

ADVANCE Program Response to COV Report October 2005

Is the review mechanism appropriate? (panels, ad hoc reviews, site visits)

Comments: Fellows feedback: The review process is inconsistent among directorates. Some directorates used panels and ad-hoc reviews while others used only ad-hoc reviews. The COV recommends consistency of forms for reviewing and thinks that panel review is preferable.

Partially agree: Individual directorates managed review of the Fellows proposals. Each Directorate handled the Fellows proposals according to their directorate customs and needs; some directorates received enough proposals to hold a panel, others had few proposals and used ad-hoc review only. The intellectual merit of the Fellows proposals had to be reviewed by scientists in each discipline, and the AIC determined that convening one panel that had the broad disciplinary perspective necessary to compare over 100 proposals with very distinct scientific contents was not feasible. In addition, comparing proposals across all Foundation directorates, where the employment and gender issues vary by discipline (extended post-docs in BIO, for example, or extremely low numbers of women at all levels in Engineering) made the Fellows program difficult for the ADVANCE Implementation Committee to manage. The AIC agrees with the COV that funding for individual investigators, regardless of gender, is best handled by the core programs in each of the individual directorates.

Are reviews consistent with priorities and criteria stated in the program's solicitations, announcements, and guidelines?

Comments: Some reviews talked only about intellectual merit, some only about ADVANCE goals. Suggestion: there should be a template that reviewers use to encourage them to address both criteria.

Agree: The ADVANCE Program will ensure that both criteria are addressed in reviews through use of electronic correspondence, which allows better communication with the reviewer community.

Comments: In general the panel summaries were sufficient. Occasionally a summary was too brief to provide a clear message to the principal investigator. Adding staff to the panels (i.e. science assistant) could solve this problem.

Agree: Panel summaries should provide valuable insight into the panel deliberation and therefore should be extensive enough to inform the principal investigator of the panel's views. The ADVANCE Implementation Committee will assist the ADVANCE Program Director during panels to ensure that panel summaries are clear and informative, and will work with panelists to identify ways in which the summaries could be more informative and complete. In addition, panels will be instructed to address both NSF merit criteria, which will be facilitated by use of a standard template.

Have the panel summaries addressed both merit review criteria?

Comments: yes for fellows, and no for leadership and IT. In some of the leadership and IT jackets we reviewed, the panel summaries did not address both review criteria. However, since that time a new panel summary template had been implemented to correct that problem.

Agree: The AIC will review panel summaries as they are drafted in panel to ensure both criteria are addressed fully.

Did the program make appropriate use of reviewers to reflect balance among characteristics such as geography, type of institution, and underrepresented groups?

Comments: We did not have sufficient data on underrepresented groups or type of institution to make a judgment because reviewers do not provide it.

Agree: This is an important issue that plagues ADVANCE as well as the Foundation as a whole. Because NSF cannot require reviewers to reveal demographic data, this issue cannot be easily addressed by any of the NSF programs at the moment. The ADVANCE Program will continue concerted efforts to use reviewers and panelists that bring diversity of perspective, institutional type, geography, and underrepresented status

Does the program portfolio have appropriate participation of underrepresented groups?

Comments: The ADVANCE program should consider increased focus on women faculty of color. The new program announcement for 2005 addressed this concern.

Agree: As the COV noted, the most recent solicitation highlighted the need for focus on the issues of women of color in academic science and engineering careers. Following the first competition, it was clear that much more specific language was needed in the solicitation to define and emphasize the need for focus on the particular issues for women of color, and clearer language was added in both the second and third solicitations to elicit more targeted programs. We will continue to make this an area of emphasis in future competitions.

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

We are concerned about the representation of women faculty of color across disciplines and institution types. We are also concerned about the large number of highly meritorious Institutional Transformation proposals that go unfunded. We support the shift in the leadership program from grants focused on individuals to broader projects. We endorse the new effort (PAID) to support dissemination of lessons from ADVANCE projects.

Agree: These concerns are well taken. As the program develops, we will continue to seek balance in the portfolio of types of institutions, ideas, and people. The fiscal realities of the program budget require that we continue to evaluate our portfolio and make the best use of the available funds to disseminate best practices and findings from previous investments. The low success rate is an unfortunate effect of the high level of interest in the program.

Management of the program:

Comments: The program manager has done an exceptional job. Examples include: thorough review process; detailed review analyses; negotiating cooperative agreements; comprehensive well written reports; strong leadership within the foundation; exceptional outreach to the university community; well organized effective site visits.

The program is significantly understaffed, even by NSF standards. Managing a program with 3 different types of competitions, and this number of awards including cooperative agreements with site reviews of about 9 institutions per year requires more than one PO.

Agree: The ADVANCE Program Director completely agrees that the Program is understaffed. NSF has seen no significant increases in personnel in many years, and understaffing is a problem that is being evaluated at a high level of the Foundation. However, the concerns raised by the

COV are serious and will be addressed by NSF management. As the administrative home of the ADVANCE Program, SBE has reached a similar conclusion, and has prioritized one of its few IPA positions to this Program. As a temporary measure, SBE is grateful to the GEO Directorate's representative, Sonia Esperanca, for her service as a part-time co-Director of the ADVANCE Program. It is the intent of the Foundation to staff ADVANCE more adequately, including having two full-time Program Directors as soon as possible.

Additional concerns relevant to the management of the program.

The COV recommends that NSF highlight case studies and quantitative data that show successes in advancing women in specific disciplines. This will provide AD's a mechanism to promote the success of ADVANCE.

The COV notes the organizational structure of the ADVANCE funding model has both strengths and weaknesses. Strengths include: the participation of all directorates; high profile within the foundation. Weaknesses include: no line item for budget; need for high management effort for administration.

The COV recognizes the need for a synthetic analysis of program outcomes -- we encourage NSF to consider ways to do this -- see suggestions in section C.

Understaffing to the degree seen in the ADVANCE program can result in loss of diversity in points of view, lack of program continuity, insufficient opportunities for outreach, and lost opportunities for external partnership/fundraising.

Agree: NSF appreciates this insightful analysis. A synthesis of results, including data, that is user-friendly and readily available is clearly needed, both for outreach and for in-reach. A book that is in progress and expected to be published in the first half of 2006 by the University of Michigan Press will provide a collection of best practices from current ADVANCE sites. In addition, the ADVANCE Program will look for effective and accessible ways to highlight the knowledge developed through ADVANCE awards. We hope that the new PAID competition will contribute to addressing the need for knowledge about program successes, as well as about interventions that did not work well.

NSF recognizes that the ADVANCE Program is understaffed and is committed to addressing this within six months. ADVANCE has benefited from the cooperation of the Directorates through the ADVANCE Implementation Committee and from the leadership provided by the Office of the Director. This cooperation has made the unwieldy budget and administrative arrangements for the program more manageable. Additional program staff will be of great value for outreach, dissemination, evaluation and other aspects of the program that are important to achieve the fullest impact possible from this NSF investment.

We recommend that funding Fellows grants should be done by the core programs in the individual directorates (see C.4) and that the funds previously allocated to fellows should be used to fund additional IT or PAID proposals.

Partially agree: The ADVANCE Implementation Committee has discussed how best to serve the needs of individual researchers who encounter career-threatening situations that may result in women faculty dropping out of academic science and engineering. The Fellows program had some unique advantages, such as the ability for investigators to apply as an unaffiliated individual. The recipients of the Fellows awards cite the importance of the award to their career

development. However, many of the issues that affect the viability of an academic career are not easily addressed by individuals or by individual awards, because the issues stem from institutional practices, policy, and culture. We agree with the COV that the institutional transformation program yields more ‘bang for the buck’ and addresses systemic aspects of academic science and engineering. However, it is unclear that core programs would be receptive to taking over the Fellows program, which makes large awards and requires little institutional commitment. We commend the thoughtful recommendations of the COV on adjustments that could be made in core research programs (see below) to address the continuing need of individuals for flexible and responsive support to enable them to stay in science.

Dissemination is a widely noted gap. However, the new PAID program will ameliorate this problem by providing a mechanism for funding dissemination and synthesis. This will have the affect of leveraging existing ADVANCE grants to larger audiences. Also, PAID offers additional funding to awardees that are doing important ongoing work since there is no current renewal program for IT awards. This is preferable to a renewal for multiple reasons (such as keeping the pressure on schools to make changes within the specified time frame of the original award).

Agreed. The first set of ADVANCE Institutional Transformation awardees is approaching the fifth and final year of their awards, and the question of renewals was an important topic of discussion within the ADVANCE Implementation Committee. The AIC recognizes that institutional transformation is unlikely to be complete in five years, and that the results of such programs must be tracked far beyond the end of the award to assess the impact of the program. Although there are risks to not providing renewal options, the AIC was unable to define a way within the ADVANCE budget to fund renewals, and was not persuaded that there was sufficient additional benefits to continuing the awards for another five years rather than funding new IT or PAID awards.

Synthetic analysis/meta-analysis of the broad sweep of outcomes, much like the IWTF program would be beneficial. This should be integrated with other existing knowledge about these issues and posted on the website. While this is not done in other disciplines, the people applying for pure S+E grants are already domain experts, while S+E professionals applying for ADVANCE may not be social science experts and thus need to understand the corpus of existing research/data.

Partially agree: The integration of the scholarly findings from the social sciences into the conceptualization of institutional change is key to lasting change. Introduction to and exploration of the research findings about bias, stereotyping, negotiation, etc, has been a key transformative aspect of the institutional awards. We agree that more people need to be aware of this research, and are encouraged by the evolution of understanding of the factors that underlie women’s under representation in academic science and engineering. Moreover, there is considerable value in individual discovery of these resources, and considerable variety in the types of resources available. Ideally, we will find a way to summarize key findings, point people to more complete information, and stimulate ongoing research on the social, organizational, and cognitive factors that contribute to the problem.

A longer-term evaluation of at least a subset of programs would be informative - this may be above/beyond the scope of PAID or existing evaluation supplements. This is essential to show the long-term impact (on schools, on professional societies, etc).

Agree. The ADVANCE Program has contracted with an outside evaluator to design a program evaluation approach, which we anticipate will include a mechanism for determining effects over a longer term.

Leadership from Joe Bordogna has been stellar; however, we are concerned about the continuity of the program in both funding and mindshare for the foreseeable future. Both academia and industry encourage and look forward to sustained or increased commitment from senior management/SMIG for this flagship program.

Agree. ADVANCE has received strong and consistent support from NSF management and we are confident the support will continue.

Advance Fellows Program:

Although we recognize the value of this program to the individual grantees who have received awards, the program is oversubscribed and does not deliver the multidisciplinary, "bang for the buck" broad benefit of the other ADVANCE programs. Moreover, these are research proposals that should be reviewed in research programs. Recommendation: Proposals from PIs in situations like the Advance fellows applicants should be funded by the core programs within the individual directorates through modifications to the existing grant programs -- e.g. program officers need to demonstrate a willingness to fund salary (need program manager training to discuss broader impact of career disruption events – This could be done in "boot camp" as a case study); coding jackets so that the broader impact of keeping a woman in Science and Engineering is noted; publicize this opportunity outside of NSF. This approach would also prevent these awards from being undervalued because they are given by a program that is targeted at women.

Agree: NSF Program Officers have considerable ability to provide support that is consistent with an individual's needs. The AIC agrees wholeheartedly with the need for the Foundation to pay attention to career disruption events and to address them through the core programs. The idea of a program element for broader impact is innovative and exciting.

PAID Program

We are very excited about the new PAID (Partnerships for Adaptation, Implementation, and Dissemination) component in the new program solicitation. In particular, we're very enthusiastic about the opportunity for disseminating some of the successful practices developed in the Institutional Transformation and Leadership projects. This will allow the demonstration of how practices can be applied at different institutions without having to reinvent the entire process. Collaboration will also be a positive means for effecting change at institutions that may not be able to mount an entire institutional transformation effort. We also hope there will be an opportunity for synthesizing some of the results across different institutional projects (meta-analysis); this could be a vehicle for doing that.

Agree. PAID is a promising opportunity and we look forward to a good set of proposals.

Comments on how to improve the COV review process, format and report template.

The contractor hired to support the COV provided COV members with the wrong dates for the COV, resulting in two COV members arriving a day early.

The science writer provided by the contractor was not qualified for this task and not helpful.

The COV would have preferred to receive more material upfront. The second binder would have been great to have prior to arriving at NSF. Even though we were told there would be no work ahead of time, we would have been happy to have pre-loaded the work/reading.

There were not enough nuggets.

The briefing was too long at the start of the COV.

It would have been helpful if the tables in the binder had been numbered.

There was insufficient info in binder relative to Fellows.

Agree. We appreciate the detailed critique of administrative support. The logistical problems will be addressed in future COVs.