

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

The table below should be completed by program staff.

Date of COV: June 15-17, 2011
Program/Cluster/Section: ADVANCE program
Division: Human Resource Development (HRD)
Directorate: Education and Human Resources (EHR)
Number of actions reviewed: Awards: 34 Declinations: 14 (including 2 Partnerships) Other: N/A
Total number of actions within Program/Cluster/Division during period under review: Awards: 81 Declinations: 196 Other: N/A
Manner in which reviewed actions were selected: Reviewed actions were randomly selected from all actions that occurred during the COV review period. All reviewed actions have proposal ID numbers ending in 3 or 9, unless there was a specific type of action (i.e., unsolicited proposal) for which proposal ID numbers did not end in 3 or 9. In that case(s), a random selection was made to represent that proposal type.

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.

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
<p>1. Are the review methods (for example, panel, ad hoc, site visits) appropriate?</p> <p>Comments:</p> <p>Comments from a diverse collection of panelists provide an analysis of proposals from various perspectives using combined expertise that no Program Officer can provide alone. In general, the combined expertise of the panelists is broad, and the panel review method is sufficient. Ad hoc reviewers were used as appropriate to increase the expertise of the panel. Site visits were rarely a component of the review process. If and when site visits take place, the impact of the visit can be improved if all visits and recommendations are documented in eJacket under the "Site Visit" tab.</p>	YES
<p>2. Are both merit review criteria addressed</p> <p style="padding-left: 20px;">a) In individual reviews?</p> <p style="padding-left: 20px;">b) In panel summaries?</p> <p style="padding-left: 20px;">c) In Program Officer review analyses?</p> <p>Comments:</p> <p>Overall, the individual reviews, panel summaries and review analyses include separate sections labeled "intellectual merit" and "broader impact" which ensures that both review criteria are addressed.</p>	YES

<p>3. Do the individual reviewers provide substantive comments to explain their assessment of the proposals?</p> <p>Comments:</p> <p>Although both merit review criteria are addressed in the individual reviews and panel summaries, it is noted that in some cases, the content of the individual reviews falls short of evaluating the proposals and summarizes the goals instead. However, using five reviewers as in the samples reviewed here increases the odds that at least three of the reviews will be substantive. More specific guidance to reviewers on review of relevant elements in the proposal would be beneficial (see Section 1.7 below).</p>	<p>YES</p>
<p>4. Do the panel summaries provide the rationale for the panel consensus (or reasons consensus was not reached)?</p> <p>Comments:</p> <p>The panel summaries are informative and advise the PI of the panel discussion. A recommendation key is included in the panel summary; however, there is inconsistency in the application of the key in reporting the panel recommendation. Therefore, the panel recommendation is undocumented in the panel summary.</p>	<p>YES</p>
<p>5. Does the documentation in the jacket provide the rationale for the award/decline decision?</p> <p>(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.)</p> <p>Comments:</p> <p>The documentation is in the jacket but in some cases there is a lack of clarity as to why a proposal was awarded, particularly when the positive recommendation seems contrary to the individual reviews and the panel summary. In these cases, it would be more informative if the PO provided an explanation as to why a decision was made while acknowledging that it varies from the panel recommendation. When the PO requests additional information in response to the reviews, the information is not always included in the jacket. With regards to the declines, the PO comments provide an explanation for the decline and/or encourage the PI to call the Program Officer for additional information (see Section 1.6 below).</p>	<p>YES</p>

<p>6. Does the documentation to PI provide the rationale for the award/decline decision?</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 or telephoned with diary note in jacket) of the basis for a declination.)</p> <p>Comments:</p> <p>Documentation to the PI does not consistently provide the rationale for the award/decline decision. Individual program elements are not addressed in the panel summary; in particular there is inconsistency in addressing the sustainability plan and underlying cognitive theory.</p>	<p>Not Consistently</p>
<p>7. Additional comments on the quality and effectiveness of the program's use of merit review process:</p> <p>The COV suggests that reviews could be more informative if a reviewer template were provided to guide the reviewer in commenting specifically on areas critical to the review process such as sustainability plans, data analyses, social theory, and budget. In addition, providing a sample of an informative and a non-informative review in the reviewer training will help to improve the quality of the review.</p> <p>The COV recommends including, in the jacket, any supplementary material requested by the PO and identified in the review analysis; this action will make the selection process more transparent.</p> <p>The COV recommends that the "Panel Recommendation Key" be used consistently or removed from the Panel Summary template.</p> <p>The COV appreciates the difficulty in separating intellectual merit and broader impact because of the nature of the ADVANCE program. POs are to be commended for their efforts in achieving this task.</p>	

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>Comments:</p> <p>The panels are diverse in background, type of institution, and discipline. An examination of the reviews indicates a clear understanding of the proposals based on a variety of expertise. The multi-disciplinary panels provide a wide range of expertise which allows detailed examination of the content.</p> <p>The reviewers are faculty with qualifications in the disciplines or administrators who are able to bring the administrative viewpoint to the review process.</p> <p>Demographics of reviewers indicate the balance of types of institutions and states represented.</p> <p>Sample review committees:</p> <ol style="list-style-type: none"> 1. Arizona, Ohio, Florida, Alaska, and Washington State Development, Anthropology, Sociology, and Engineering 2. Kansas, Alabama, Ohio, Texas, and Washington, D.C. English, Development, Federal Agency, Math, and Science <p>There was some concern, however, that for some panels there were no engineers or scientists (outside of the social sciences) represented or the review analysis indicated that only social science and education were represented in the panel. This issue should be addressed by conscious effort. There is also continuing concern about an insufficient number of male science faculty members and administrators on the panels, even though the numbers have improved since the 2008 COV.</p>	YES
<p>2. Did the program recognize and resolve conflicts of interest when appropriate?</p> <p>Comments:</p> <p>The program has followed appropriate NSF established policies and there has been appropriate resolution when a COI was present. Review analyses indicated appropriate action was taken by NSF, and COI reviewers were excluded from</p>	YES

the review process. Based on a sample of jackets, COIs were appropriately noted and the related proposal not reviewed by the individual with the conflict of interest.	
Additional comments on reviewer selection: N/A	

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 program has detailed management plans, year by year. The process is clearly defined and includes the plan for panel reviews, qualifications for awards in various categories and specification of guidelines for each type of grant.

Regular site visits are a pivotal portion of the management plan. First time PIs would profit from mentorship during the first segments of the grant period, whether this is provided through POs or connections with previous awardees.

Responsibilities for POs and Program Directors are clearly defined. Monthly meetings of the ADVANCE Implementation Committee (AIC) are supplemented by email contact. Responsibilities of the AIC include the monthly meetings, participating in site visits, proposal review and suggesting names for reviewers. Members of the AIC also participate in pre-panel, panel, and post-panel review.

The 2010 program solicitation seemed to take into account lessons learned from previous COV reviews, and the COV commends this.

In general, management is clear, detailed, and well-organized. A review of the three management plans indicates additional details have been added during the course of the COV's review period.

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

Comments:

The program at its core structure is directly addressing national concerns about women in STEM disciplines as evidenced by its relevance to issues raised in the current literature such as the 2007 National Academies publication *Beyond Bias and Barriers: Fulfilling the Potential of Women in Academic Science and Engineering* and the 2010 AAUW publication *Why So Few? Women in Science, Technology, Engineering, and Mathematics*.

Following advice from the 2008 COV, the program has increased participation in national and international conferences along with publishing in high profile, wide-audience journals. The awareness of the options and possibilities that ADVANCE provides within the wider academic communities and administration raises awareness and support across academe. A number of IT projects created tools to evaluate the representation of the targeted population within institutions and to proactively improve connections among female faculty in scientific collaborative networks. These strategies will further expand the long term goals of the EHR Directorate and HRD Division.

Proposals submitted to the ADVANCE program show evidence that proposed projects are well-grounded in a review of the literature. In the last three years, the ADVANCE program continues to stimulate the development of new literature on relevant topics while encouraging application of existing literature.

ADVANCE sessions at the NSF Joint Annual Meeting (JAM) show a responsiveness to the research emerging from funded projects, increase inter-programmatic understanding (e.g., joint sessions with AGEF, TCUP, GSE at the 2011 JAM), and stimulate new educational opportunities.

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

Comments:

The management plan details the proposed division of types of awards. Although there is reference to balance in types of institutions and location, it is not clear how this is prioritized.

The AIC, composed of members from various portions of NSF, holds monthly meetings and provides advice and feedback on award portfolio recommendations. How the priorities are determined or balanced is not clear from the information provided. Reference is made to recommendations of previous COV reports, but it is not clear how or if these were taken into consideration on a regular basis. It is clear that measures have been taken in terms of diversification of panelists, targeted meeting attendance, and extended dissemination methods. These are all an indication of consideration of various groups, but it is not clear how these issues impact the portfolio.

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

Comments:

The COV commends the effort by the ADVANCE team to respond to comments by the 2008 COV and to maintain the momentum of building and sustaining the program. However, many of the challenges identified by the 2008 COV still remain in 2011, and suggest the need for different strategies.

The presentations and materials made available to the COV for their work was very well organized and facilitated the COV process tremendously.

The 2008 Program Responses and the 2011 Updated Program Responses indicate that the ADVANCE program management understands the concerns written by the 2008 COV, made appropriate initial responses, and continue to be responsive to those issues.

In two instances the Program Response was appropriate (substantive comments in reviews—Part A.1.4, pp. 1, Updated Program Response; geographical distribution of proposals and awards—Part A.3.8, pp 4, Updated Program Response) but has not produced the desired results. Alternate strategies need to be developed and implemented.

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

<p align="center">RESULTING PORTFOLIO OF AWARDS</p>	<p align="center">APPROPRIATE, NOT APPROPRIATE, OR DATA NOT AVAILABLE</p>
<p>1. Does the program portfolio have an appropriate balance of awards across disciplines and sub disciplines of the activity?</p> <p>Comments:</p> <p>The program portfolio appears to have a very broad balance of disciplines and sub-disciplines. In PAID, there are a few discipline-specific projects and it might be beneficial to explicitly encourage other disciplinary communities to participate.</p>	<p align="center">APPROPRIATE</p>
<p>2. Are awards appropriate in size and duration for the scope of the projects?</p> <p>Comments:</p> <p>An analysis of size of award and duration was conducted by entering this data into an Excel spreadsheet, allowing for easy comparison. We then carefully looked at projects with budgets that seemed to deviate from the usual award amounts. No discrepancies were noted. Awards appeared to be appropriate.</p> <p>In addition, of note is the inclusion of a significant number of consortia included among proposals, which although not directly affecting the appropriateness of program size and duration, does appear to leverage pre-existing relationships and natural linkages. This bodes well for sustainability and institutional transformation.</p>	<p align="center">APPROPRIATE</p>
<p>3. Does the program portfolio include awards for projects that are innovative or potentially transformative?</p> <p>Comments:</p> <p>The portfolio of awards includes an interesting array of program approaches and theoretical foundations. For example the LEADER consortium, which includes an entire urban area with a variety of institutional types including an HBCU, discusses the interesting notion of inter-institutional accountability. Another is the Earth Science Women’s Network, a unique group on a variety of levels, especially being originated and run by early career women. It now has 750 members across geoscience sub-disciplines. An open question is</p>	<p align="center">APPROPRIATE</p>

<p>whether formalization will alter effectiveness of this grassroots organization? Additionally another proposal addresses the interesting question of the extent to which examination of awards criteria might impact the values of a professional society and therefore the priorities of its membership. The Ohio State University proposal was also innovative in its exploration of entrepreneurship for women interested in commercializing their intellectual property.</p>	
<p>4. Does the program portfolio include inter- and multi-disciplinary projects?</p> <p>Comments:</p> <p>The program portfolio is inherently multi-disciplinary. Several programs featured conscious efforts to bridge multiple disciplines with recognition of the challenges inherent in this effort. Particularly interesting is the Florida effort that combines engineering and chemistry with a team of participants spanning multiple sub-disciplines. Another project seeks to directly examine the extent to which an interdisciplinary academic program home might improve the climate for women, “reducing professional and social isolation.” This program will explore the hypothesis of a gendered preference for interdisciplinary science as well as gendered consequences of this preference.</p>	<p>APPROPRIATE</p>
<p>5. Does the program portfolio have an appropriate geographical distribution of Principal Investigators?</p> <p>Comments:</p> <p>For the period of review, the IT awards are predominantly located in the northeastern quarter of the country; however, over the full duration of the program the distribution is reasonable. Somewhat better distribution has been achieved for the IT-Catalyst and PAID awards. The COV notes that there still are a few states that have not received any grants from the ADVANCE program.</p>	<p>APPROPRIATE</p>
<p>6. Does the program portfolio have an appropriate balance of awards to different types of institutions?</p> <p>Comments:</p> <p>The diversity of types of institutions is improving and the program should be commended for this. In particular the awards to community colleges, minority serving institutions, undergraduate schools, and professional societies represent commendable expansions of the scope of the program. There also is one proposal exploring transformation in a unionized faculty environment. There still is considerable room for fuller participation by minority serving institutions, community colleges, and undergraduate institutions. The COV notes that this is an upcoming focus of the program and is fully supportive of this direction.</p>	<p>APPROPRIATE</p>

<p>7. Does the program portfolio have an appropriate balance of awards to new investigators?</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>For the IT-Catalyst and PAID awards, there is an impressively large participation by new PIs (41.7% for IT-Catalyst; 32.2% for PAID). This appears to be a promising outlook for new PIs of IT-Catalyst awards to become PIs of future IT awards. The IT-Catalyst awards also are exhibiting the ability to build campus-level networks and relationships among faculty that are crucial for promoting institutional transformation. The COV notes, however, that this is less applicable to the IT awards (where experienced leadership is expected; still, new PIs are funded at a rate of 23.3%).</p>	<p>APPROPRIATE</p>
<p>8. Does the program portfolio include projects that integrate research and education?</p> <p>Comments:</p> <p>The COV is particularly impressed by the integration of social science research about gender and institutional transformation with the education of faculty and administrators. In addition, there are several projects that explicitly integrate research and education, such as the PAID project of the College of New Jersey which co-locates the project in the Center for Teaching and Learning.</p>	<p>APPROPRIATE</p>
<p>9. Does the program portfolio have appropriate participation of underrepresented groups?</p> <p>Comments:</p> <p>The ADVANCE program recently has instituted a significant focus on individuals from underrepresented groups and is to be commended for this. There is an increasing but still small number of proposals that have been awarded to minority serving institutions and/or focus on underrepresented populations. A number of proposals from minority serving institutions have been declined.</p> <p>In a follow-up review of a number of declined proposals that would have significantly increased participation of individuals from groups traditionally underrepresented participation in STEM fields, several reviewer comments could be considered encouraging and instructive, promoting the possibility of revision and re-submittal; the COV notes that this is an important review component for ongoing monitoring in light of efforts to increase participation of individuals from underrepresented groups.</p>	<p>APPROPRIATE</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>Comments:</p> <p>This program addresses a crucial national need that has been documented in many national reports. Four recent examples of reports that have emphasized the importance of increasing the representation of women in science and engineering are <i>Beyond Bias and Engineering—Fulfilling the Potential of Women in Academic Science and Engineering</i> (National Academies Press, 2007); <i>Why So Few? Women in Science, Technology, Engineering, and Mathematics</i> (American Association of University Women, 2010); <i>Gender Issues in Scientific Collaboration and Workforce Development</i> (Workshop on the Science of Science Measurement; U.S. Office of Science and Technology Policy, 2010); and <i>Focus on Careers: Women in Science—Nurturing Women Scientists</i> (Adams, 2008).</p> <p>A notable proposal addresses the perceived barriers and successes associated with postdoctoral training. Since many disciplines have noted that the postdoctoral experience is a primary avenue of entry into the professoriate, this has potential to inform and shape national priorities by creating better understanding of one side of the distribution issue.</p>	<p>APPROPRIATE</p>
<p>11. Additional comments on the quality of the projects or the balance of the portfolio:</p> <p>The infusion of social science methodology into exploration of issues addressed in ADVANCE projects appears to be leading to new and innovative approaches such as the exploration of social network analysis.</p> <p>It was noted that multiple funded proposals were from PIs who were previously declined, with the proposal writer indicating that the feedback received was useful in prompting revision and resubmission.</p>	

OTHER TOPICS

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

Changing existing perceptions, relationships, and climate is central to the ADVANCE program, creating particular challenges for program evaluation. To the extent possible ADVANCE should promote state-of-the-art program evaluation in these areas, which are challenging to measure. The COV recommends convening a broad-based discussion that would perhaps result in targeted solicitation to address these important issues. For example, encouraging discussion between people who do research on evaluation and those who have performed evaluations on programs such as ADVANCE could lead to evaluation schemes or strategies not previously considered. Such sophisticated evaluation schemes would ideally lead to best practices, like the *2010 User-Friendly Handbook for Project Evaluation* or the best practices documents of the National Center for Women & Information Technology.

Consistent with 2008 COV report (see Part A.4.1), some members of the COV still are concerned about the voluntary nature of the directorate contributions to the ADVANCE budget.

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 COV commends the ADVANCE program's increased outreach activities. The COV recommends that the program increase its outreach to U.S.-based disciplinary professional meetings where discipline-specific accomplishments specific to those areas can be highlighted. Presenters could be drawn from a pool that includes the ADVANCE Implementation Committee (AIC) and faculty of current and previous ADVANCE awardees. The COV suggests that the emphasis should be placed on national outreach efforts for more effective use of limited resources and maximum impact.

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

The Foundation needs to broaden the conceptualization and awareness of the need for evaluation to ensure the inclusion of robust strategies to assess program goals and impacts. This is particularly relevant to ADVANCE because of the need to provide credible information to the broad array of directorates involved in supporting the program and the nature of institutional transformation.

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

The COV recognizes that the evaluation of the ADVANCE program by the Urban Institute and Westat is currently underway consistent with the 2008 COV recommendation; however, despite being a central aspect of the evaluation, the case studies are yet to be released. The COV reiterates the importance of this type of qualitative data to understanding program impact.

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

The COV commends the ADVANCE Program Officers and staff for the quality, quantity and user-friendly nature of the materials sent out in advance of the COV, and their responsiveness to past logistical suggestions from the 2008 COV Report. The COV template would benefit from explanation or expansion of some of the questions that do not appear to be immediately relevant to the ADVANCE program (e.g., Section III.2; Section IV.8). When reviewing the 2008 COV Report, the change to eliminate Part B of the past report was effective. The COV, however, encourages continued focus on evaluation components, although not as a component of the COV report.

Additionally, the COV notes that the following items would be particularly helpful in providing clarity and guidance as future COV members are selected and convened:

- 1) The annotated template would be useful in advance of the COV; while it is helpful to receive the questions and materials in advance, the annotated template would help focus the COV members as they begin to examine the information provided.
- 2) Materials sent should be prioritized, with materials requiring advance substantive review ranked first; the inclusion of the annotated template with these materials would again help focus a COV member, but the importance of all materials should be ranked.
- 3) Given the amount of material provided by the program, the size of the current COV (10 members) appears to be a satisfactory number in terms of allocating responsibilities and working to build consensus on answers.
- 4) The addition of a late afternoon session on Day One is beneficial.

The COV process and execution have been presented as an NSF effort to ensure the integrity of the peer review process used in consideration of program proposals. By design, the process goes beyond the simple review, award, and monitor cycle to encompass a look at program objectives and the match of goals to program portfolio. As a COV, our intense but short-term examination of ADVANCE provided an opportunity to form both the specific reactions and recommendations detailed in our report and more global impressions that emerged from between the lines of our assessment. In this regard we were most impressed by the sense of commitment, professionalism, responsiveness, and good cheer reflected in our composite image of ADVANCE resulting from this review process. We commend the staff for excellent execution, and the agency for vision, in implementing this important initiative to promote the advancement of women in STEM.

SIGNATURE BLOCK:

For the ADVANCE COV
Cinda-Sue Davis, Ph.D.
Chair