

2010 HRD COV REPORT – STAFF RESPONSES: AGEP

Alliances for Graduate Education and the Professoriate

Program response to Committee of Visitors report, October, 2010

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

A.1 Questions about the quality and effectiveness of the program's use of merit review process.

1. Are the review methods (for example, panel, ad hoc, site visits) appropriate?

COV Comment: The panel reviews were well conducted; the panel did an excellent job at summarizing and then determining if criteria were met. The panelists were outstanding scholars and had tremendous sensitivity to AGEP goals. In general, reviewers had a good grasp of proposals. In contrast to the panel reviews, some ad hoc reviews lacked clarity, lacked substance, and did not address all merit criteria. The COV suggests that poor ad hoc reviewers should not be asked to review additional proposals. Lastly, there was no evidence of site visits.

Staff Response: The COV indicated that it considered the quality of panel summaries and Program Officer review analyses to be thorough in addressing the NSF review criteria. By contrast, some ad hoc reviews lacked clarity and substance and did not address all merit criteria. The COV recommended that ad hoc reviewers who did not provide full and substantive reviews not be asked to review in the future. We agree that this is a sound approach and will make every effort to select the best reviewers for all proposals. Although AGEP does not usually use "pre-award" site visits as part of the review procedure, we note that during the period in question, there were at least 22 site visits performed by program officers, external consultants, and program evaluation staff.

2. Are both merit review criteria addressed (a) In individual reviews? (b) In panel summaries? (c) In Program Officer review analyses?

COV Comment: Individual reviews should address all merit review criteria and ad hoc reviewers need better instructions. The intellectual merit criterion should address the research contributions of Ph.D. students in addition to best education and training practices. AGEP should generate more scholarly work on best practices utilized by the projects to inform future proposals and programs.

Staff Response: We concur with the COV comment that "AGEP should generate more scholarly work on best practices by the projects to inform future proposals and programs." This issue is directly addressed in the new solicitation that is being developed, in which dissemination of effective strategies and models will be a required activity.

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

COV Comment: Without reviewing any declinations, it is not possible to fully assess the rationale of decisions. However, the COV was notified that there were no declined proposals to examine.

Moreover, the rationale for awarding some proposals was not substantiated by the information in the jackets. In one case discussed, the proposal was poorly written, but was probably funded due to the past accomplishments of the PI.

The jacket files were not well organized and overall, were poorly assembled. There were many technical

difficulties in performing this review; all members of the COV had **great** technical difficulties accessing the eJackets. Some members of the COV were not able to open the “.docx” documents. Perhaps PDF files could be used in the future to avoid compatibility issues. For the AGEP COV, every step of the way was excruciatingly painful and time wasting. It seems that AGEP was the only sub-panel with such difficulties.

More staff time is necessary to make the technology and the jackets more accessible to the members of each COV sub-panel.

Staff Response: The COV reported that it was limited in jacket evaluation as there were no declines for the period. This resulted from there having been no active solicitation that awarded grants during the period. Proposals that were submitted were administratively withdrawn by the applicant institutions.

The COV reported that it found that the rationale for awarding one funded proposal was not apparent from the reviews, which were negative. The Committee also noted technical difficulties in performing this COV review. We appreciate the guidance and will strive to ensure that the rationale for proposal recommendations is clearly documented, and that materials provided for COV review are accessible.

8. Additional comments on the quality and effectiveness of the program’s use of merit review process.

COV Comment: Some programs were funded despite serious deficiencies identified by the panel and individual reviewers regarding limitations in their proposals. These limitations included some proposals that did not address all of the elements of the RFP. These programs were funded in spite of lack of evidence of program institutionalization in their respective universities.

Records have not been updated to reflect the status of proposals submitted for a non-funded competition in 2008. The proposals listed as 2008 declines were actually withdrawals; they are currently coded incorrectly, an error that should be corrected.

Staff Response: We note that four new projects were funded during the period. All reviewers recommended supporting the proposals, so approval was unanimous. One award (Small Grant for Exploratory Research for a pilot study) did not require external review (according to the NSF Grant Proposal Grants).

We appreciate the guidance and will strive to ensure that the rationale for proposal actions is clearly documented, particularly regarding post-panel processes that address panelists’ concerns on submittals recommended for funding. Administrative coding will also be reviewed and corrected where any errors exist.

A.2 Questions concerning the selection of reviewers.

2. Did the program use reviewers balanced with respect to characteristics such as geography, type of institution, and underrepresented groups?

COV Comment: In this COV’s very small sample, the geographic representation was highly limited; the East coast specifically was over-represented. Overall, other reviewer characteristics were well balanced.

Staff Response: Reviewer demographic characteristics were well balanced overall, but the distribution of reviewers was concentrated on the East Coast. The COV suggested a better geographic distribution of reviewers, and we intend to follow this recommendation to the best of our ability.

4. Additional comments on reviewer selection.
COV Comment: AGEP needs to strive for better geographic distribution among reviewers. There should be a higher URM percentage among reviewers.
Staff Response: The COV suggested a better geographic and ethnic distribution of reviewers, and we intend to follow this recommendation to the best of our ability.

A.3 Questions concerning the resulting portfolio of awards under review

2. Does the program portfolio promote the integration of research and education?
COV Comment: In some instances there was considerable integration of research and education, but at other times little integration was evident. With regard to the intellectual merit criterion, there is not enough emphasis placed on the research produced by students in advancing their field of research.
Staff Response: We appreciate this critique and have worked to make it clear in the upcoming solicitation that integration of research and education is a primary goal of the AGEP program. However, the AGEP program does not review the proposed research projects of students involved in AGEP programs, rather the intellectual merit of AGEP proposals is based on the merit of the proposed strategies for improving graduate student outcomes.

3. Are awards appropriate in size and duration for the scope of the projects?
COV Comment: Virtually no new awards were funded during this period because of lack of additional funding. The money was "pre-spent." A number of proposals were withdrawn because of the lack of funding (and lack of notification of the lack of funding) during this period. (The 2006 AGEP solicitation was not withdrawn in a timely manner.) Given these constraints, it is difficult to judge the appropriate size/duration for the projects.
Staff Response: We regret the paucity of awards during the identified cycle; however, in the absence of available grant funds new awards could not prudently be recommended or approved. In the future, we will strive to award proposals that are appropriate in size and duration.

4. Does the program portfolio have an appropriate balance of innovative/potentially transformative projects?
COV Comment: It is difficult to identify transformative works over a short period of time. There were very few evaluations of the projects so it is difficult to discern their effectiveness with respect to innovation and transformative activities. NSF should address the problem of reviewers not being able to properly acknowledge and favorably review proposals that are truly creative and transformative.
Staff Response: We appreciate the critique and will work to share this perspective with reviewers, such as in their orientation prior to the merit review panel.

7. Does the program portfolio have an appropriate balance of awards to new investigators?
COV Comment: The program appears to have been consistently funding the same set of institutions indicating a need to expand the number of institutions that are funded.
Continuing awards should compete on equal footing with new proposals rather than seemingly receiving automatic renewals.
Staff Response: There was criticism that the program repeatedly funds the same institutions, but this is a misperception perhaps due to the limited number of competitions under review. There have only been

two cycles of AGEP funding, and the second included an expanded pool of awardees.

8. Does the program portfolio have an appropriate balance of geographical distribution of principal investigators?

COV Comment: Many states in the Western region and some in the Midwest are not adequately represented. The COV members agree that extra efforts should be made to ensure improved geographic representation.

Staff Response: The COV criticized the lack of awards to states in the west and Midwest. We recognize and will address the need to work on outreach to achieve a broader geographic representation of alliances in the future.

9. Does the program portfolio have an appropriate balance of institutional types?

COV Comment: Input from a wider range of institutions might be valuable. One way to obtain this would be to encourage non-minority-serving institutions (MSIs) to participate in the alliances in some way.

Staff Response: The COV criticized what it perceived as a narrow range of institutional types represented. It suggested that more non-minority-serving institutions be encouraged to participate in some way. We note that in the portfolio presented all AGEP lead institutions are Ph.D.-granting universities, and the great majority of them are non-MSIs. However, we note the comment and hope to have a wide range of institutions represented in future alliances.

10. Does the program portfolio have an appropriate balance across disciplines and sub disciplines of the activity?

COV Comment: There is a good balance within the STEM disciplines. The COV looks forward to the inclusion of the Social, Behavioral, and Economic Sciences in a unified AGEP portfolio. The SBE AGEP proposals that were briefly examined appeared to have equal quality.

Staff Response: The COV recommended expansion of the program to include the Social, Behavioral, and Economic Sciences. This recommendation is expected to be implemented with the next solicitation.

11. Does the program portfolio have appropriate participation of underrepresented groups?

COV Comment: More data are needed on the participation within underrepresented groups. For example, the involvement of Native Alaskans and Native Hawaiians is unclear in AGEP programs.

Another issue arose during the COV discussion: If programs focus on African Americans, for example, are the Hispanic and American Indians well served in these programs? The COV would like to see a better understanding of the dynamics of interracial services in these programs.

Staff Response: Though the participation of underrepresented groups was rated as “appropriate,” there was a concern about the extent of participation of Native Hawaiians and Alaska Natives, and there was a question as to whether programs that focus on African Americans, for example, serve Hispanic and American Indians well. We, too, consider the lack of participation of Native Hawaiians and Alaska Natives to be an issue of concern. Programs have traditionally focused on the populations to which they have the most access; however, the program will strive to ensure all underrepresented minority groups are served by the AGEP program. These issues will be discussed in program planning meetings.

A.4 Management of the program under review.

1. Management of the program.
<p>COV Comment: The program needs more staffing to fulfill AGEP's mission. The COV experienced many logistical difficulties and had challenges completing responsibilities prior to the review. These challenges might have been prevented through more staff support.</p> <p>To better fulfill COV responsibilities, it would be helpful to review data as to when grantees received their award.</p>
<p>Staff Response: The COV recommended more staffing for the AGEP program. We note that the level of staffing has decreased since the period covered by the COV. However, we will work to ensure that program data are reviewed in a timely and ongoing manner.</p>
4. Responsiveness of program to previous COV comments and recommendations.
<p>COV Comment: In large part, the same concerns highlighted in 2007 remain in the current COV review.</p>
<p>Staff Response: The COV indicated that concerns highlighted in 2007 remain. For the most part, the 2007 COV report was strongly positive. There was criticism that the ad hoc reviews were of uneven quality, and we acknowledge that this is a continuing challenge for AGEP as it is for other NSF programs that use ad hoc reviewers. We will review and improve guidance given to ad hoc reviewers.</p>

PART B. RESULTS OF NSF INVESTMENTS

<p>B.1 <u>OUTCOME GOAL</u> for Discovery: <i>"Foster research that will advance the frontier of knowledge, emphasizing areas of greatest opportunity and potential benefit and establishing the nation as a global leader in fundamental and transformational science and engineering."</i></p>
<p>COV Comment: The COV recommends that you make an effort to encourage proposals that are creative and transformative and work to get them through the review process.</p> <p>We further suggest that you establish better linkages to other NSF-funded programs so that AGEP students become exposed to cross-cutting science.</p>
<p>Staff Response: The COV recommended establishment of better linkages to other NSF-funded programs. This is a continuing activity and a goal of the current staff. COV also recommended that AGEP students may benefit from such interaction. We applaud this goal and will work to include it in future solicitations and program management.</p>
<p>B.2 <u>OUTCOME GOAL</u> for Learning: <i>"Cultivate a world-class, broadly inclusive science and engineering workforce, and expand the scientific literacy of all citizens."</i></p>
<p>COV Comment: AGEP is contributing to engaging more URM in STEM disciplines. One recommendation is to provide opportunities to AGEP students to conduct outreach activities so that they are contributing to the scientific literacy of all citizens. AGEP students could be used as agents of change for creating a more educated and scientifically literate citizenry. Additionally, school teachers should be more engaged in research and other training activities at AGEP institutions.</p>
<p>Staff Response: The COV suggested activities for improving outreach and teacher inclusion in AGEP activities. We appreciate the recommendation and will share the suggested strategies with AGEP Principal Investigators for their project use.</p>

PART C. OTHER TOPICS

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

COV Comment:

Across the Portfolio

CREST offers a ripe opportunity to train students for the professoriate in addition to the AGEP program. It is recommended that there be a closer and more explicit link between these two programs (CREST and AGEP), citing the business of research as a necessary skill for future faculty.

Intra-agency communication and collaboration between LSAMP and other NSF programs (e.g. REU, STEP, OISE) should be more explicitly emphasized and encouraged.

Improved communication and coordination between AGEP and LSAMP-BD is necessary to leverage resources and achieve common goals in increasing the number of underrepresented minority (URM) students who obtain graduate degrees in STEM.

Program-Specific

Areas in need of improvement include:

- Increasing geographic representation,
- Broadening alliances between and among research universities,
- Building on best practices and lessons learned from previous programs, and
- Linking AGEP to other NSF programs.

Mentoring programs that match future faculty with faculty members currently working with URM STEM students could prove to have a big impact.

Another interesting idea is to find ways to promote “cross-talk” among URM groups within and across universities. Schools should be encouraged to reach outside of the URM group they have historically serviced and share their best practices and lessons learned with other groups in the URM community.

It is important to the program mission to recruit and encourage involvement from institutions not currently engaged in AGEP. New proposals should compete on equal footing with continuing alliances.

Staff Response: The COV recommended increased collaboration with CREST, LSAMP, and other NSF programs. It also recommended partnering with large foundations, National Laboratories, etc. We agree with this recommendation, and such discussions are underway to make these connections more apparent and effective.

The COV indicated that a broader portfolio of alliances in general, and a broader geographic representation specifically, should be a priority. We are happy to report that it appears that several alliances that provide broader geographic representation will be applying under the current solicitation. We hope they will produce competitive applications. Along this line, it was recommended that new proposals should compete on equal footing with continuing alliances. We plan to recommend support of highly meritorious alliance proposals, consistent with NSF guidelines on portfolio development.

The COV also recommended broadening alliances between and among research universities. Lead institutions in AGEP alliances must, by the eligibility requirements of the solicitations, be research universities. We plan to follow the program-specific recommendations as discussed in other sections of the COV response.

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

COV Comment:

Across the Portfolio

How robust are the Directorate's databases that track demographics and other data on the programs' target populations? Is the Directorate's use of money and performance evaluated with respect to those numbers?

Program-Specific

The record of meeting outcome goals for Broadening Participation (BP) regarding individuals, institutions, geography, and across education levels and settings is mixed. Increased outreach efforts, such as pre-award and post-award site visits, should be implemented to determine the adequacy of project implementation and measure outcomes.

Some standardization of project data with respect to accomplishments would enhance project and program monitoring and evaluation.

Staff Response: The Division of Science Resources Statistics (SRS) is the federal statistical agency within the NSF and manages the Scientist and Engineers Statistical Data Systems (SESTAT). National data on Science and Engineering education (beginning from the bachelor degree level) and employment, work activities, and demographic characteristics are collected in SESTAT. SRS produces the Science and Engineering Indicators Report and the Women, Minorities, and Persons With Disabilities in Science and Engineering Report from which data on the populations targeted by AGEP can be extracted. Program metrics for each NSF program are required by Office of Management and Budget (OMB). AGEP program metrics were prepared and submitted to EHR Front Office in July 2010.

The COV recommended increased pre-award and post-award site visits. We plan to follow this recommendation as staffing levels allow.

Consideration is being made to align data collection efforts for AGEP with programs in the Division of Graduate Education. In addition, common data elements for reporting progress and accomplishments are expected to be developed by the program.

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

COV Comment:

Across the Portfolio

Mandate BP within the Broader Impacts criterion and develop associated implications for non-compliance.

Identify ways NSF can partner with government and private entities to pool resources to broaden participation.

Program-Specific

Potential activities to encourage innovative thinking include:

- Providing training for panelists to recognize and support creative, innovative, and transformative ideas/concepts within proposals;
- Holding annual meetings for PIs to discuss best practices and share innovative ideas;
- Supporting short-term exchanges from URM researchers outside of the alliances to

<p>assist/evaluate efforts to implement URM programs; and</p> <ul style="list-style-type: none"> • Offering more opportunities for alliance institution teachers to enhance their research and teaching skills. <p>External resources that can be leveraged to promote BP for national competitiveness include:</p> <ul style="list-style-type: none"> • Partnering with large foundations (i.e. Gates Foundation) to promote BP; • Encouraging Alliances to send more students to National Laboratories (such as Brookhaven National Laboratory) for summer research internships; • Creating a database of AGEP alumni who can serve as program ambassadors; and Encouraging institutionalization through the successes of AGEP. <p>The Foundation should continue to reach out to URM groups that have not been a part of an institution's historically served population.</p>
<p>Staff Response: The COV recommended that alliances offer more opportunities for partner institution faculty/teachers to enhance their research and teaching skills. This is already an allowable activity. The COV recommended encouraging institutionalization of AGEP activities and goals. We agree and plan to make this an element of the next solicitation. Annual PI meetings are already held, and attendance is a programmatic requirement.</p> <p>AGEP staff provides orientation and training for panel reviewers by webinar before every review panel takes place. The two merit review criteria are explicitly discussed in the webinar, with guiding questions presented on what to consider in addressing intellectual merit and in broader impacts in the proposal. We will examine ways to improve our training material to help our reviewers further to recognize and support creative, innovative, and transformative ideas/concepts within proposals.</p>

<p>C.5. NSF would appreciate your comments on how to improve the COV review process, format and report template.</p>
<p>COV Comment:</p> <p><u>Across the Portfolio</u></p> <p>Provide systematic training in the steps to be used in extracting programmatic data.</p> <p>The off-site processes allowed the COV to concentrate on the specifics of the program and helped the group cover the materials and come to agreement more quickly.</p> <p>The links and PDFs embedded in the PowerPoint presentations increased accessibility to the materials.</p> <p>In a bundled COV, it would have been nice to touch base with the other programs prior to the cross-talk discussion. Being isolated from each group limited the potential benefits of a more diverse pool of ideas.</p> <p>It is difficult to reconcile the concerns put forward by individual sub-panels into a single document. Some recommendations/concerns may be diluted by other sub-panel observations.</p> <p>Sub-panels may have experienced an unequal emphasis in preparation for the COV, which led to logistical problems.</p> <p><u>Program-Specific</u></p> <p>Stream-lining the information provided for the review (for example, summary tables/data of program accomplishments) would have been beneficial to COV meeting participation.</p> <p>There were a number of logistical problems, mainly connected to the IT, in the preparation of the COV</p>

meeting. To resolve some of these problems, more staff is necessary. The COV sub-panel experienced problems accessing the eJackets and logging onto the website.

Additional information on the unique situation of AGEP was necessary to adequately answer template questions. It would be helpful to provide major highlights of the program's recent history, present status, and near future prior to the meeting (e.g., an explanation of the funding chronology).

The documentation inside the eJackets was not well organized.

The template should be tailored to the program to facilitate the review and result in more substantive comments.

Staff Response: The Committee noted technical difficulties in performing this COV review. We appreciate the guidance and will strive to ensure that materials provided for future COV reviews are accessible.