations, and other instructions given to SFS reviewers.* Although the program solicitation lists a range of review criteria for the program (e.g. quality, relevance, impact; student learning outcomes; sustainability; expected measurable outcomes; project evaluation; integration of research and education; diversity), the reviews focus primarily on intellectual merit and broader impacts without regarding each criterion listed in the solicitation. For the SFS program, the COV thinks criteria such as sustainability, expected measurable outcomes, project evaluation, and diversity are especially important and worthy of specific attention during the review process. The COV recommends that Program Officers take three actions: • determine which criteria are especially important for a program such as SFS, • remove from the solicitation review criteria that will not be used during the review, and • direct reviewers to consider all relevant criteria during the review process. *We appreciate the COV's recommended actions and will carefully review the SFS-specific review criteria when revising the solicitation for the next funding cycle. We will condense and clarify the SFS-specific criteria in the solicitation and call reviewers' attention to those criteria during the webinars and orientation presentations.*	
3. Do the individual reviewers provide substantive comments to explain their assessment of the proposals?	**Yes**

Comments: It varies. Overall, the reviewers seem to do a credible job. The COV members recognized some disparity in the quality of reviews. Greater attention needs to be paid to the justification of the rating, especially in the case of low ratings. Reviewers should be advised to offer brief suggestions for how a poorly-rated applicant can improve. The COV noticed some discrepancy in the way reviewers treat very well-known and less-known institutions. The degree of skepticism and required level of justification given to lesser-known institutions exceeds that given to well-known institutions. Individual reviewer comments are not always substantive. The panel summaries and particularly the review analysis are the most useful for providing feedback. *We will continue to guide reviewers to provide as much substantive information as possible in both the individual reviews and the panel summaries. During panel orientations reviewers will be encouraged to offer constructive suggestions for improvement of proposals, particularly poorly-rated ones. We will also advise reviewers to be careful about their implicit biases regarding institutions and PIs and to evaluate all proposals using the same set of expectations, regardless of the submitting institution or PI.*	
4. Do the panel summaries provide the rationale for the panel consensus (or reasons consensus was not reached)? Comments: The panel summaries provide adequate rationale and describe the consensus as well as the concerns raised by individual reviewers. *No response needed.*	**Yes**
5. Does the documentation in the jacket provide the rationale for the award/decline decision? (Note: Documentation in jacket usually includes context statement, individual reviews, panel summary (if applicable), site visit reports (if applicable), Program Officer review analysis, and staff diary notes.) Comments: The documentation in the jacket is a good compendium of the action concerning an individual proposal. The trail from individual reviews to panel summary to Program Officer's analysis to decision is generally clear and consistent. The COV noticed a disparity in some comments within review summaries. For example, one NSF Program Director's summary review of one proposal states, "The university and its programs are world-class, and previous graduates have done extraordinarily well," and "There was a lack of detail	**Yes**

concerning results from the previous SFS award (particularly student placement statistics)." How are these two statements compatible? *NSF staff has access to information which is not included in the proposals, including results provided in annual and final reports for previously funded projects and information gathered during site visits. Care will be taken to make the sources of contradictory information clear in the review analysis and to describe the relationship of that information in the context of the decision.*	
6. Does the documentation to PI provide the rationale for the award/decline decision? (Note: Documentation to PI usually includes context statement, individual reviews, panel summary (if applicable), site visit reports (if applicable), and, if not otherwise provided in the panel summary, an explanation from the Program Officer (written or telephoned with diary note in jacket) of the basis for a declination.) Comments: Since the PO letter to the PI is general in nature, the panelists ought to be strongly encouraged to write specific comments to support their rating and address both criteria adequately and specifically. The COV members encourage the Program Officer to emphasize concerns raised by the panelists in programs that are funded either in the letter to the PI or as part of the correspondence. *It is standard practice to ask prospective award recipients to address concerns raised in the panel summary. Care will be taken to ensure that these questions and the PI responses are uploaded to eJacket and discussed in the Review Analysis. Diary notes of related conversations also will be added to the file.* The COV recommends that a more specific rationale be provided for declinations. *Program staff will continue to work to provide as much information as possible to PIs. Given the tremendous proposal pressure faced by POs, some boilerplate text is necessary to meet processing goals. Nonetheless, we will work within the time constraints to provide PIs with the information they need to understand the PO recommendations. This is particularly important for those proposals that are highly rated, but not funded.*	**Yes**
7. Additional comments on the quality and effectiveness of the program's use of merit review process: The program uses the merit process effectively and advantageously. A strong review process is essential to the quality of the program. As already noted in the 2007 COV report, several proposals (specifically declines) received "boilerplate" form letters with little specific information,	

despite relatively high (fundable) scores. It would be more effective to integrate information and rationales from the panel summary and/or review analysis. *Please see the response to question I.6. above.*	

II. Questions concerning the selection of reviewers. Please answer the following questions about the selection of reviewers and provide comments or concerns in the space below the question**.**

SELECTION OF REVIEWERS	**YES , NO, DATA NOT AVAILABLE, or NOT APPLICABLE**
1. Did the program make use of reviewers having appropriate expertise and/or qualifications? Comments: In its 2007 review, the COV noted the preponderance of reviewers who were faculty members in CS/IS/IT departments; the 2007 COV recommended expanding the reviewer base to include practitioners from industry and government. The proposals jackets for this review include a number of government personnel, although the number of industrial partners is still small (in the reviewed sample). Obviously, most reviewers need to come from the field of information assurance. This COV recommends expanding participation by reviewers from other disciplines — such as the social sciences and/or education — who might identify qualities in a proposal different from those a CS/IS/IT faculty member would notice: A noticeable weakness in proposals has been evaluation (by the proposing institution) that could demonstrate the effectiveness of funded activity after the fact. A reviewer from a discipline more used to experimentation and evaluation would help to ensure a solid methodology before project initiation. *We increasingly invite reviewers from a variety of backgrounds to serve on the panels, and every attempt is made to diversify the review panels on a host of factors including academic background and employment sector. We have increased the number of invitations sent to evaluators and educational research faculty and although the number of these reviewers continues to increase, it is a slow process. We will intensify our efforts in this area in order to achieve the most appropriate diversity and balance of panel reviewers.*	**Yes**
2. Did the program recognize and resolve conflicts of interest when appropriate? Comments: *No response needed.*	**Yes**
Additional comments on reviewer selection:	

III. Questions concerning the management of the program under review. Please comment on the following:

MANAGEMENT OF THE PROGRAM UNDER REVIEW
1. Management of the program. Comments: The charge to the COV was to consider four issues: 1. The quality and integrity of program operations and program-level technical and managerial matters pertaining to proposal decisions. 2. The quality of project management, monitoring, and evaluation of funded proposals. 3. The results of the SFS investment related to national priorities in cybersecurity education and workforce development, the NSF mission and other constituent needs. 4. Opportunities to more fully realize the potential of the SFS program. The COV commends the NSF staff for the quality and integrity of the program's operation and management. Although we offer suggestions for improvement, we think these are enhancements to a program that already functions effectively to increase the supply of information assurance employees within the government. The SFS program is managed by a Lead Program Director, Co-Lead Program Director, two Program Directors, and three staff members. While these professionals are involved in other NSF programs as well, there is a clear commitment on the part of NSF to the SFS program. One reviewer of one proposal raised an interesting sustainability question: Regarding a proposal from a well-established, popular, and apparently successful program, in which SFS had become a relatively small proportion of enrolled students, at what point is it appropriate to shift (renewal) funding away from a successful and probably self-sustaining program toward a different institution just establishing a program? This programmatic question clearly has no easy answer, but it is one the program's management should consider. Additionally, the amount of funding given to an institution has a varied impact depending on the expense of each institution. *The program staff appreciates the COV's comments on the SFS program's operation and management.* *The SFS Program Directors continually wrestle with the question of how to allocate funds between new and established scholarship programs, and they also ask reviewers to consider this issue as they evaluate sets of proposals. For future solicitations, we are considering adding criteria for project renewals, including evidence of the institutionalization of the program and measures of success of the students. We are also considering separating the review of new proposals from renewal proposals.*

2. Responsiveness of the program to emerging research and education opportunities.

Comments:
The impressive number of SFS leadership activities attests to the responsiveness of the SFS program to the educational opportunities. Likewise, the presence of SFS in recent and broad-based publications such as "A Human Capital Crisis in Cybersecurity: A White Paper of the CSIS Commission on Cybersecurity for the 44th Presidency" (2010) and the "2010 State of Cybersecurity from the Federal CISO's Perspective – An (ISC)2 Report" are indicative of the responsiveness of the SFS program to the emerging research and discipline development and growth.

No response needed.

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

Comments:
The budget allocation is a clear indication of the program prioritization with the major portion of the budget (>90% in the last two years) devoted to the Scholarship Track. The COV recognizes the need for capacity and infrastructure building in institutions that are not yet eligible for the scholarship track, with a hope that they, too, will attain that status in the future.

The COV also sees the need for providing greater opportunity to students in regions that are not as prominent in IA education.

The COV recommends that SFS establish/pilot "small regional IA centers" built around CAE institutions and/or similar institutions with strong programs and through partnerships with regional colleges and universities.

The COV recommends that institutions with an established scholarship track also partner with other institutions to build capacity.

The SFS program's mandate to maintain 300 scholarship recipients resulted in fewer capacity building awards over the last several years. With the expected SFS budget increase in FY2012, the percentage of capacity building awards will very likely increase.

The current SFS budget allows maintaining only about 40 scholarship schools but all of them recruit from a large geographical area so students from other regions have equal chances to become the SFS scholars.

The program staff appreciates the idea of regional centers, as well as a formal requirement to form partnerships and will consider them for the forthcoming solicitations. We plan to study centers that have already been established for similar NSF programs in order to determine whether this model would be appropriate for SFS, particularly for supporting the development of IA programs in schools that do not currently have prominent programs.

4. Responsiveness of program to previous COV comments and recommendations.

Comments:

The Report that provides the response of the SFS program to the previous COV Report and especially the 2011 Update attests to the care and seriousness with which the NSF is treating COV recommendations.

The COV noticed that the concerns raised by this COV are similar to those raised by the 2007 COV and the 2008 OPM report.

No response needed.

IV. Questions about Portfolio. Please answer the following about the portfolio of awards made by the program/s under review.

RESULTING PORTFOLIO OF AWARDS	APPROPRIATE, NOT APPROPRIATE, OR DATA NOT AVAILABLE
1. Does the program portfolio have an appropriate balance of awards across disciplines and sub disciplines of the activity? Comments: While the entire program is focused on the field of cybersecurity, SFS projects reside in various departments in different institutions: engineering, computer science, technology, public policy, etc., giving the programs a different emphasis. *No response needed.*	**Appropriate**
2. Are awards appropriate in size and duration for the scope of the projects? Comments: The SFS awards to students are limited to two years. The COV discussed whether that duration is appropriate for all students – at the bachelor's, master's, and doctoral levels; the COV reached no conclusion and offers no specific recommendation on that topic. However, the COV provides some alternative timeframe suggestions under the "other topics" section. Because SFS awards cover a student's tuition, the amount of award will be larger for institutions with higher tuition rates, and thus fewer students are served for an equal amount of funding. The COV discussed this effect but reached no conclusion and offers no recommendation on that issue. *No response needed.*	**Appropriate**
3. Does the program portfolio include awards for projects that are innovative or potentially transformative? Comments:	**Not Applicable**
4. Does the program portfolio include inter- and multi- disciplinary projects? Comments: The COV noted one funded proposal (Proposal Number 0910476) that involved information assurance as related to the healthcare domain, leading to a dual master's program. This SFS activity was a successful	**Appropriate**

outcome from a previous capacity-building activity, and is an example of inter-disciplinary work. The COV suggests that NSF highlight innovative projects and encourage other institutions to think creatively to develop other programs that are inter- and multi-disciplinary. *NSF continually strives to inform the public about innovative projects through a variety of mechanisms, including the NSF external website, the research.gov SEE Innovation website, PI meetings, and NSF annual reports. Many programs within DUE, and NSF as a whole, encourage proposals to increase synergy and collaboration across disciplines and across institutions. In addition, the SFS team will identify and submit descriptions of our innovative programs through the NSF system that publicizes NSF research to the general public, although we cannot guarantee that any of our projects will be selected for the NSF home page.*	
5. Does the program portfolio have an appropriate geographical distribution of Principal Investigators? Comments: The geographical distribution of the awards is equitable with somewhat higher distribution in the Northeastern region of the country. While the COV recognizes the need to have an equitable geographical distribution, it also recognizes the much greater concentration of government jobs in the Northeastern and Western parts of the country resulting in a greater need for SFS scholars in these regions. *No response needed.*	**Appropriate**
6. Does the program portfolio have an appropriate balance of awards to different types of institutions? Comments : The doctoral/Ph.D. granting institutions dominate the SFS funding support. However, the COV noticed the slight shift in institutional support from the exclusive support of the doctoral/Ph.D. institutions in FY 2007 to a somewhat more balanced support of all three types of institutions (four-year BA/BS, MS/MA, and doctoral/Ph.D.) in FY 2010. Likewise, during the same four-year period we saw a shift in funding to a greater percentage of public institutions. The funding support to minority-serving institutions remained the same during the last four years. To answer this question accurately, the COV would need demand analysis data showing the number and kinds of positions for which the government has need. This COV has a recommendation on general data acquisition regarding this program, which is presented later in the report. *The program staff agrees there is an urgent need for comprehensive data acquisition. By September 2012, SFS and OPM's Human Resources*	**Appropriate**

Solution (HRS) will implement SFS Annual Quality Monitoring survey. By September 2013, SFS and HRS will complete the evaluation report based on the data collected from the new monitoring system. In particular, HRS will: conduct a workforce analysis examining the projected demand for IT employees in the Federal government and SFS's ability to meet those needs; survey SFS employers to assess the competencies required in IT occupations in the Federal government and the extent to which SFS graduates are proficient in those competencies; and conduct five surveys (University PIs and Faculty, Students, Graduates, Agency Supervisors, and Agency HR Contacts) and interviews with University PIs and Faculty, and also agency supervisors and HR contacts. The final report will demonstrate the degree to which there is correspondence between the students graduated from SFS programs and the employment opportunities in the field.	
7. Does the program portfolio have an appropriate balance of awards to new investigators? NOTE: A new investigator is an investigator who has not been a PI on a previously funded NSF grant. Comments: The number of awards to the new investigators has decreased from 50% in 2006 to below 30% in FY 2009. The COV recognizes that institutions with established programs and credibility are likely to have stronger proposals. However, there is a concern with strengthening and "growing" programs in less well established institutions. *The capacity building track is used to help strengthen and grow IA programs. In future solicitations, we plan to increase funding for capacity building. We also have several activities designed to bring new investigators into the SFS program. These include webinars and workshops on the SFS program as well as our practice of inviting prospective investigators to attend the SFS Bootcamp, the orientation program for newly awarded PIs.*	**Appropriate**
8. Does the program portfolio include projects that integrate research and education? Comments: While the SFS program has no particular focus on research, the panelists rate highly the PIs with research experience and recognize the value of program research. One example is the Florida State University program (Proposal Number 1027217) where the panelists recognized the value of research and noted that recognition in their reviews. *No response needed.*	**Not Applicable**
9. Does the program portfolio have appropriate participation of underrepresented groups?	**Appropriate**

Comments: The proportion of women and underrepresented groups in SFS awards matches closely with that of the federal ITC workforce. The SFS program specifically targets these groups, yet its achievement is not significantly better than the hiring outcomes of the federal government at large. The COV encourages the NSF to examine this result and determine if there are other measures the NSF should be taking to improve the representation of women and underrepresented groups. The COV recommends that the NSF continue to investigate ways of improving the capacity building for women and other underrepresented groups. *SFS has funded and will continue to fund projects that encourage women and underrepresented minorities in the field of IA. For example, one SFS-funded project created a sequence of experiences for women in IA, starting with summer-camps for high school girls, research experiences for undergraduate women starting in their first year of college, through internships and job placements with federal agencies as they progress through the program. In addition, the Interagency Coordinating Committee (ICC), which oversees the SFS program, has a strong female representation, and we will bring this issue to the next ICC meeting for strategic planning.* *The SFS team is preparing a new solicitation that will applicants in both the scholarship and capacity building tracks to address the issue of attracting more underrepresented minorities, women, and veterans to the field of cybersecurity.*	
10. Is the program relevant to national priorities, agency mission, relevant fields and other constituent needs? Include citations of relevant external reports. Comments: The SFS program is clearly responding to a critical national priority in an effective manner. *No response needed.*	**Appropriate**
11. Additional comments on the quality of the projects or the balance of the portfolio:	

OTHER TOPICS

1. The SFS program contributes to a vision of a secure digital nation through innovative and widespread cybersecurity education. Are there possible changes to the program that you would suggest that could help in developing a robust, unrivaled cybersecurity workforce for the Federal government?

The COV considers SFS to be a strong program that builds the cybersecurity workforce effectively. However, a better understanding of workforce needs at the Ph.D., MS, BA, and associate's degree levels would contribute to future program development and improvement.

A needs assessment on demand for information assurance professionals on varying educational levels could provide inside for shaping the program in the future. Additionally, such a study would help to identify pathways of career advancement within the federal government workforce.

Please see the response to question IV.6. above.

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.

The SFS program meets the program-specific goals. However, the best measures of its success are data regarding not only the placement of the SFS students in government jobs, but their retention in government and satisfaction with the job.

The COV strongly recommends the SFS Program Officers develop a means to track program graduates for five to ten years after they graduate from an SFS program.

The 2007 COV review included the recommendation:

> The SFS program should obtain statistics on the retention of SFS graduates in federal employment after the end of their two-year commitment. This would give Principal Investigators and the lead Program Director data that could help them understand the features of agencies and institutions that lead to long-term federal employment.

NSF program management has stated that collecting such statistics is difficult because of program graduates who take government jobs in the intelligence community. Granted, the job description, job title, or even employer might be sensitive, but the fact of being employed within the general field of IA by an agency of a federal, state, local, or tribal government cannot be sensitive. A simple "yes" or "no" and year of graduation/degree is sufficient for collection of statistics showing the program's lasting impact. Alternatively, a classified longitudinal study of SFS graduates and their positions could be performed.

NSF has done an excellent job of tracking Ph.D. recipients in science and engineering. Collection of data for this program is imperative in order to show the value of this program, to justify continued or increased funding, and to serve as a model for other NSF activities of this nature.

Five-year or ten-year longitudinal data are difficult to collect, but this COV reiterates the 2007 recommendation regarding the importance of doing so in a methodologically sound manner.

OPM's Human Resources Solution has been asked to evaluate the SFS program including a study of the scholarship recipients from recruitment into the scholarship program, over the course of their scholarship support, through their placement and completion of the service requirement, and

continued employment after completion of the required service. Appropriate funding was made available in 2011. Results of the analysis are expected by September 2013.

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

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

COV recommends that the SFS program elicit ideas about program modifications to include a more systemic capacity building expanded to 3-4 years in duration to allow for mentorship, program strengthening, etc.

Likewise, COV recommends that consideration be given for building pipelines: Associate-Baccalaureate program, BS-MS and/or MS-Ph.D.

Furthermore, the COV suggests that NSF consider the timing of awards to students. The undergraduate award comes at the end of a student's bachelor's program, the master's award covers the entire two years of an ordinary master's program, and the Ph.D. award covers an expected final two years of that program. Is an award that covers an entire program, the end of a program, or some part of a program an appropriate model? Similarly, the internship requirement in a Ph.D. program interrupts an intensive period of focused research. It might be more appropriate for these students to serve a post-doctoral internship.

The SFS program staff appreciates these interesting ideas and will consider them for the upcoming solicitations. The SFS program funded several small pilots to investigate pipeline building issues. For example, it seems quite promising to extend the scholarship to three years to cover the last year of a two-year college program plus two additional years in a four-year institution. Similarly, a 3-year scholarship could be used to support "fast track" students who receive a combined bachelor/master degrees in a five-year accelerated program.

The suggestion to allow internship flexibility for doctorate-level students is well received. In fact, a pending legislation H.R. 2096, proposes even more changes for Ph.D. students. For example, the proposed bill would allow SFS students to satisfy their commitment by teaching cybersecurity.

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

The review process is very effective and well organized. Especially, the access to the electronic resources helps in the process. Some minor recommendations for improving future COVs include:

- Provide access to key resources in advance, so that reviewers can arrive at NSF more prepared (e.g. read proposals from home).
- Further reduce the amount of hard copies provided to reviewers (two-three folders with hard copies may have been sufficient for this group and could have reduced resource costs and increased environmental friendliness).

In future COV processes, the SFS team will provide advance, electronic access to key resources. In addition, the number of hard copies will be reduced in future years. As the era of paper jackets draws to a close, it may be possible to eliminate hard copy entirely.

SIGNATURE BLOCK:

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For the Scholarship for Service
Dr. Vera Zdravkovich
Chair