

## Responses to Recommendations

### ATE COV Report 2012

COV Recommendation I.3: The COV recommends that POs provide effective guidance to review panel chairs to ensure consistency of reviews and panel summaries and more strongly request substantive comments from panel members. This will require added responsibility on both the chair and the reviewers themselves. It may be helpful for NSF program staff to look at the panel summary comments both after reviews are completed [and] also ... overall to see if it is a consistent issue.

2012 Response: The ATE program will continue to update and provide written instructions to panel chairs. Examples of substantive reviews and panel summaries will continue to be made available to all reviewers (including panel chairs), and the importance of the reviews and panel summaries will be stressed in the pre-panel webinars offered to reviewers. Program officers overseeing panels will be instructed to monitor the completeness of both individual reviews and panel summaries.

COV Recommendation I.5: The COV suggests some consistency and more specific language be applied to communications for declinations as opposed to relying on standardized or boilerplate-type language.

- While the COV recognizes the extensive workload of POs, a sufficiently thorough and independent summary of the proposal's strengths and weaknesses should be included by the PO in all official summaries of the review process, including the PO Comments.

2012 Response: Program officers will continue to inform the prospective PI of the proposal's strengths and weaknesses within the PO Comments. While parts of the PO comments use standardized language, additional comments that inform or point the prospective PI to critical reviewer comments may be provided as a means of clarifying the decision to decline the proposal.

COV Recommendation II.1.a: The program should provide a more detailed breakdown of reviewers from four-year and two-year institutions within the public universities/colleges category.

2012 Response: The breakdown between reviewers from 2-yr and 4-yr institutions will be provided to future COVs.

COV Recommendation II.1.b: The program should collect and provide more detailed information about reviewer diversity to COVs when possible.

2012 Response: Reviewers are asked to provide information on diversity, but providing this information is strictly voluntary on the reviewer's part. Additionally, the most current set of NSF instructions to program staff specify that for the 2011 and 2012 COV process two questions have been deleted (A.1.7–time to decision and A.2.2–reviewer diversity).

COV Recommendation II.1.c: The proposal review panels should include reviewers with evaluation expertise who can focus on the evaluation elements of submitted proposals.

2012 Response: The ATE program covers grades 7-12, community and technical colleges, 4-yr institutions, industry, and economic development entities. Panelists also need to be diverse with respect to ethnicity and culture. Due to budget constraints, DUE panels are composed of 5 reviewers. The ATE program attempts to invite reviewers that represent this diversity as well as individuals with expertise in evaluation and assessment. The program will continue to work on constructing panels that cover the breadth of expertise needed, including evaluation expertise.

COV Recommendation II.2: The “COV book” should contain materials that document COIs and the process for how these incidences are handled.

2012 Response: We will include in the briefing materials for the next COV more details about the instructions provided to reviewers regarding COIs and about how program staff have handled COIs. With regard to the panels held during the period examined by this COV, both the pre-panel webinars for reviewers and the orientation sessions held at the beginning of panel meetings included briefings on confidentiality and conflicts-of-interest, which thoroughly explained both policy and procedure. Before participating in the panel meetings, all reviewers (100%) were required to read and sign the Conflict-of-Interests and Confidentiality Statement for NSF Panelists (NSF Form 1230P). Additional instructions that were sent to reviewers before the panel meetings advised the reviewers about the procedure they should follow if they discovered a COI with a proposal assigned to them. In FastLane, before they accessed assigned proposals, reviewers were presented with a screen describing NSF’s confidentiality and COI policies. As instructed, when reviewers discovered that they had a definite or suspected COI with a proposal, they contacted the program officer and described the potential COI relationship, and the program officer advised them about whether the relationship did in fact constitute a COI. When it was determined that a reviewer had a COI with a proposal, the reviewer described the COI relationship in the COI section of the FastLane review form for the proposal and “declined” (in FastLane) to submit comments or a rating for the proposal; the program officer read the reviewer’s description of the COI to ensure its clarity; and program staff then flagged the COI in NSF’s information systems so that the reviewer could no longer access the proposal in FastLane. The reviewer’s explanation of the COI automatically went into the review record for the proposal, along with the (non-COI) reviews of the proposal. Program officers, as well as panel chairs, ensured that any reviewer having a COI with a proposal left the panel room and did not participate in the panel’s discussion of the proposal. In the Review Analysis for any proposal with which a reviewer had a COI, the program officer noted the COI and explained that the reviewer was not allowed to take part in the discussion of the proposal. COV members can read descriptions of particular COIs and how they were handled in the review record and Review Analysis of the proposals that they examine.

COV Recommendation III.1.a: The COV would like to encourage co-funding activities and pursuing these opportunities purposefully. This would include co-funding between programs, divisions, and directorates as well as other federal agencies. Although co-funding may be difficult between federal agencies, alignment of programs, strategies, and activities should also be considered.

2012 Response: The ATE program will continue co-funding activities such as those currently carried out with the CyberCorps: Scholarship for Service (SFS) and Math and Science Partnership (MSP) programs. SFS co-funding promotes the development of cybersecurity capability within community colleges and MSP co-funding supports teacher preparation and professional development capacity in those schools. ATE will also continue to work with the Departments of Commerce, Defense, Education, Labor, and Energy to explore areas of common interest in technician education, including alignment of programs and joint activities.

COV Recommendation III.1.b: The COV acknowledges the need for the NSF and POs to be able to be responsive to changes in the management of grant processes that appear to be appropriate. However, these changes should be thoughtful, discussed with appropriate stakeholders, and thoroughly documented. For example, the Committee encourages a prospective and retrospective look at the impact of the decision to eliminate preliminary proposals so that the quality of proposals prior and post decision can be evaluated. It would be useful to understand the process that led to this change, rationale behind it, and how the impact will be measured. Additionally, the COV would like to see an explanation of this decision (as well as any future data on its outcome) be provided to future COVs.

2012 Response: The ATE program staff appreciate the recommendation that changes to the program should be pursued thoughtfully and with input from stakeholders. As this recommendation deals specifically with the elimination of preliminary proposals, this response will focus on that issue. The decision to eliminate preliminary proposals was discussed both within NSF and with the ATE community. Within NSF the decision was impacted by issues of time management and the lack of prospective PI response to reviewer comments. The response from the ATE community was mixed. Some people agreed that the preliminary process had aided prospective PIs in the initial program years, but no longer saw the need for preliminary proposals. These people pointed out that preliminary proposals were optional. All people saw a need to continue to provide new prospective PIs with support. AACC and the SCATE Center joined together to develop a large-scale project, Mentor Connect, to address this issue. This project is just beginning, and we will track the results carefully. In terms of proposals submitted this year (the first year without preliminary proposals), the numbers of proposals submitted did not significantly decrease and the ratings of the portfolio of proposals was not significantly different from the prior year when preliminary proposals were part of the program. We will continue to examine and compare the quality of proposals received in subsequent years with the years in which proposers had access to the preliminary proposal process.

COV Recommendation III.1.c: The COV encourages the NSF to continue to recognize the value-added relationships with prospective applicants/grantees with POs. The COV recommends that NSF offer additional support in terms of alternative staffing mechanisms to enable more frequent interactions with grantees to include site visits, conferences, regional meetings, and – very importantly – the continued growth and development of the annual PI conference. This suggested allocation of time and funds will mean POs must be freed of some of their current tasks.

- Sub-recommendation III.1.d: The program is encouraged to increase the use of rotator-like programs and potentially create new categories of rotators who can complete specific tasks working on a part-time basis from remote locations, utilizing today's remote working tools and technologies. This would provide the program with a chance to re-think ways to utilize rotators to both reduce workload for full-time POs and bring fresh ideas from the field into ATE.

2012 Response: The ATE program appreciates the value of the relationships between prospective PIs and Program Officers. ATE POs share the tasks of presenting at conferences and holding workshops whenever feasible to reach out to the community. NSF Community College Days are becoming increasingly popular, and ATE program officers participate in these events. POs also accept e-mails and phone calls at any time to discuss project ideas and programs. We see the ATE PI Conference as a vital networking and dissemination conference

that has been an asset in building the vibrant ATE community and will continue to work to develop the PI Conference.

Since the value of rotators is the experience and knowledge that they bring to DUE, the Division is reluctant to consider the option of hiring rotators who would work remotely. However, one strategy that DUE has employed is the use of former rotators to extend the outreach efforts of the existing staff. At minimal expense, these former Pos can participate in regional and national meetings near their home institutions.

Because many community colleges are Minority Serving Institutions (MSIs), development of a vibrant ATE community is the purview of both DUE and the Human Resources Division (HRD). In recognition of this, DUE and HRD staff are initiating efforts, such as sharing reviewer lists and presentations at professional society meetings. These efforts promise to enrich programs within the two divisions, promoting a stronger and more diverse STEM workforce.

COV Recommendation III.1.e: Metrics are in place to monitor grants, but the program should consider adding student employment outcomes, including job placement, wage gains, and advancement and employer validation of program expectations. This would provide an opportunity to look at the impact of the program on student learning and successful employment.

- It may be useful for the program to devise a pilot program that adds student employment outcomes, including job placement, advancement, credit hours completed, and other related measures, to proposals and evaluations.
- The potential pilot program should investigate ways to more effectively measure post-program data on employment figures.

2012 Response: A currently funded ATE project is underway with the deliverable being a guide to PIs in gathering data regarding student employment. ATE PIs have expressed great interest in the guide as many have encountered barriers in trying to follow students into industry. The ATE program staff will investigate the implementation of a pilot program that would include the type of data recommended by the COV. While some of the longitudinal data requested by the COV (job advancement, for instance) can be challenging for a PI to acquire, the ATE program also will follow the progress of the Research Experiences for Undergraduates pilot study to determine the mechanisms, expense, and feasibility of such a long-term data collection.

COV Recommendation III.1.f: The COV should consider having an equal emphasis on pre- and post-award policies and practices by providing further information on evaluation results from grants, monitoring, and other types of visits and other critical information. This would allow the COV to look at the impact of the decisions that were made for an award and provide the COV with an opportunity to give important feedback to the program.

2012 Response: Currently, the POs upload all correspondence from PIs into e-jacket; this includes results of NVC visits and other communications. In addition, the annual and final reports are available in e-Jacket. Since 2010 there has been a federal requirement that all PIs submit a Project Outcome Report at the completion of the project. These reports are found on the website [www.research.gov](http://www.research.gov) and are available to the public. Finally, all relevant evaluation and monitoring data are provided to the COV. As noted in response to COV Recommendation III.1.e, ATE program staff will investigate a broader set of metrics for program monitoring that may provide the information that the COV is seeking.

COV Recommendation III.2: The program should consider forming an independent task force to develop a report and offer suggestions of future emerging trends and opportunities. Task Force members could also provide guidance to POs about challenges in developing new program tracks and program emphases and inform the decision-making processes for future solicitations.

2012 Response: We appreciate the consideration of the COV of areas beyond the primary responsibilities defined for a COV. It is obvious that the committee is dedicated to the idea that the program should remain as strong in the future as it currently is, and is dedicated to the exercise of due diligence in the management of the program. The ATE program already utilizes several mechanisms to ensure that its emphases follow the cutting edge of technology and education, and the program will continue to support workshops, special studies, and other grantee-led efforts that analyze trends and look toward the future.

The ATE program has successfully engaged current PIs to organize and hold conferences featuring industry so that industry can inform all the stakeholders of current and future needs and trends. (See, for example, “Educating Biotechnicians,” [http://www.aacc.nche.edu/Resources/aaccprograms/ate/Documents/biotech\\_report.pdf](http://www.aacc.nche.edu/Resources/aaccprograms/ate/Documents/biotech_report.pdf); and “Preparing Energy Technicians for the 21<sup>st</sup> Century Workforce,” <http://ateec.org/ateec-downloads/preparing-energy-technicians-for-the-21st-century-workforce>.) The ATE program expects to continue with this practice as a means of tracking emerging trends and opportunities. These types of conferences may be used within any of the disciplinary areas covered within the program.

The annual High Impact Technology Exchange Conference (HI-TEC; <http://www.highimpact-tec.org/>) serves this purpose, and the Business Industry Leadership Partners for both projects and centers also provide advice.

COV Recommendation III.3.a: As part of program planning, the ATE program should look within their portfolio of awards to identify design principles and determine best practices and project/program impacts. These design principles would be used to inform future solicitations, provide guidance to review panels and proposal writers, and provide models for the STEM community.

2012 Response: Currently, the ATE PI community, in particular the ATE Centers, collects and publishes best practices and models. The program will investigate bringing these types of information together within ATE Central to facilitate PIs and prospective PIs effective use of these resources. The Synergy Project and the work by Jane Ostrander and Elaine Craft on Project Based Learning are two examples of currently funded efforts.

COV Recommendation III.3.b: Use the suggested independent task force – from the recommendation in Section III, Question 2 – to help with program funding prioritization.

2012 Response: Please see the response to Recommendation III.2 above. NSF uses the merit review process to inform funding prioritization of proposals submitted to the program. All proposals that are responsive to the solicitation are reviewed and considered. Mechanisms do exist to call out specific areas of interest for the program. For example, the current solicitation (11-692) brings to prospective PIs’ attention the following: “Specific activities targeting student recruitment, retention, and completion are encouraged both for projects and centers. And, the ATE program encourages the recruitment and retention of Veterans in STEM advanced technological programs as a means to diversify and increase the STEM workforce. Proposals that recruit a cohort of Veterans and suggest strategies to retain them are encouraged”. Additionally, the program management plan will outline program priorities.

COV Recommendation III.3.c: The COV recommends that the “Small Grants for Institutions New to the ATE program” element be expanded and broadened. This could mean broadening the eligibility requirements to allow proposals from departments that have not have had prior submissions even though the institution itself may have prior submissions. The program is best positioned to decide how the program can be expanded.

2012 Response: The ATE program staff agree with the COV that “Small Grants for Institutions New to the ATE program” is a critical component of the overall program to diversify the institutional portfolio of the program. This area has continued to grow since its inception in 2007, and we expect that this growth will continue.

COV Recommendation III.4: The COV recommends the following two areas of consideration for clarification to ensure responsiveness:

- Use and expansion of employer participation on review panels; and
- Present examples of how the program is increasing technician research opportunities.

2012 Response: The ATE POs strive to have reviewers that cover the breadth of institutional types, industry, gender, and ethnicity. It has been helpful that many of the faculty directing the technician education programs have a history in industry. In this way the program has one person who can wear “two hats.” However, this depth of background is not often apparent from the demographic information supplied by the reviewer. Additionally, the demographic survey is an optional survey. The ATE program staff will continue to include reviewers with industry expertise, and agrees that this perspective is essential to the assessment of proposals submitted to the ATE program.

COV Recommendation IV.3: It would be helpful for NSF to provide clear criteria and procedures regarding the terms “innovative” and “potentially transformative.” This information would be very important in providing guidance to proposers, reviewers, and future COVs.

2012 Response: The ATE program staff will provide additional guidance with regard to the terms “innovative” and “potentially transformative.” We agree that this would be a valuable resource for proposers, reviewers, and future COVs.

COV Recommendation IV.11: The ATE program should continue its efforts to increase the number of technicians in emerging technologies. The COV encourages the ATE program to find ways to be responsive to business and industry and find ways to encourage participation of diverse populations (e.g., adult learners, immigrants, and other groups).

2012 Response: Please see the response to Recommendation III.2 with regard to business and industry informing all the ATE stakeholders. Also, please see the response to Recommendation III.3.b that describes a mechanism by which the program alerts the community with regard to diverse populations and emerging areas. We agree that these are important issues that the ATE program needs to continuously support.

COV Recommendation V.1.a: NSF and the ATE program should develop a process that considers a long-term view of emerging issues and needs in STEM and incorporate that process into the planning and management of the ATE program.

As previously stated, the COV recommends (V.1.b) that the ATE program engage a group of external experts in a thoughtful discussion about the future of emerging technologies.

2012 Response: Please see the response to Recommendation III.2 above.

COV Recommendation V.2.a: The COV would like to see documentation/data on the time-to-award in the “COV book” to determine dwell time.

2012 Response: This information can be made available to the COV. The current directives on organizing a COV deleted this question from the 2011 and 2012 COV process (see response to Recommendation II.1.b).

COV Recommendation V.2.b: The COV recommends that ATE develop characteristics of exemplary projects.

2012 Response: The ATE program staff will craft a document that describes the manner in which exemplary projects are chosen for the COV process.