

## FY 2014 REPORT TEMPLATE FOR NSF COMMITTEES OF VISITORS (COVs)

The table below should be completed by program staff.

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| <b>Date of COV: December 15-16, 2014</b>   |
| <b>Program/Cluster/Section:</b> CyberCorps®: Scholarship for Service (SFS)   |
| <b>Division:</b> Division of Graduate Education (DGE)  |
| <b>Directorate:</b> Directorate for Education and Human Resources (EHR)  |
| <b>Number of actions reviewed:</b><br><br><b>Awards: 30</b><br><br><b>Declinations: 21</b><br><br><b>Other:</b>  |
| <b>Total number of actions within Program/Cluster/Division during period under review:</b><br><br>Awards: 88 [2011 (20), 2012 (43), 2013 (25)]<br><br>Declinations: 253 [2011 (47), 2012 (117), 2013 (89)]<br><br><b>Other:</b>  |
| <b>Manner in which reviewed actions were selected:</b><br><br><p>A combination of random sampling techniques were employed to select the 51 proposals for the SFS COV review. The selection methodology was as follows: The COV Chair was asked to pick three single-digit numbers (2, 6, 9), which were then used to create a sample of proposals from each of the three fiscal years (2011, 2012 and 2013) by pulling proposals with IDs ending with one of the corresponding numbers. For cases in which a non-lead proposal was selected, the lead proposal of the collaborative set replaced the selected proposal. Approximately 15% of the proposals from each fiscal year were sampled, 60% of which were awards and 40% declines. If the selection produced by the digit-based method was not sufficiently large, a random number generator was used to assign each proposal a four-digit number. Proposals with the lowest random numbers were then added until the 15% threshold was satisfied.</p> |

### COV Membership

|                                | <b>Name</b>            | <b>Affiliation</b>  |
|--------------------------------|------------------------|---|
| <b>COV Chair or Co-Chairs:</b> | Dr. Karen Klomparens   | Michigan State University   |
|                                | Dr. Loretta A. Moore   | Jackson State University  |
| <b>COV Members:</b>            | Mr. Steven Hernandez   | U.S. Department of Health and Human Services  |
|                                | Dr. Heather M. Prather | U.S. Office of Personnel Management   |
|                                | Mr. W. Hord Tipton     | International Information Systems Security Certification Consortium, Inc., (ISC) <sup>2</sup> |

## 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(s) under review. Quantitative information may be required for some questions. Constructive comments noting areas in need of improvement are encouraged.

**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 |
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| <p>1. Are the review methods (for example, panel, ad hoc, site visits) appropriate?</p> <p>Yes</p> <p>Comments:</p> <p>The use of panels for the review of proposals is very appropriate. This review method allows ample time for the prior review of proposals and facilitates onsite discussion of each proposal by a diverse group of reviewers. All processes appear to be in order with good documentation, detailed reviews, and panel summaries.</p> <p>The panelist introduction package was well organized, provided detailed information regarding travel logistics and criteria for reviewing proposals, and encouraged quality reviews in alignment with NSF's two merit review criteria.</p> <p><b>Background Material: I. Merit Review (Panelist Intro Package, Webinar, Orientation etc.)</b><br/> <b>Data Source: I. Merit Review (Selected Jackets)</b></p> | Yes  |
| <p>2. Are both merit review criteria addressed</p> <p>a) In individual reviews?<br/>Yes.</p> <p>b) In panel summaries?<br/>Yes.</p>   | Yes  |

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| <p>c) In Program Officer review analyses?<br/>Yes</p> <p>Comments:</p> <p>The individual reviewers addressed both merit review criteria. Overall, the individual reviewers provided thorough and thoughtful reviews. Strengths were consistently addressed; however in some cases weaknesses were sparse.</p> <p>The panel summaries addressed both merit review criteria; however the thoroughness varied. Some were very short, and some others used exact passages from the reviews. Overall, these summaries did an excellent job of integrating the individual reviewer’s comments and concerns, providing practical considerations in implementation of the activities and evaluation of the outcomes, and providing suggestions of what to address in the case of future re-submissions.</p> <p>The Program Officer (PO) provided thorough review analyses addressing both intellectual merit and broader impact review criteria. Some jackets contained statements alluding that the panel’s narrative did not match their rating. It was also noted by the COV that a few decisions for funding were based on the judgment of the PO and were not consistent with the ratings. There was further explanation in these instances.</p> <p><b>Background Material: I. Merit Review (Panelist Intro Package, Webinar, Orientation etc.)</b><br/><b>Data Source: I. Merit Review (Selected Jackets)</b></p> |  |
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| <p>3. Do the individual reviewers giving written reviews provide substantive comments to explain their assessment of the proposals?</p> <p>Yes, for the most part.</p> <p>Comments:</p> <p>The majority of the reviewers provided substantive comments to explain their assessment. Some comments were quite brief and/or did not contain ample feedback in order for Principal Investigators to understand what revisions would be helpful in future re-submissions. If program maturity is used as criteria for declination of a proposal, ample explanation of these weaknesses should be provided. Greater attention needs to be paid to the justification of the rating.</p> <p><u>COV Recommendation:</u> Provide adequate staffing of panels (i.e., science assistants) to ensure that the text of reviews corresponds to the rating. Continue training of panelists through pre-webinar, panelist introduction package, and onsite presentation to ensure consistent and thorough reviews.</p> <p><i>EHR Response, May 2015: The CyberCorps SFS Program Team will work to allocate additional resources to ensure that the text of reviews corresponds to the rating, and that reviewers produce quality reviews and panel summaries. SFS Program Officers will continue to work to make sure that panelists are well-prepared for the review process by using webinars, a panel introductory</i></p> | <p>Yes</p> |
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*package and orientation. WebEx webinars will be recorded so that panelists who are not able to join at a particular time and date will have the option to watch it at different times and dates. In addition, contact information for the program officers will continue to be provided so that panelists may ask questions asynchronously.*

**Data Source: I. Merit Review (Selected Jackets - see individual reviews)**

4. Do the panel summaries provide the rationale for the panel consensus (or reasons consensus was not reached)?

Yes

Yes

Comments:

The panel summaries provided a summary of the intellectual merit and broader impacts of the proposal, which indicates the rationale for the panel's recommendation. Concerns raised by the panel were also included for the majority of the reviews. The panel summary did not contain a statement of the panel's recommendation. This should be addressed by the adoption of the new proposal review template, which includes sections for suggested improvements, conclusions justifying the panel's recommendations, and the panel recommendations.

**Data Source: I. Merit Review (Selected Jackets - see panel summaries)**

5. Does the documentation in the jacket provide the rationale for the award/decline decision?

Yes

[Note: Documentation in the jacket usually includes a context statement, individual reviews, panel summary (if applicable), site visit reports (if applicable), program officer review analysis, and staff diary notes.]

Yes

Comments:

The jackets articulated strengths and weaknesses; however some did not provide suggestions for further improvement.

COV Recommendation: Expand on why applications did not receive funding. Project summary should be clear as to why the project was declined. The adoption of the new proposal review template should ensure that the documentation in the jacket addresses the rationale for why applications might not receive funding.

*EHR Response, May 2015: Program officers will work to increase the quality of panel summaries and to improve their communications for the reasons for NSF decisions to applicants. NSF receives many more excellent proposals than can be funded and, as a result, proposals that receive high ratings/rankings may not be funded. PIs receive context statements with overall competition statistics as well as Program Officer comments addressing issues in a particular proposal. The SFS program will use its new Panel Summary template.*

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| <p><b>Background Material: III. Management (Context Statements)</b><br/> <b>Data Source: I. Merit Review (Selected Jackets - see review analysis)</b></p> |  |
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| <p>6. Does the documentation to the PI provide the rationale for the award/decline decision?</p> <p>Yes</p> <p>[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 in the PO Comments field or emailed with a copy in the jacket, or telephoned with a diary note in the jacket) of the basis for a declination.]</p> <p>Comments:</p> <p>The combination of individual reviews, the panel summary, the context statement, and the program officer letter provides adequate rationale for the award/decline decision. In most cases the Program Officer letter contained a recap of the major factor(s) in the decision to decline funding.</p> <p>Reviewers should be encouraged to provide specific comments to support ratings, especially where proposals might not be funded. Not all declinations included a specific rationale for the decision. A suggestion of providing improvements for future submissions would be helpful in a competitive environment.</p> <p>There were a few jackets (3 or 4 instances) where there appeared to be some inconsistencies between the reviewers' ratings, panel summaries, and the final decisions. In some cases it appeared that some reviewers did not fully understand what they were looking for in terms of criteria. There was one specific instance where a PO recommended a low competitive proposal for funding without a sufficient rationale. After the internal review of the PO's recommendation, appropriate steps were taken to ensure that such cases include a detailed discussion and a sufficient rationale.</p> <p>The adoption of the new template will ensure that documentation to the PI provides the rationale for the award/decline decision.</p> | <p>Yes</p> |
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| <p><b>Background Material: III. Management (Context Statements)</b><br/><b>Data Source: I. Merit Review (Selected Jackets - see PO comments, reviews, panel summary)</b></p> |  |
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**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 |
|--|---|
| <p>1. Did the program make use of reviewers having appropriate expertise and/or qualifications?</p> <p>Yes</p> <p>Comments:</p> <p>The majority of reviewers brought on were pioneers/leaders in their respective fields of expertise. There was excellent use of diversity, education, and backgrounds. The majority of reviewers were from computer sciences (70%), with reviewers from other disciplines and fields making up approximately 30% of the reviewer pool. These other fields included computer education, business management, sciences, and social sciences (suggest increasing these reviewers).</p> <p><u>COV Recommendation:</u> The last COV report recommended the pool of reviewers be enhanced to include practitioners from private industry and government. Based on the demographics of the reviewers provided, the percentage of government reviewers declined from 14.8% in FY 2011 to 4.4% in FY 2013. There were no reviewers from business/industry from FY 2011 to FY 2013. The COV recommends actively recruiting government reviewers and reviewers from organizations serving government cybersecurity needs.</p> <p><i>EHR Response, May 2015: A major challenge in this effort is to identify reviewers from government or business/industry that would be able to devote 20-40 hours of reading and writing and two additional days for the panel meeting. The SFS program has experienced several cases of government and industry reviewers withdrawing from panels as late as the morning of the panel or not returning for the second day. Nevertheless, SFS program officers will work to secure the participation of quality government reviewers and reviewers from organizations serving government cybersecurity needs.</i></p> <p><b>Data Source: I. Merit Review (Selected Jackets); II. Reviewers (List, By Institution Type, Gender, Minority and Disability)</b></p> | <p>Yes</p>                                      |
| <p>2. Did the program recognize and resolve conflicts of interest when appropriate?</p> <p>Yes</p> <p>Comments:</p>  | <p>Yes</p>                                      |



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| <p>Conflicts of interest occurred and those reviewers were excused from the review.</p> <p><b>Background Material: I. Merit Review (Panelist Intro Package, Webinar, Orientation – see COI information and forms)</b></p> <p><b>Data Source: I. Merit Review (Selected Jackets- see review analysis for COI statements)</b></p>   |  |
| <p>Additional comments on reviewer selection:</p> <p><u>COV Recommendation:</u> Continue to increase diversity of reviewers to reflect the program’s goals and needs. The program should look to diversify reviewer backgrounds to include behavioral sciences and possibly law.</p> <p><i>EHR Response, May 2015: NSF implements an interdisciplinary approach to Cybersecurity, as demonstrated by cross-agency programs such as Secure and Trustworthy Cyberspace (SaTC), which uses a holistic approach. SFS program officers will work to diversify reviewers’ backgrounds by recruiting scientists from social and behavioral disciplines as well as with backgrounds in law.</i></p> |  |

**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 management of the program presents the program as well structured, repeatable, and mature. Documented processes and policies speak to the approach of the program and also the expectations of management and reviewers. There are multiple agencies and stakeholders (i.e., NSF, OPM, and ICC advisory board) involved in the management of the program, which reflects the vast and growing needs of cybersecurity and the inclusiveness of the SFS program. In addition, the on-going OPM program evaluation tracks the progress of the program and provides recommendations to the program offices to improve the program.

Furthermore, by including the Interagency Coordinating Committee (ICC) advisory board, the SFS program ensures participation of experts across the federal government to address concerns in cybersecurity. NSF also leads the ICC that meets three times a year and includes agency representatives.

The Job Fair is an outstanding success and the program has made significant strides in meeting diversity and quality goals. It brings together stakeholders to share ideas and research and to provide recommendations for managing the program.

The current lead of the program has been a strong force in the program for many years and is highly recognized in the SFS community as providing a vision for this program. When the program was housed in the Division for Undergraduate Education (DUE) the lead only provided 25% of time to the SFS program. There were an additional four POs that provided 12-20% of time, which may have contributed to variations in recommendations. The move to the Division of Graduate Education (DGE) has, among its benefits, a greater time commitment on the part of the lead PO and the addition of a second PO at approximately 75% time, which should contribute to the program's continuity and its ability to really address the strategic initiatives.

The dwell time increased overall in FY 2013 from FY 2012. The negative impacts of Government budget resolution issues contributed to the delays.

COV Recommendation: Continue to provide overall staffing support to the program lead in recognition of the significance of this program to the nation's security. Increase the marketing and outreach efforts for recruitment of diverse students, minority serving institutions, and Principal Investigators from underrepresented groups. Continue to leverage relationships with all constituent groups, such as the Interagency Coordinating Committee and the SFS Job Fair, as well as the Annual Principal Investigators Meeting.

*EHR Response, May 2015: The Division of Graduate Education has provided four FTEs to support the program: a lead program officer (permanent); a program officer (IPA); a science assistant (temporary); and a program specialist (permanent). In addition, OPM provides 2 FTEs to help with*

*monitoring the program, and DHS provides a fractional FTE to help with the SFS Job Fair. Broadening participation is a core value of NSF and is considered while evaluating proposals. The factors considered include institution type, PI's gender and minority status as well as the specific broadening participation efforts included in the proposal. The program will continue the SFS Job Fair, PI meetings and ICC meetings. The program will continue Capacity funding to increase the participation of women and underrepresented minorities in cybersecurity.*

**Background Material: Program Solicitations; Management Plans; Panel Emails, Webinar, Orientation Material; Processing Instructions; Portfolio tables (list, map, demographics); Program Evaluation summary; PI Annual Meeting; Job Fair; Boot Camps; MOUs. Data Source: III. Management; V. Evaluation; VI. Addendum**

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

### Comments:

Management has performed well in ensuring a balanced and holistic approach to information assurance. It has addressed the “technical vs. policy” question with a “people, processes, and technology” approach that redefines the “marketplace” for information assurance professionals in more realistic terms. Often, the scope of the proposals can be quite expansive. The program has allowed for niche fields to be explored while tackling larger issues.

The vast majority of the awards that were reviewed complied with the philosophy of providing a broad information assurance education while ensuring that specialized programs in more narrow fields are also addressed. The breadth of degrees awarded to SFS students at least partially reflects that intention. Moving from the Division of Undergraduate Education to the Division of Graduate Education should hopefully result in more resources to manage the program at NSF and increased responsiveness to future research and education needs.

An evaluation of the CyberCorps program recommended allowing two-year institutions to apply for scholarship grants. NSF informed the COV that a Bill is being considered which would support the inclusion of two-year institutions in future SFS grant competitions.

COV Recommendation: Broaden the types of institutions that are being funded. Looking at the institutions being funded, there were not many smaller schools or minority serving institutions.

*EHR Response, May 2015: SFS Capacity funding invests in broadening the types of institutions with strong cybersecurity programs, including smaller schools as well as MSIs. A larger and more diversified pool of schools qualified for SFS awards will result in more diversified SFS portfolio. SFS program officers will use their outreach activities to address this issue as well.*

**Data Source: III. Management; V. Evaluation; VI. Addendum**

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

### Comments:

Given the issues of sequestration and unknown funding levels, the management team did very well in the planning and prioritization process. The program solicitations were clear in their requirements. Panel emails and webinar training were excellent resources to ensure that the reviewers were

prepared for the panels. OPM's program evaluation is extremely positive regarding the management of the CyberCorps® SFS program, and agency satisfaction provides assurance that the program is performing at a high level.

**Background Material: Program Solicitations; Management Plans; Panel Emails, Webinar, Orientation Material; Processing Instructions; Portfolio tables (list, map, demographics); Program Evaluation summary; PI Annual Meeting; Job Fair; Boot Camps; MOUs.  
Data Source: III. Management; V. Evaluation; VI. Addendum**

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

##### Comments:

The previous COV comments were adequately addressed. Management provided copious amounts of explanation and hard documentation to support this position. It attentively listened and implemented the majority of recommendations of the prior COV. Specific materials for many of the prior COV recommendations were made available in the COV document repository, and management, upon request, provided additional information. Significant strides have been made in a number of areas, specifically in the areas of diversity, programs of study, and geographical distribution of awards.

Additionally, the program followed the recommendation of the last COV report and is working to increase the pool of reviewers to include practitioners from government.

**Data Source: 0. COV Documents (Program Update On Actions Taken in Response to 2011 COV)**

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

| <p align="center"><b>RESULTING PORTFOLIO OF AWARDS</b></p>   | <p align="center"><b>APPROPRIATE,<br/>NOT<br/>APPROPRIATE,<br/>OR DATA NOT<br/>AVAILABLE</b></p> |
|--|--|
| <p>1. Does the program portfolio have an appropriate balance of awards across disciplines and sub-disciplines of the activity?</p> <p>Yes</p> <p>Comments:</p> <p>Yes, the distribution of awards changed from FY 2011 to FY 2012 and FY 2013. In FY 2011, all of the awards were in computing; whereas in FY 2012 and FY 2013 there were awards in engineering and interdisciplinary fields, showing more diversity in awards.</p> <p>In FY 2013, 84% of funding was awarded to proposals in computing, representing 21% of proposal submissions. However, the funding rates in other disciplines provide evidence of the program’s efforts to balance awards across disciplines and sub-disciplines: 60% of interdisciplinary proposals were awarded (out of 5) and 67% of engineering proposals were awarded (out of 3).</p> <p><b>Data Source: IV. Portfolio</b></p> | <p align="center"><b>Appropriate</b></p>   |
| <p>2. Are awards appropriate in size and duration for the scope of the projects?</p> <p>Yes</p> <p>Comments:</p> <p>The size and duration of the awards based on solicitation requirements were appropriate. Awards granted in FY 2011-13 were nearly the same in size (~\$350,000) as well as duration (~3-4 years). There was a clear mapping between the award amount and the expected performance indicators. The program management ensured that the distribution of funding between the various resources needed to complete the objectives of the proposal was adequate. To be specifically noted was the increase in funding amounts allocated to undergraduate and graduate student stipends.</p> <p><b>Data Source: IV. Portfolio (Average Award Size and Duration)</b></p>  | <p align="center"><b>Appropriate</b></p>   |
| <p>3. Does the program portfolio include awards for projects that are innovative or potentially transformative?</p>  | <p align="center"><b>Appropriate</b></p>   |

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| <p>Yes</p> <p>Comments:</p> <p>Awards covered many areas ranging from traditional cybersecurity to more specialized topics such as assured cloud computing and mobile device security. In addition to the scholarship awards, capacity building awards supported curriculum development, pipeline development, and pathway development. While these efforts have benefited higher education institutions, there has also been outreach to high school students as well as civilians and military personnel.</p> <p><u>COV Recommendation:</u> Future solicitations may consider awareness and fundamentals of information assurance as well as outreach activities for K-12.</p> <p><i>EHR Response, May 2015: The SFS Team will consider awareness and fundamentals of information assurance as well as outreach activities for K-12 while preparing future SFS solicitations. SFS is already co-funding a pilot program, GenCyber, which organizes summer camps for K-12 students and teachers that include both awareness and fundamentals of cybersecurity.</i></p> <p><b>Data Source: IV. Portfolio (List of Awards); V. Evaluation; VI. Addendum</b></p> |                    |
| <p>4. Does the program portfolio include inter- and multi-disciplinary projects?</p> <p>Yes</p> <p>Comments:</p> <p>Some of the inter- and multi-disciplinary projects included offensive/defensive computing, smart grid security, industrial control systems, and critical information infrastructure.</p> <p><b>Data Source: IV. Portfolio</b></p>  | <b>Appropriate</b> |
| <p>5. Does the program portfolio have an appropriate geographical distribution of Principal Investigators?</p> <p>Yes</p> <p>Comments:</p> <p>A map was provided to show the appropriate geographical distribution of Principal Investigators. Awards were granted to Principal Investigators located in approximately 40 states including Hawaii and Alaska. This is a positive example of capacity building across the United States rather than just in selected regions.</p> <p><b>Data Source: IV. Portfolio (Award Distribution by Region, by State)</b></p>   | <b>Appropriate</b> |

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| <p>6. Does the program portfolio have an appropriate balance of awards to different types of institutions?</p> <p>Yes</p> <p>Comments:</p> <p>While the majority of awards were given to master's and doctorate degree granting institutions, a small number of awards were made to associate and bachelor's degree granting institutions. With a potential future focus on community colleges, there must be increased planning for bachelor's and associate level students. Approximately 80% of awards were made to public institutions.</p> <p>Although the number of proposals submitted by minority serving institutions increased significantly from FY11 (16) to FY12 (36), there was a slight decline in submissions from FY12 (36) to FY13 (21). There has been a steady increase in the funding rate of proposals submitted by minority serving institutions from 19% in FY11 to 29% in FY13. Outside of HBCUs and HSIs, no proposals were submitted from other MSI type institutions, i.e., Tribal Colleges and Universities, Alaska Native Serving Institutions, Native Hawaiian Serving Institutions, Pacific Islander Serving Institutions. Submissions from minority serving institutions should be a focus in future solicitations.</p> <p><u>COV Recommendation:</u> Develop an intentional focus on increasing the number of proposals submitted by minority serving institutions. Collaborate with OPM in order to ensure direct hiring authorities include grades suitable (GS-5 through GS-7) for associate and bachelor's graduates.</p> <p><i>EHR Response, May 2015: Broadening participation is a core value of the NSF and the program will continue outreach activities to increase the number of proposals submitted by minority serving institutions (MSIs). It will also continue Capacity funding to increase the number of MSI institutions with strong programs in Cybersecurity and eligible for the SFS Scholarship awards. The Cybersecurity Enhancement Act of 2014 was signed into Public Law 113-274 in December 2014. It states that SFS students are to be appointed into the excepted service and it does not limit the grade level. Agencies can directly appoint students from the SFS program in both internships and post-graduation commitments at any grade level using Public Law 113-274 as the hiring authority. Based on several conversations with OPM policy it is de facto a direct hiring authority. The program will reach out to the appropriate OPM personnel to get an official response in writing to this issue.</i></p> <p><b>Data Source: IV. Portfolio (Award Distribution by Institution Type, Minority Serving Institutions and Targeted Audience Statistics)</b></p> | <p><b>Appropriate</b></p> |
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| <p>7. Does the program portfolio have an appropriate balance of awards to new investigators?</p> <p>Yes</p> <p>NOTE: A new investigator is an investigator who has not been a PI on a previously funded NSF grant.</p> <p>Comments:</p> <p>The percentage of new Principal Investigators has increased throughout the years, averaging from 4% (FY 2011) to about 20% (FY 2012 and FY 2013). The outreach activities and the workshops on how to write successful proposals may have aided the increase in the funding of proposals from new investigators.</p> <p><b>Data Source: IV. Portfolio (Funding Rate for New Principal Investigators)</b></p>                                       | <p><b>Appropriate</b></p>        |
| <p>8. Does the program portfolio include projects that integrate research and education?</p> <p>Comments:</p> <p>There was not enough information in the description of each award to make a determination regarding how well the portfolio includes projects that integrate research and education.</p> <p><b>Data Source: IV. Portfolio;</b></p>  | <p><b>Data not Available</b></p> |
| <p>9. Does the program portfolio have appropriate participation of underrepresented groups<sup>1</sup>?</p> <p>Yes; however, see comments below.</p> <p>Comments:</p> <p>There has been a steady increase in the funding rate of proposals submitted by minority serving institutions from 19% in FY11 to 29% in FY13. Proposals submitted which included women, minorities, and pre-service teachers as targeted audiences have increased, and the funding rate has fluctuated from 23% in FY11 to 21% in FY12 to 26% in FY13.</p> <p>The percentage of awards where females served as PIs has declined from 40% in FY11 to 23% in FY13, and the funding rate for this population of PIs</p> | <p><b>Appropriate</b></p>        |

<sup>1</sup> NSF does not have the legal authority to require principal investigators or reviewers to provide demographic data. Since provision of such data is voluntary, the demographic data available are incomplete. This may make it difficult to answer this question for small programs. However, experience suggests that even with the limited data available, COVs are able to provide a meaningful response to this question for most programs.



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| <p>has declined from 50% in FY11 to 29% in FY13. The percentage of awards made to African-American PIs increased only slightly from 5% in FY11 and FY12 to 8% in FY13. The funding rate for this population remained steady at 25%. The number of proposals submitted by and the number of awards made to Hispanic PIs must be addressed. The funding rate for this group has declined from 50% in FY11 (with 2 proposals submitted) to 0% in FY13 (with 5 proposals submitted).</p> <p>The participation of these targeted populations has not been fully addressed. Both NSF and the SFS leadership recognize the possibility of gender bias in evaluations and have addressed this in the webinars.</p> <p><u>COV Recommendation:</u> Consistent with NSF visions, we encourage the SFS team to promote strategic plans that focus on underrepresented minority individuals and institutions in order to increase submissions and potential awards.</p> <p><i>EHR Response, May 2015: The program will continue strategic efforts to increase the participation of women and underrepresented minorities in cybersecurity. It will also continue Capacity funding to increase the number of MSI institutions with strong programs in Cybersecurity and eligibility for the SFS Scholarship awards.</i></p> <p><b>Data Source: IV. Portfolio (Minority Serving Institutions and Targeted Audience Statistics)</b></p> |                           |
| <p>10. Is the program relevant to national priorities, agency mission, relevant fields and other constituent needs? Include citations of relevant external reports.</p> <p>Yes</p> <p>Comments:</p> <p>SFS maps well to the National Initiative for Cybersecurity Education (NICE). The program’s missions and goals are reflective of NICE, which aims to (1) raise national awareness about risks in cyberspace; (2) broaden the pool of individuals prepared to enter the cybersecurity workforce; and (3) cultivate a globally competitive cybersecurity workforce. NICE and DoD Directive 8570 work well together to match the job needs and the skill needs to SFS outcomes.</p> <p><u>COV Recommendation:</u> Develop action plans that focus on cybersecurity focus areas (e.g., community college, diversity agency needs, portfolio needs).</p> <p><i>EHR Response, May 2015: The program will allocate at least \$5M in FY 2015 to continue work with community colleges. In particular, the program anticipates making a substantial investment toward two goals: (1) to significantly increase the number of community colleges holding the Center of Academic Excellence in Cybersecurity (CAE2Y) designation; (2) to create and disseminate a version of a recently developed “Computer Science Principles” course that uses cybersecurity as a theme for use in community colleges. In</i></p>          | <p><b>Appropriate</b></p> |

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|---|---------------------------|
| <p><i>addition, the program will prepare action plans to address portfolio and government needs discussed in the recent longitudinal evaluation of the program.</i></p> <p><b>Background Material: Program Solicitations</b><br/> <b>Data Source: I. Merit Review (Selected Jackets see Annual and Final Reports); VI. Addendum</b></p>   |                           |
| <p>11. Additional comments on the quality of the projects or the balance of the portfolio:</p> <p>Overall, the quality of the projects is impressive, and the portfolio is appropriately balanced. The SFS community has grown considerably, as indicated by the increase in the number of SFS graduates and the additional institutions that have joined the program.</p> <p>There is a challenge for Principal Investigators at SFS institutions and the NSF and OPM program offices to maintain communication with the different stakeholder groups and continue to collect feedback on ways to improve the program and its implementation. As the technologies surrounding cybersecurity change and the types of cybersecurity threats continue to evolve, it will be increasingly important for SFS stakeholders to reach out and share information for the collective purpose of protecting the U.S. Government's information infrastructure.</p> | <p><b>Appropriate</b></p> |

**OTHER TOPICS**

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

The following observations and/or recommendations are made:

- Create a tighter mapping of SFS performance objectives to NSF strategic plans, White House memoranda, and federal directives.
- Focus on competencies with the largest proficiency gaps while also taking into consideration their importance and NFT ratings. Computer Network Defense, in particular, was identified as a competency that is both critical to a well-prepared cybersecurity workforce and also in need of additional development in a substantial number of graduates.
- Increase the skill sets of graduates as identified from other data/information sources, i.e., NICE security competences.
- Continue to focus on the general competency skills of graduates, such as decision making, in addition to technical competencies.
- Minority serving institutions should be a focus based on the geographic increase of these populations.

*EHR Response, May 2015: The program will continue close collaboration with the National Initiative for Cybersecurity Education (NICE) to support its strategic goals and to use the NICE Cybersecurity Workforce Framework. The NICE Framework provides a modern taxonomy of the cybersecurity workforce as well as required knowledge, skills and abilities. The program will continue its focus on increasing the number of MSIs with strong cybersecurity programs.*

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 following observations and/or recommendations are made:

- The program has a very successful 93% post-graduation job placement rate. With older solicitations requiring mandatory reporting for only two years post degree, it is currently difficult to evaluate the retention of SFS graduates in the workforce. However, new reporting requirements for SFS students, which began in Fall 2012, will allow the OPM SFS program office to track the retention of graduates, excluding those who work in the intelligence community, over a 10-year period.
- Supervisors estimated between 79-82% of SFS graduates stay beyond their 2-year commitment, indicating that the overwhelming majority of SFS students remained past their obligation period.
- Ensure that all stakeholders (i.e., Agencies, institutions, NSF, and OPM) continue collaborating as the needs of cybersecurity grow and change.
- Maintain communication with the different stakeholder groups (i.e., agencies, institutions, NSF, and OPM) and continue to collect feedback on ways to improve the program and its implementation.

*EHR Response, May 2015: The program will continue intensive communications with stakeholders and will support PI meetings, workshops and conferences bringing the stakeholders together. The program will continue monitoring and evaluation activities.*

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

The following observations and/or recommendations are made:

- Continue the development of diversity metrics and strategies in order to increase the diversity of institutions, PIs, and participants so that the programs can address the Nation's needs in cybersecurity and a diverse workforce.
- Implement the new proposal review template to ensure that the panel summaries contain adequate information for proposals that were not funded, so that the PIs can address shortcomings identified by the panel in future submissions.

*EHR Response, May 2015: The program has adopted new templates for panel summaries and reviews in FY 2015. SFS Capacity funding invests in broadening the types of institutions with strong cybersecurity programs, including smaller schools as well as MSIs. A larger and more diversified pool of schools qualified for SFS awards will result in a more diversified SFS portfolio. SFS program officers will use their outreach activities to address this issue as well.*

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

The following observations and/or recommendations are made:

- Ensure outreach to Human Resources departments regarding program benefits, hiring authorities, and the SFS Job Fair.
- Ensure all SFS scholarship recipients attain and maintain a basic clearance prior to entering the workforce.

*EHR Response, May 2015: The SFS Program office at OPM maintains an active relationship with more than 140 government departments, agencies and branches. It will continue activities such as*

*Federal briefings and seminars. The program office will continue efforts to resolve delays in obtaining security clearances.*

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

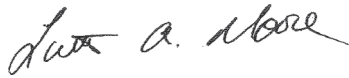
The following observations and/or recommendations are made:

- Provide materials ahead of time to allow for additional pre-COV preparation.

*EHR Response, May 2015: DGE program officers will work harder to schedule the COV farther in advance of the meeting, to get information to the COV well ahead of time, to present a live webinar, and to resolve IT issues before the meeting.*

**SIGNATURE BLOCK:**

For the IGERT/GK-12/SFS COV:



12-24-14

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Loretta A. Moore  
Sub-Chair, CyberCorps®: SFS Subcommittee



March 23, 2015

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Karen Klomparens  
Chair, IGERT/GK-12/SFS COV