

**Response**  
**To the Committee of Visitors (COV) Report**  
**Integrative Graduate Research and Education Traineeship (IGERT) Program**

COV Meeting of June 21-22, 2011

The IGERT program is pleased to acknowledge the COV report, which finds that the IGERT program continues to be efficiently and effectively managed. The COV commented that “IGERT remains an exciting program with the potential to transform science and engineering by training young investigators in broad areas of science that are important for the future by giving them the broad set of professional skills they need to be successful in their careers.” Further, commenting on the strategic direction of IGERT, the COV commented that “the strategic plan and goals are well aligned with the NSF strategic plans and goals” and that the current IGERT portfolio reflects NSF investment priorities and goals in four key areas: transformative interdisciplinary research; innovative interdisciplinary graduate education with curricular options; informing the general public, undergraduates, and K-12 students about the innovative science associated with IGERT programs; and broadening participation in STEM graduate education and research. The report also raised important questions and provided valuable recommendations. All the recommendations by the COV are addressed in this document.

**Recommendation #1. Provide a clear and inclusive definition of “innovation”.**

In the current solicitation, we have defined innovation as the sequence of processes involved in **taking research results and synthesizing solutions to societal problems or finding new ways to address societal needs that include the process of successful implementation of such contributions**. This definition is inclusive, and addresses the concerns of social and behavioral scientists who might feel excluded by a narrower definition of a product or a prototype as in the engineering definition of innovation. Through discussions in the IGERT Coordinating Committee, we addressed the concerns of all directorates (disciplines) and settled on this inclusive definition. However, the definition may be refined for future competitions informed by NSF review of proposals, discussions with the community, and feedback from the review panels.

**Recommendation #2. The NSF should consider ways to incorporate innovation potential into the reviews and give some thought to coupling innovation in with the other criteria of intellectual merit and broader impacts.**

For the current competition, we have communicated with the panel managers that they should have at least one non-academic reviewer or reviewers from academia with demonstrated experience in the innovation process on the panel who can make evaluative statements about the innovation training methods proposed by the PIs.

We are adding a subsection under the Intellectual Merit criterion of the review called “innovation potential” which will ask reviewers specifically to address how the proposed transformative research lends itself to practicing innovation skills.

**Recommendation #3. IGERT program staff should explore alternative methods for attracting greater racial and ethnic diversity among panel reviewers. Similar efforts should be made to attract more panelists from minority-serving institutions (MSIs) of all types.**

While it has been our goal to have diverse and well-balanced panels, we agree with the COV that the program has room for improvement. We work closely with the panel managers, review the panelists they propose, and encourage them to add women and minorities if the panel make-up looks unbalanced. Nevertheless, we will use all means available to us to improve panel diversity. In that regard we plan to pursue faculty members at MSI's. We will generate a database of qualified PIs from these institutions and offer them to panel managers as a way of proactively addressing this issue.

**Recommendation #4. Incorporate more industry or non-academic panelists in the future to capture various perspectives on the “innovation” element of IGERT proposals.**

We concur and have taken some steps to address this. In order to facilitate the incorporation of non-academics and academics with demonstrated experience with the process of innovation, we contacted NSF's Small Business Innovative Research program (SBIR), and one of their Program Officers supplied a list of his reviewers and PIs who are generally not in academia, but interact with NSF in the SBIR program. We have provided the list of names to panel managers to add non-academic reviewers to their panels.

**Recommendation #5. Create a non-academic category within the Reviewer Information Spreadsheet to capture industry and policy panelist data.**

We will keep track of reviewers in the FY 12 round and identify non-academic and academic reviewers with innovation experience in the panels to begin to establish our own industry and policy panelist lists.

**Recommendation #6. The NSF should carefully assess the outcome of the plan to restrict institutions to one proposal per request for proposal (RFP) cycle to insure that the quality of proposals does not slip.**

We appreciate the COV's advice to assess the impact of the decision to restrict the number of applications per institution per cycle, and intend to follow up as suggested. We expect that the decision will help institutions make choices and put their best proposal forward that is consistent with their strategic priorities. We also expect that the institutionalization potential for awards will be higher when the one proposal put forward is consistent with institutional strategic plan. However, we know that there can be unintended outcomes. We do intend to study the effect of the one proposal per institution limit on the proposal breadth and the topics that were present and absent compared to recent years, as well as other outcomes.

**Recommendation #7. The COV encourages more site visits. Priority for such site visits should be given to: investigating partnerships between minority-serving institutions and majority serving institutions with a goal of clearly establishing the quality of the linkage; and evaluating institutional impact or change on graduate education.**

This recommendation is well-taken. We plan more site visits in the coming year. We have visited select IGERTs either due to management issues and student dissatisfaction; poor URM recruiting record; invitation from the PI to a local IGERT related meeting or conference; or coordination with other business travel. We will implement this recommendation immediately with a plan to make "catch them early" visits to new IGERT sites. We will meet with PIs and the faculty group and upper administration representatives to explain NSF's expectations and to help facilitate success of new awards. This will particularly help new faculty members and institutions that have never had an IGERT award to realize the importance of planning and understanding policies and expectations.

We also agree that we should focus site visits on some critically important aspects of the IGERT program such as the partnerships between minority-serving institutions and majority serving institutions and the question of institutional impact of the program. We intend to follow up on those recommendations within the coming year.

However, travel funds are limited. Consequently, we will also work to develop additional, effective post-award management approaches that do not require Program Officer travel.

**Recommendation #8. Post-Award Issues: The Abt Associates Inc. report should be disseminated widely to NSF stakeholders to give them some understanding of the success of the IGERT Program.**

The IGERT program sought space for the IGERT Abt report; however, due to the technicality of it being a report by a contractor (Abt Associates), we have not been able to post on the NSF website. The report, however, is available on the website of Abt Associates for public dissemination, and the availability of the report is announced to the broad IGERT community on the <http://www.igert.org> website. Hard copies were sent to various stakeholders within NSF and are offered as a handout to the broader community when the opportunity presents itself. In addition, an executive summary that was developed for broader dissemination has been very positively received.

This year we will offer a brown bag seminar at NSF to inform the NSF community about the evaluation results.

We will also seek time on the CGS and AAU conference agendas to present the findings and foster discussions about graduate education in the coming decades.

We appreciate the COV suggestion to invite graduate program directors and deans to the IGERT annual PI meeting. We will explore implementing this suggestion.

**Recommendation #9. Broaden the measure of success to document changes at the institutional level and capture institutional changes.**

These are good suggestions that we will consider as we strengthen our project monitoring system so that we collect the right data to measure results. In this regard, we wish to clarify how we use the monitoring data collected annually from PIs and trainees. These data become the annual report and as such are read with care by IGERT program staff. If information provided is incomplete or if it provokes concern, we send the report back to be corrected and proceed to discussions with the project team. Once the report is approved, it is turned into a PDF and is submitted to FastLane as the annual project report.

**Recommendation #10. Disaggregate data to know whether underserved minorities are successfully recruited and retained.**

This recommendation is a very good next step in our use of the collected data. We will connect this analysis to our review of partnerships with minority-serving institutions.