

**Program Response  
Committee of Visitors Report  
Integrative Graduate Education and Research Traineeships program  
October 23, 2008**

**Program Acknowledgement of COV report:** The IGERT program is pleased to acknowledge the COV report, which finds that the IGERT program is efficiently and effectively managed. The report states that the IGERT program is very well aligned with the national priorities identified in the NSF Strategic Plan. The report also finds that the program “is extremely successful in broadening the educational experience of graduate students beyond their particular technical and/or scientific areas of focus and as a result makes significant contributions towards NSF’s goal of preparing a diverse and globally engaged STEM workforce.” Finally, the COV expressed the hope that there would be annual budget increases for the program and not flat or declining funding. The report also raises many important and interesting issues and questions.

**Part A. INTEGRITY AND EFFICIENCY OF THE PROGRAM’S PROCESSES AND MANAGEMENT.**

**COV Recommendation 1: The COV recommends that the panel review process place more emphasis on the importance of research programs as an essential component of intellectual merit. This could be addressed in instructions to panelists and PIs.**

Program response: The interdisciplinary research theme serves as the foundation for the educational plan. Both the interdisciplinary research theme and the educational plan form the intellectual merit of the proposal. The program solicitation as well as instructions to PIs and panelists are consistent in this message, which the program will continue to provide.

**COV Recommendation 2: The COV also supports communication between Program Officers and PIs to resolve issues identified by the panel during the review process. For a proposal on the bubble, this interchange could elevate its priority and/or lead to funding approval. The COV suggests this practice be used systematically to ensure fairness to all applicants.**

Program response: For any proposal under serious consideration for an award, substantive issues raised during the review are shared with the PI and a request is made for a response. A satisfactory response is required prior to making an award. In cases where there are too many substantive issues raised at panel, an award will not be made.

**COV Recommendation 3: The COV recommends that IGERT consider an alternate methodology (for example, observation) for assessing and tracking panel diversity.**

Program response: Program will continue to investigate the ways in which the gender, race, ethnicity, and disability status of panelists may be determined and reported in a way that is consistent with NSF policy.

**COV Recommendation 4: The COV recommends that IGERT look for ways to impact institutions more broadly given its goal to serve as a catalyst to transform graduate education.**

Program response: In order to meet its goal of catalyzing a change in the culture of graduate education, the IGERT program will continue to take into account portfolio issues such as size, geographic location and type of institution as award selection factors, in addition to other factors such as gender, race, ethnicity and disability status of the PI, co-PIs and participants.

**COV Recommendation 5: [In order to determine the level of the academic achievements of IGERT] The COV suggests the NSF provide some kind of per capita measurement rooted in numbers of participating faculty and students. (p. 11)**

Program response: The NSF and the program evaluator will utilize available national norms where available to measure the quality and quantity of the achievements of the trainees.

**COV Recommendation 6: The COV recommends that the NSF attempt to document what the COV believes is a successful transformation of the structural elements of graduate education including degree requirements, qualifying examinations, and career destinations.**

Program response: The current annual reporting mechanism provides data concerning retention and graduation. A survey of all IGERT graduates has been concluded by an external evaluator and the data are currently being analyzed to determine the graduates' career paths. The program has shared the other recommendations with the contracted evaluator.

**COV Recommendation 7: The COV also recommends that the NSF investigate whether or not award regulation constitutes a barrier to certain types of institutions.**

Program response: In the program solicitation the amount of the award is stated as "up to" specific amounts for each year and for the total, so it is an option to submit proposals for smaller amounts. However, for the reasons stated in response to the previous COV, PIs typically propose the entire allowable budget because they need a critical mass of students in order to address both the interdisciplinary research and education goals related to the interdisciplinary theme of the project.

**COV Recommendation 8: The COV recommends that the NSF intensify efforts to increase outreach to these states (the Central North Territory, including North Dakota, South Dakota, and Wyoming).**

Program response: The IGERT program is increasing its outreach to these and other sites in several ways.

1. The program has made a 20-minute video on IGERT which is posted on the NSF web site in order to provide easy access to information about the program.  
[http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=12759&org=DGE&from=home](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=12759&org=DGE&from=home)
2. IGERT program officers have increasingly participated in EPSCoR outreach visits, meetings in Washington DC for potential applicants and for grants personnel, and have videoconferenced with distant sites.
3. A Resource Center was competed and awarded in 2008. This Resource Center will provide a vehicle for communication and collaboration among the IGERT programs, as well as dissemination of information about the program to the graduate education community and the public.

**COV Recommendation 9: The COV recommends that the IGERT program push hard to increase the number of globally focused proposals that would lead to international experiences for trainees.**

Program response: The IGERT program receives many proposals (at both the preliminary and full proposal levels) that include international experiences for trainees. At present the budget permits funding of only 10 awards from each cohort. Funding more international activities given the program's current budget would result in fewer awards. The program will work with Office on International Science and Engineering to determine whether more funding could be provided for this purpose.

**COV recommendation 10: The COV recommends more attention to post-award issues including measures of success, models for attracting students to graduate study, and other evidence of impact on science and institutions.**

Program response: The program has attended to some of the issues raised by the COV in the revised annual project reports and has passed along the COV's examples of post-award issues to the program evaluator for consideration for inclusion in future evaluations.

**COV recommendation 11: In the absence of a clear understanding of the role and impact of the diversity subcommittee, the COV suggests that program management dissolve the subcommittee and instead make diversity a responsibility of the ICC.**

Program response: The diversity subcommittee was dissolved in 2007 and diversity is now the full responsibility of the ICC and program management.

**COV recommendation 12: Given the complexity of the management scheme and the shared funding of the IGERT program, the COV would find helpful and strongly recommends that the COV have the opportunity to meet with the ICC during the review.**

Program response: This suggestion will be passed along to senior management for consideration for the next COV. For the present COV, the ICC was invited to attend the open parts of the COV. Dr. Frank Scioli, Acting Division Director of Social and Economic Sciences in the Directorate for Social, Behavioral & Economic Sciences and co-chair of the ICC, attended both parts and was available for questions throughout.

## **PART B. RESULTS OF NSF INVESTMENTS**

**COV recommendation 13: The COV recommends that IGERT broaden the criteria upon which the program measures successful outcomes. Place more emphasis on local applications, technology transfer, and commercial success.**

Program response: The main criteria for successful program outcomes will continue to relate to the trainee's experiences during graduate education and beyond graduate school, their careers. To the extent that the factors mentioned are a reflection of trainee success they will certainly be included.

## **PART C. OTHER TOPICS**

**COV recommendation 14: The COV strongly suggests that the program continue to push for increased representation of women, minorities, and persons with disabilities in IGERT projects.**

Program response: The IGERT program is so doing in numerous ways, and will continue to do so in the future.

Program solicitation: In the time frame of the COV the program added language to the program solicitation encouraging partnering with HRD programs on their campuses for the purpose of recruiting underrepresented minorities, to be included in both the preliminary and full proposals.

New PI meeting: A panel of NSF program officers presents their best advice on how to recruit and retain underrepresented minorities, women, and persons with disabilities.

PI meeting: At the annual PI meetings speakers and panels have addressed how to best recruit and retain underrepresented minorities, women, and persons with disabilities.

Web site (igert.org): The Broadening Participation Institute has provided a web site for the purpose of recruiting and retaining underrepresented minorities, women, and persons with disabilities. This web site provided links to NSF HRD programs and hyperlinks to all active programs.

Resource Center: A recently awarded Resource Center will subsume the role of igert.org as well as many other communication and collaboration functions for IGERT PIs, IGERT trainees, and the broader community.

**COV Recommendation 15: The COV recommends the program increase funding that would allow for regular site visits by the IGERT management team. Site visits that also look to evaluate institutional impact and/or change would be valuable.**

Program response: This suggestion will be forwarded to senior management. As a part of program evaluation, Abt (the evaluation contractor) has made site visits for the purpose of evaluating faculty and institutional impact and may do so again in the evaluation of the most recent three cohorts of IGERT, an evaluation currently in the planning stage.

Because of the need for closer communication between the IGERT sites and the NSF, the program is providing the means for IGERTs beginning in FY 2009 to equip themselves with Access Grid so that “site visits” could be made electronically. Videoconferencing is an option for other sites.

**COV Recommendation 16: The COV recommends that the program further investigate opportunities to enhance the innovation/entrepreneurial component of the program by encouraging PIs and trainees to take their research results one step beyond publication via technology transfer such as partnership with industry, start ups, etc. Look into the feasibility of establishing a specific resource center where PIs and trainees could meet with experienced entrepreneurs, venture capitalists, and/or technology executives from industry.**

Program response: The program acknowledges that entrepreneurship and technology transfer skills are valuable training for graduate students and their faculty advisors. As a first step in this regard, a workshop on these topics will be held at the 2009 Annual PI Meeting and the materials will be posted on the meeting web site.

**COV Recommendation 17: In addition the COV strongly recommends that IGERT use the upcoming evaluations to put the program’s outcomes in context. Benchmark data to enable the COV to judge program performance in research productivity, student success, and access for diverse students and faculty are needed.**

Program response: The upcoming program evaluation will continue to use control groups as well as national norms for comparisons.

**COV Recommendation 18: University best practices for visiting or review committees always allow time for onsite discussions with constituents. The COV highly recommends that program management consider building this into the IGERT review process. Interviews with all stakeholders including the ICC, other**

**directorates within the NSF, selected PIs and trainees would greatly enhance the depth and quality of the review.**

Program response: Program will convey this recommendation to senior management.

In addition to recommendations, the COV included several questions.

**Question 1. Over the past three years the IGERT program has met its GPRA goals. However, the COV noted an increase in the percentage of proposals requiring 9-12 month for a decision over the previous year. Is this increase due to complexity of the proposals or other factors?**

Program response: The increase in the percentage of proposals requiring more time was due to the time of year in which the final budget is known.

**Question 2. The COV has many questions [with respect to the award decision process]. Does the ICC make collective decisions or do they primarily ratify the decision of the program officers? How do they prioritize across the different panels? When evaluating proposals for funding, does the ICC look for opportunities to diversify? Do we have any information or feedback from members of the ICC on their view of the process?**

Program response: The role of the ICC in the award process is spelled out in the Program Management plan. The Management Plan must be approved on an annual basis by all participating directorates and offices. Since the last year covered in this COV the Program Management plan has spelled out these roles and the process even further as follows:

“The process for preliminary proposal review has multiple steps, providing for open discussion among all ICC members.

1. Preliminary proposals are reviewed by panels developed by and moderated by ICC members (ongoing practice).
2. Panel moderators share with the ICC at the reporting out meeting both their panels’ and their own recommendations for preliminary proposals to go forward to the full proposal stage. Should the recommendations by the ICC panel moderator differ from those of the panels, panel moderators will provide reasons in writing and both sets of recommendations will be shared with the ICC (ongoing practice).
3. The DGE Program Officers consolidate all recommendations and develop a list to be shared with the ICC prior to presentation to the DGE DD (ongoing practice).
4. DGE Program Officers make recommendations for preliminary proposals to be invited for a full proposal to the DGE DD (ongoing practice).

Likewise for the full proposals, the review process has multiple steps providing for open discussion among all ICC members.

1. Proposals will be reviewed by panels developed by and moderated by ICC members (ongoing practice).
2. Panel moderators share with the ICC at the reporting out meeting both their panels' and their own recommendations for proposals for funding. Should the recommendations by the ICC panel moderator differ from those of the panels, panel moderators will provide reasons in writing and both sets of recommendations will be shared with the ICC (ongoing practice).
3. The DGE Program Officers consolidate all recommendations; develop a proposed slate based on portfolio considerations; discuss slate recommendations and, as required, resolve any questions with the relevant ICC members; and share the proposed consolidated slate for recommendation for funding with the ICC prior to presentation to the DGE DD (ongoing practice).
4. The DGE Program Officers present the proposed slate to DD/DGE (ongoing practice).
5. Upon DD concur of a slate, the slate will be communicated with the ICC and submitted to the AD/EHR for approval. DD and AD will concur BEFORE final decisions concerning award portfolio is finalized (ongoing process).

Typically, proposals included in the High Priority category are recommended for award. For all substantive issues requiring clarification there will be a satisfactory resolution before final award recommendations are made.”

Also in the current program management plan there is language addressing diversification relative to the issue of multiple IGERTs at one institution:

“As a continuation from last year, there is expanded wording addressing the topic of multiple IGERTs at a given institution in the program solicitation both with regard to the requirement for additional information on the expected value added from another IGERT, and with regard to the impact of IGERTs already awarded. The institution is required to provide this information in the letters of commitment, and the importance of the information is reflected in the additional review criteria. Also, in response to ongoing concerns voiced by the senior management, the issue of multiple IGERT awards at a single institution will be considered as an important portfolio issue in the consideration of awards.”

**Question 3. During the recent COV a number of questions arose pertaining to composition of the panels. Some members were troubled that detailed information about the proposals and panelists assigned to specific panels was not available for COV review.**

Program response: Access to the proposals sampled was provided both electronically in My COV as well as in hard copy for the awards. Both had the information mentioned. Program regrets that instructions for viewing this material were apparently not clear enough and will make additional efforts to do so for the next COV.

**Question 4.** [Nevertheless a large part of the Central North Territory, including North Dakota, South Dakota, and Wyoming remains underrepresented. **The COV would be interested to know why these states are underrepresented. Are the deficiencies due to the lack of submissions by applicants from these states? Or are the deficiencies the result of declinations?**

Program response: The program will research the numbers of applications made from these states and their fates. One possibility is that these states have few applicant universities relative to other states.

**Question 5. The COV would like to know what the barriers are to increasing awards to MSIs.**

Program response: The program is continually working with those PIs who wish to apply to IGERT from every institution. The most significant barrier for all institutions is the low success rate of the program, beginning with over 400 preliminary proposals and awarding about 20.

**Question 6.** [The COV review of the program portfolio determined that approximately 20% of awards have been to private institutions.] **The COV would find it useful to know how this number compares to the overall percentage of doctoral degrees awarded each year by private institutions in the U.S. Are private institutions underrepresented in the IGERT portfolio?**

Program response: Utilizing the report by the Council of Graduate Schools report, Graduate Enrollment and Degrees 1997 to 2007, combining research extensive and intensive doctoral institutions and using data only for U.S. citizens and permanent residents, program has determined that about 30% of these students are enrolled in private institutions. This was not viewed as a seriously different percentage than for IGERT awards.

**Question 7. The COV had questions concerning some of the responses of the program to the previous COV.**

Questions and Program response:

**Has an ad hoc group of advisors been formed?** The IGERT program has multiple sources of advice, including the EHR Advisory Committee, the invited speakers and panelists at the PI meeting, and most recently, the participants in a workshop on the Impact of Transformative Interdisciplinary Research on Institutions. The latter included 50 IGERT PIs and 85 Provosts or Vice Presidents for Research of IGERT universities.

**What is the status of a co-funding mechanism between IGERT and EPSCoR?** The program continues to work to find a way to combine the two kinds of funding models.

**Does the program work more closely with AGEP and LSAMP?** At the NSF and with our IGERT projects we are working to forge closer connections.

**Has the program developed set of best practices to be shared across all IGERTs?** The new Resource Center will provide the opportunity for IGERT PIs to share their unique best practices among themselves and to the community at large.