

MEMORANDUM

DATE:

TO: Bernice Anderson, Senior Advisor for Evaluation
 Directorate for Education and Human Resources

FROM:

SUBJECT: COV for [enter program name]
 COI and Diversity Memo

The Committee of Visitors report for the ___GK-12_____ Program was approved at the EHR Advisory Committee meeting held at NSF on __9/22/2008. The COV consisted of __6__ members selected for their expertise related to the goals of the program. They provided a balance with respect to the type of institutions supported through the program, gender, and representation from underrepresented groups. The following table shows the main features of the COV’s diversity.

| Category of COV Membership | No. of COV Members in Category |
|--|--|
| Member of EHR Advisory Committee..... |1.... |
| Organization Type: <input type="checkbox"/> University..... <input type="checkbox"/> Four-year College..... <input type="checkbox"/> Two-year College..... <input type="checkbox"/> K-12 School or LEA..... <input type="checkbox"/> Industry..... <input type="checkbox"/> Federal Agency..... <input type="checkbox"/> Public/Private <input type="checkbox"/> Professional/Membership |3.....1.....1.....1..... |
| Location <input type="checkbox"/> East..... <input type="checkbox"/> Midwest/North <input type="checkbox"/> West..... <input type="checkbox"/> South..... |2.....2.....2..... |
| Gender <input type="checkbox"/> Female..... <input type="checkbox"/> Male..... |4.....2..... |
| Persons with Disabilities..... | |
| Race/Ethnicity <input type="checkbox"/> White..... <input type="checkbox"/> Black..... <input type="checkbox"/> Hispanic..... <input type="checkbox"/> Asian/Pacific Islander..... <input type="checkbox"/> Native American..... |3.....2.....1..... |

The COV was briefed on Conflict of Interest issues and each COV member completed a COI form. COV members had no conflicts with any of the proposals or files. (or, if they did, use ‘Proposals and files were not available to COV members in those cases where the member had a COI and members were not allowed to participate in discussions of actions with which they had conflicts.’)

FINAL DRAFT, 8/29/2008 4:45 PM
CORE QUESTIONS and REPORT TEMPLATE
For
FY 2008 NSF COMMITTEE OF VISITOR (COV) REVIEWS

Guidance to NSF Staff: This document includes the FY 2008 set of Core Questions and the COV Report Template for use by NSF staff when preparing and conducting COVs during FY 2008. Specific guidance for NSF staff describing the COV review process is described in Subchapter 300-Committee of Visitors Reviews (NSF Manual 1, Section VIII) that can be obtained at <www.inside.nsf.gov/od/oia/cov>.

NSF relies on the judgment of external experts to maintain high standards of program management, to provide advice for continuous improvement of NSF performance, and to ensure openness to the research and education community served by the Foundation. Committee of Visitor (COV) reviews provide NSF with external expert judgments in two areas: (1) assessments of the quality and integrity of program operations and program-level technical and managerial matters pertaining to proposal decisions; and (2) comments on how the results generated by awardees have contributed to the attainment of NSF's mission and strategic outcome goals.

Many of the Core Questions are derived from NSF performance goals and apply to the portfolio of activities represented in the program(s) under review. The program(s) under review may include several subactivities as well as NSF-wide activities. The directorate or division may instruct the COV to provide answers addressing a cluster or group of programs – a portfolio of activities integrated as a whole – or to provide answers specific to the subactivities of the program, with the latter requiring more time but providing more detailed information.

The Division or Directorate may choose to add questions relevant to the activities under review. NSF staff should work with the COV members in advance of the meeting to provide them with the report template, organized background materials, and to identify questions/goals that apply to the program(s) under review.

Suggested sources of information for COVs to consider are provided for each item. As indicated, a resource for NSF staff preparing data for COVs is the Enterprise Information System (EIS) –Web COV module, which can be accessed by NSF staff only at <http://budg-eis-01/eisportal/default.aspx>. In addition, NSF staff preparing for the COV should consider other sources of information, as appropriate for the programs under review.

Guidance to the COV: The COV report should provide a balanced assessment of NSF's performance in two primary areas: (A) the integrity and efficiency of the *processes* related to proposal review; and (B) the quality of the *results* of NSF's investments that appear over time. The COV also explores the relationships between award decisions and program/NSF-wide goals in order to determine the likelihood that the portfolio will lead to the desired results in the future. Discussions leading to answers for Part A of the Core Questions will require study of confidential material such as declined proposals and reviewer comments. *COV reports should not contain confidential material or specific information about declined proposals.* Discussions leading to answers for Part B of the Core Questions will involve study of non-confidential material such as results of NSF-funded projects. The reports generated by COVs are used in assessing agency progress in order to meet government-wide performance reporting requirements, and are made available to the public. Since material from COV reports is used in NSF performance reports, the COV report may be subject to an audit.

We encourage COV members to provide comments to NSF on how to improve in all areas, as well as suggestions for the COV process, format, and questions. For past COV reports please see <http://www.nsf.gov/od/oia/activities/cov/covs.jsp>.

**FY 2008 REPORT TEMPLATE FOR
NSF COMMITTEES OF VISITORS (COVs)**

The table below should be completed by program staff.

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| Date of COV: Date of COV: August 14 & 15, 2008 |
| Program/Cluster/Section: Graduate Teaching Fellows in K-12 Education (GK12) |
| Division: Division of Graduate Education |
| Directorate: Education and Human Resources |
| Number of actions reviewed: Awards: 35 Declinations: 10 Other: |
| Total number of actions within Program/Cluster/Division during period under review: Awards: 2005 - 31 Awards 2006 - 25 Awards 2007 - 26 Awards Declinations: 2005 - 111 Declinations 2006 - 95 Declinations 2007 - 77 Declinations Other: Below is a comprehensive table of all program actions for the review period of 2005 – 2007. The GK12 program is about much more than making awards and declining proposals. Such a large and dynamic program requires further actions after the initial award has been made. Combined actions include: <ul style="list-style-type: none"> ♦ Continuing Grant Increments (CGI) - made following the approval of each year’s annual report. ♦ Competitive (COMP) - new requests for funding, basically the proposals which undergo review. ♦ Other - the “catch-all” NSF category which includes things like declined supplements, PI changes, no-cost extensions, and other actions. ♦ Returned (RTNR) - the proposals returned without review. ♦ GK12 awards supplements (SUPP) - additional funding requests for international activities or to fund additional Fellows from underrepresented groups. Supplements are formal requests made by the PI and awarded on a case by case basis. |

| Proposal Type | FY 2005 | FY 2006 | FY 2007 | Total |
|----------------------|--------------------|--------------------|--------------------|--------------|
| CGI | 50 | 47 | 37 | 134 |
| COMP | 143 | 120 | 103 | 366 |
| OTHER | 22 | 35 | 0 | 57 |
| RTNR | 2 | 0 | 0 | 2 |
| SUPP | 36 | 8 | 7 | 51 |
| Grand Total | 253 | 210 | 147 | 610 |

Manner in which reviewed actions were selected:

The GK-12 program staff used a random sampling process to select the actions the COV reviewed.

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

Briefly discuss and provide comments for *each* relevant aspect of the program's review process and management. Comments should be based on a review of proposal actions (awards, declinations, and withdrawals) that were *completed within the past three fiscal years*. Provide comments for *each* program being reviewed and for those questions that are relevant to the program under review. Quantitative information may be required for some questions. Constructive comments noting areas in need of improvement are encouraged.

A.1 Questions about the quality and effectiveness of the program's use of merit review process. Provide comments in the space below the question. Discuss areas of concern in the space provided.

| <p>QUALITY AND EFFECTIVENESS OF MERIT REVIEW PROCESS</p> | <p>YES, NO, DATA NOT AVAILABLE, or NOT APPLICABLE¹</p> |
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| <p>1. Are the review methods (for example, panel, ad hoc, site visits) appropriate?</p> <p>Comments:</p> <p>Review</p> <p>The review guidelines for 05 were incredibly detailed. Program staff provided reviewers with excellent instructions for giving helpful feedback to PIs.</p> <p>The points for panel facilitators that were apparently given to NSF staffers who worked with the panels are very helpful. Did proposers know in advance that NSF would be looking for those characteristics? If not the COV suggests including those items in the solicitation since an examination of the solicitation did not clearly identify them. Communicate these items to panelists in the review guidelines. It is a good idea to give everyone a sense of the "big picture" goals. The 2007 management plan addressed these goals.</p> <p>The number of proposals assigned to each panelist seems much lower than the number typical of other grant programs. This factor ensures that each reviewer really has the necessary time to do a comprehensive review. Costs associated with bringing together a panel when each reviewer is only reading 8 or so proposals could be a concern. If this does become a concern, the number could easily be increased by 50%.</p> <p>How are the results of sub-panels compared since not all the proposals were reviewed by the same group? The COV feels strongly that project quality is</p> | <p>YES</p> |

¹ If "Not Applicable" please explain why in the "Comments" section.

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| <p>more important in funding decisions than disciplinary distribution at the panel review stage.</p> <p>Overall the process is thorough as is preparation of reviewers. The written instructions are very comprehensive. Staff was easily accessible via e-mail if there were questions during the process of completing Fastlane prior to arrival at NSF. Fastlane works effectively.</p> <p>Monitoring:</p> <p>According to the 2005 management plan (which appears to have some then-out-of-date information at its end – i.e., “planned” activities for FY 04): GK-12 awards will be monitored and evaluated through:</p> <ul style="list-style-type: none"> • Annual progress reports, • Site visits to grantees and institutions involved, • Periodic meetings of GK-12 Principal Investigators, GK-12 Teachers and Fellows, • A Committee of Visitors every third year of the program’s operation (first COV was May 2002), and • Third-party evaluation (by AIR) and data tabulation (by QRC) of project and program outcomes and impacts (in cooperation with EHR’s Division of Research, Evaluation and Communication). Standardization of indicators is anticipated to meet the requirements of the Government Performance and Results Act of 1993. <p>This information appears in the other management plans as well and is appropriate.</p> <p>The COV would find helpful and recommends reporting on AIR’s outcomes.</p> <p>Source: Jackets, GK12 Program Information and Documentation</p> | |
| <p>2. Are both merit review criteria addressed (%s from a sample of the jackets provided n=36 reviews for 16 projects)</p> <p>Comments:</p> <ul style="list-style-type: none"> a) In individual reviews? 97% provided YES b) In panel summaries? 94% provided YES c) In Program Officer review analyses YES Analysis often doesn’t provide sufficient detail on declinations. 94% provided. <p>The COV responded “yes” to all questions. The panel review process is appropriate and addresses both merit review criteria; how completely they were addressed it isn’t always clear.</p> <p>Comments to awardees are thorough and address the merit criteria systematically. Declinations need more guidance and specifics related to merit enabling PIs to make changes for future submissions.</p> | <p>YES</p> |

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| <p>The COV noted that although there was a decrease in the number of proposals after the elimination of Track 2 awards, the number of awards to new institutions was in fact higher than in prior years.</p> <p>Source: Jackets, GK12 Program Information and Documentation</p> | |
| <p>3. Do the individual reviewers provide substantive comments to explain their assessment of the proposals?</p> <p>Comments:</p> <p>In most cases, yes; in some cases, no. This inconsistency concerns the COV particularly when proposals are not recommended for funding. Strongly encourage reviewers who give proposals low scores to provide documentation in the text of the review that justifies the low score. Some reviewers provided one sentence of analysis or reasons for evaluations which the COV team considered insufficient. Present the information in a constructive way so that potential PIs can improve their proposal and resubmit with a greater likelihood of success in the future. Suggest that reviewers use their reviews as a way to mentor prospective PIs, particularly those PIs with little prior grant-writing experience.</p> <p>The COV noted that as part of the program’s stewardship to the interested community, panels should be asked to provide useful feedback on low-scoring proposals to help guide PIs who may consider resubmitting.</p> <p>Source: Jackets, GK12 Program Information and Documentation</p> | <p>YES</p> |
| <p>4. Do the panel summaries provide the rationale for the panel consensus (or reasons consensus was not reached)?</p> <p>Comments:</p> <p>This process needs improvement. When proposals are declined, the panel summary can be an important source of constructive comments that prospective PIs can use to refine their proposal if they wish to resubmit it at a future date.</p> <p>The process usually provides more justification for a positive than a negative decision on all levels of review. See above.</p> <p>Source: Jackets, GK12 Program Information and Documentation</p> | <p>YES</p> |

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| <p>5. Does the documentation in the jacket provide the rationale for the award/decline decision?</p> <p>Comments:</p> <p>The panel summaries, especially for declinations, are thorough in terms of the summary review; however, individual panel reviewers often provided single sentence comments which were not instructive. A good evaluation, especially for a declination, provides both positive and negative feedback. Feedback is especially important for first time PI submissions that are declined.</p> <p>Source: Jackets, GK12 Program Information and Documentation</p> | <p>YES</p> |
| <p>6. Does the documentation to PI provide the rationale for the award/decline decision?</p> <p>Comments:</p> <p>The context statements are adequate but need more information. For example, information regarding the type of institution making the submission, characteristics of the PI(s), focus of the proposal (primary, secondary or middle grades), and geographic location (urban vs. rural, state) could help potential PIs who were not funded understand decisions that were made. (See comments in Number 5 above.)</p> <p>Performance over the past three years is consistent to meet the goal.</p> <p>Source: Jackets, GK12 Program Information and Documentation</p> | <p>YES</p> |
| <p>7. Is the time to decision appropriate?</p> <p>Comments:</p> <p>Consistent performance over the past three years met the goal. This achievement is commendable especially in light of the small staff size and previous COV comments.</p> <p>Source: Jackets and EIS-Web COV module.</p> | <p>YES</p> |
| <p>8. Additional comments on the quality and effectiveness of the program's use of merit review process:</p> <p>Comments:</p> <p>The 2005 review indicated the need for more direction on what constitutes intellectual merit vs. broader impact. This issue appears to have been addressed. Responses from fellows acknowledge the goal of enabling the fellows to "understand, conceive and teach our disciplines in a fundamental way and communicate scientific concepts clearly." One of the most common comments from fellows relates to improved communication skills, recognition of the need to consider the audience in teaching and to provide public information about science.</p> | |

Having four reviewers look at each proposal is a good idea. Five would be even better but there are one-time/money limitations to consider. Having four is much superior to some programs which assign the minimum of three reviewers to each proposal. Using a smaller number of reviewers increases the likelihood of a decision that is not warranted. The COV further recommends the use of sub-panels with some disciplinary expertise.

A.2 Questions concerning the selection of reviewers. Provide comments in the space below the question. Discuss areas of concern in the space provided.

| SELECTION OF REVIEWERS | YES , NO, DATA NOT AVAILABLE, or NOT APPLICABLE² |
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| <p>1. Did the program make use of reviewers having appropriate expertise and/or qualifications?</p> <p>Comments:</p> <p>The GK-12 program assembles panels that are qualified, diverse and representative of a variety of the communities that GK-12 affects. The apparent quality of the projects reflects the effectiveness of the panels. The COV highly commends the Program Officer and her staff for their efforts in assembling these panels.</p> <p>Reviewer composition included better representation of qualified social scientists, K-12 teachers and industry as recommended in the 2005 report. Representation also included Individuals who work with science education and with graduate education.</p> <p>One recommendation is to briefly discuss COIs (what they are, how to handle them) in the instructions to reviewers' information.</p> <p>Source: Jackets, Solicitations, GK12 Program Information and Documentation</p> | <p>YES</p> |
| <p>2. Did the program use reviewers balanced with respect to characteristics such as geography, type of institution, and underrepresented groups?</p> <p>Comments:</p> <p>Gender = good</p> | <p>YES</p> |

² If "Not Applicable" please explain why in the "Comments" section.

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| <p>Racial/Ethnic and disabilities = good (The graphs appear to show that African Americans are a bit overrepresented) Geography = good: The east, with the exception of New England, appears to be overrepresented compared to the west. Type of Institution = good</p> <p>Make efforts to increase the representation of Hispanics, especially Mexican-Americans.</p> <p>Good to have included external evaluations with timelines for objective evaluations. It would be helpful if GK-12 would provide a template for the evaluation.</p> <p>Source: Jackets and EIS-Web COV module, GK12 Program Information and Documentation</p> | |
| <p>3. Did the program recognize and resolve conflicts of interest when appropriate?</p> <p>Comments:</p> <p>A form was sent to reviewers and the checklist asked them to indicate any COI as did instructions the day of the review.</p> <p>Initially no data on COI was available to the COV. While additional information concerning conflicts was available on site, there was no data to indicate how they were resolved.</p> <p>Source: Jackets, GK12 Program Information and Documentation</p> | <p>DATA NOT AVAILABLE</p> |
| <p>3. Additional comments on reviewer selection:</p> <p>None noted.</p> | <p>NOT APPLICABLE</p> |

A.3 Questions concerning the resulting portfolio of awards under review. Provide comments in the space below the question. Discuss areas of concern in the space provided.

| <p style="text-align: center;">RESULTING PORTFOLIO OF AWARDS</p> | <p style="text-align: center;">APPROPRIATE, NOT APPROPRIATE³, OR DATA NOT AVAILABLE</p> |
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| <p>1. Overall quality of the research and/or education projects supported by the program.</p> <p>Comments:</p> <p>The GK-12 program awardees demonstrate transformative and high quality outcomes.</p> <p>Characteristics of Fellows = good, good gender and racial/ethnic diversity.</p> <p>Discipline = Biology is very overrepresented. Math and physics are underrepresented. Most secondary science K-12 teachers have a major or a minor and certification in Biology. Biology classrooms are not in need of an infusion of recent research results; the other sciences and math (chemistry, physics, and geosciences) have the need. Geoscience teachers in particular need assistance because very few geosciences teachers have special training in the field.</p> <p>New awards = Great distribution to women and new PIs. This is a fantastic distribution.</p> <p>PI Gender and Minority = This can hopefully be improved upon in the future. The number of awards to minorities is particularly low – if compared to the number of minorities in the population at large. The 1% value may however represent a large number compared to the number awarded to minority PIs by the Foundation.</p> <p>The education projects are excellent and provide a unique means for fellows to teach their research interests. The 2005 report indicated a need for more research on the program itself and the number of referred articles in 2006-07 was 137, a significant increase. There were 416 conference presentations. The new Web site is an excellent way to disseminate curricular and research activities, increase awareness of publications and provide links to conference presentations; however, the site offers only 4 conference links. It would be helpful for NSF to provide the COV with a complete list of where articles appeared and where presentations were made. If possible, links on the GK-12 to conference presentations that are in the public domain should be more complete than the 4 that are there. Examples in the jackets indicate that the</p> | <p style="text-align: center;">APPROPRIATE</p> |

³ If “Not Appropriate” please explain why in the “Comments” section.

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| <p>program has had an impact on test scores. One issue to consider in terms of research is where program announcements are being published. Also disseminate information about the Web site. Most K-12 teachers do not attend the types of conferences fellows attend nor do they read scientific journals (especially K-6). The COV suggests doing an analysis of where research has been published that will reach K-12 teachers most effectively as well as faculty who prepare K-12 science and math teachers. Also do an analysis of how the Web site advertises to K-12 teachers and those who prepare them.</p> <p>The COV applauds the impressive publication and presentation record that awardees are amassing but noted concern about the accessibility of project-related publications and conference presentations to the K-12 portion of the GK-12 community.</p> <p>Accomplishments are good. Is there a way to track institutionalization or implementation of similar programs at new sites? This feature would also be a good measure of accomplishment.</p> <p>To generate interest, encourage the PIs to promote their achievements. Universities with good publicists excel at publicizing achievements, but others may need help and will benefit from the recognition.</p> <p>Require a CoPI from the School of Education at the Coll/University when possible. Also require that the Fellows provide some level of in-service training for K-12 teachers.</p> <p>This data collection started in 2006. The information in the table and graph includes 2006 and 2007. These data should include as much information as possible (quantitative/qualitative) on the effect of the Fellows on improvement of science education K-12, e.g., improvement in graduation rates/promotions for those classes with Fellows.</p> <p>Source: Jackets, Macro International GK12 Data, GK12 Program Information and Documentation</p> | |
| <p>2. Does the program portfolio promote the integration of research and education?</p> <p>Comments:</p> <p>Good to have included external evaluations with timelines for objective evaluations. GK-12 should provide a template for the evaluation.</p> <p>Yes, integration is done extremely well as the proposals, site visit reports, and evaluations indicate.</p> <p>Source: Jackets, GK12 Program Information and Documentation</p> | <p>APPROPRIATE</p> |

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| <p>3. Are awards appropriate in size and duration for the scope of the projects?</p> <p>COMMENTS:</p> <p>Appropriate but should provide some additional information on the reasons for dropping the Track 2 programs.</p> <p>Source: Jackets, NSF EIS system</p> | <p>APPROPRIATE</p> |
| <p>4. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> • Innovative/potentially transformative projects? <p>Comments:</p> <p>A portfolio that includes some really innovative projects is bound to include some spectacular failures – ideas that are before their time or too far out-of-step with the culture of the population that they are intended to serve. Where are these?</p> <p>Several programs address regional issues that require scientific research and intervention. These programs definitely have transformative value as well as those that have industry partners. A high percentage of projects address biological and environmental issues as well as technology.</p> <p>Although the COV agrees with the program response to the previous COV, that GK-12 as a program is transformative, we would like the program to encourage innovation in proposals. The COV noted a lack of social science balance in the award portfolio, an issue that has been cited in the previous COV. While this is in part an NSF-wide issue, we encourage program staff to reach out to the “SBE” community directly as PIs and as collaborators on GK-12 projects.</p> <p>Source: Jackets, GK12 Program Information and Documentation, Highlights</p> | <p>APPROPRIATE</p> |
| <p>5. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> • Inter- and Multi- disciplinary projects? <p>Comments:</p> <p>Few projects are inter- or multi-disciplinary but that isn’t a real problem; K-12 science instruction is still highly compartmentalized. Although few projects are inter- or multi-disciplinary, this is not unexpected since the projects are directed at K-12 science education which is still highly compartmentalized. In this sense, the inter- and multi-disciplinary balance is appropriate. It may be in our best interest to serve teachers and their students by compartmentalizing information so that it is readily used. In this era of standards and accountability, teachers can’t get too far out of the box.</p> <p>The 2008 report clearly indicates multi-disciplinary projects so there appears</p> | <p>APPROPRIATE</p> |

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| <p>to be movement in the right direction.</p> <p>Source: Jackets, program information, PI provided information.</p> | |
| <p>6. Does the program portfolio have an appropriate balance considering, for example, award size, single and multiple investigator awards, or other characteristics as appropriate for the program?</p> <p>Comments:</p> <p>The use of someone involved with pedagogy and specifically math and science education is an important element in the program's success. Furthermore it increases needed collaboration between STEM and education colleges and has the potential to impact pre-service math and science courses.</p> <p>The award size is fairly consistent; most projects are funded or request support at close to the maximum allowable level.</p> <p>Provide EIS data for number of CO-PIs and disciplines of CO-PIs.</p> <p>Encourage incorporation of multiple PIs, including representatives from education colleges.</p> <p>Source: Jackets, GK12 Program Information and Documentation, and EIS-Web COV module</p> | <p>APPROPRIATE</p> |
| <p>7. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> • Awards to new investigators? <p>NOTE: A new investigator is an investigator who has not been a PI on a previously funded NSF grant.</p> <p>Comments:</p> <p>There was a major increase in the number of new PIs and a much higher success rate for them between 2006 and 2007, but generally there were not many new PIs. NSF should determine if there are consistent problems with submissions from new PIs that might indicate some needed change in instructions or improved information about navigating the grant process for new investigators. It is likely that there will always be fewer new PIs.</p> <p>To increase the number of new investigators the program has to be more proactive during the review process. The individual panel reviews and the panel summary need to provide better guidance to address the weaknesses. The panel commentaries for declined proposals were less extensive than those provided for highly recommended and recommended proposals. Additionally, the panel reviews could provide encouragement toward resubmission. Although there was no data to refer to, the COV was concerned about the weight that these (and other education-related) grants might carry relative to other NSF grants toward tenure and promotion, and</p> | <p>APPROPRIATE</p> |

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| <p>suggests that the program office consider how to measure this.</p> <p>This is a difficult question to answer. Although data for new PIs appears here, there is no comparative data given for experienced PIs. The COV needs comparative data to answer this question.</p> <p>Source: EIS-Web COV module</p> | |
| <p>8. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> • Geographical distribution of Principal Investigators? <p>Comments:</p> <p>Yes, there is generally a good balance. To date 4 states have not received an award. Analyze the lack of awards in these four states to determine if lack of submissions or one or more declinations is the basis for the deficiency. If due to declinations, do any notable patterns exist?</p> <p>The only 4 states that do not have GK12 programs are Nevada, South Dakota, Iowa and Vermont indicating that program representation exists throughout the rest of the country. An issue to consider is whether the distribution is lower in rural states such as those noted above compared to urban districts. Understandably, GK-12 programs work more easily with schools which are closer to the university thereby decreasing travel time. The need for outreach is probably greater in the rural school districts.</p> <p>The GK-12 program might have to develop incentives for universities to work with rural schools. Partnering with past NSF program participants such as the Rural Systemic Initiatives and TCUP would provide investigators with effective ways of including rural schools. Also, increase funding to provide for travel and personnel to those programs working with rural schools. Take into consideration the unique challenges of distance and travel in large rural areas.</p> <p>An increase in the future in number of awards to rural or mid-continent areas would be good.</p> <p>Source: EIS-Web COV module, GK12 Program Information and Documentation</p> | <p>APPROPRIATE</p> |
| <p>9. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> • Institutional types? <p>Comments:</p> <p>The GK-12 staff makes final award recommendations in consultation with the GK-12 committee. The GK-12 staff diligently keeps a diverse portfolio with regards to institution type and location in order to strengthen STEM research and education throughout the United States.</p> <p>Since this is a graduate education program with a research emphasis, the</p> | <p>APPROPRIATE</p> |

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| <p>assumption exists that Ph.D. and top 100 institutions will continue to dominate as awardees. Encourage regional partnerships to incorporate master's or 4-year institutions and make this a priority for funding consideration. Additionally, such partnerships would benefit fellows at the master's level who might be considering additional graduate work and would benefit Ph.D. students by exposing them to non-research institutions as career options.</p> <p>From the suite of jackets to which we had access, it seems that large research-focus institutions are well-represented among the awardees, while smaller institutions appear to be overrepresented among the declinations. Since smaller institutions may have a more local-oriented, community-service mission, it would be good to determine how to get these types of schools more involved in the GK-12 effort.</p> <p>Source : NSF EIS System, GK12 Program Information and Documentation</p> | |
| <p>10. Does the program portfolio have an appropriate balance:</p> <ul style="list-style-type: none"> • Across disciplines and sub-disciplines of the activity? <p>Comments:</p> <p>The portfolio reflects an increase in the number of inter-disciplinary projects.</p> <p>Of concern to the COV is the overrepresentation of awards in the field of biology.</p> <p>Increase the number of awards in support of education in the other sciences and mathematics fields. Accomplish this increase through outreach to the other STEM communities by NSF representatives from the appropriate Directorates.</p> <p>Within the COV members disagreed on whether there is a need to include an international component. One member recommended elimination of the international component from the GK-12 program. The US is experiencing a critical shortage of STEM specialists and the GK-12 can certainly help with that problem. The dissenting member indicated that inclusion diverts efforts from the important goal of increasing the size and diversity of the US STEM workforce.</p> <p>Several COV members commended the inclusion of an international opportunity as a supplement to the major project. These members indicated support for the NSF program taking the lead in developing materials to assist PIs in making international contacts and in providing exemplary materials for use in adding this component. An international experience can aid US K-12 schools in improvement of their teaching methods by exposing them to models from other cultures.</p> <p>Source: Jackets, GK12 Program Information and Documentation, GK12.org</p> | <p>APPROPRIATE</p> |
| <p>11. Does the program portfolio have appropriate participation of underrepresented groups?</p> | <p>APPROPRIATE</p> |

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| <p>Comments:</p> <p>Since women and minorities are underrepresented in the STEM disciplines, the percentages are good.</p> <p>The program portfolio clearly encourages participation of underrepresented minority groups. The materials provided on the CD for the GK1-12 Annual Meeting show that a relatively small proportion of the funded projects actively emphasize the participation of underrepresented groups in their outreach efforts.</p> <p>Source: EIS-Web COV module involvement means being a PI or co-PI), GK12 Program Information and Documentation, Macro</p> | |
| <p>12. Is the program relevant to national priorities, agency mission, relevant fields and other constituent needs? Include citations of relevant external reports.</p> <p>Comments:</p> <p>This program has tremendous potential to reverse three trends—a lack of interest among domestic students in STEM disciplines, declining math and science scores in the US when compared to other industrialized countries, and greater interest among underrepresented groups in STEM disciplines. By making fellows aware of the need to do public science, to have a connection to K-12, and to develop creative approaches to teaching science, these trends all have potential to be reversed. The COV wants to know: How much impact can the program have beyond those institutions that directly participate? How far beyond the duration of the grant will the impacts be felt? Dissemination and adequate follow up with fellows are key to determining if the fellows and institutions continue their outreach after participating fellows secure employment in academic or non-academic sectors. It is important that the NSF collect this information as part of its 10-year program evaluation.</p> <p>The percentages of females and members of underrepresented minority groups among the fellows is very good.</p> <p>The types of schools (i.e., urban, rural, etc.) are diverse.</p> <p>One recommendation for data analysis is to look at average % of STUDENTS receiving free or reduced price lunches rather than the % of schools participating in the program. Schools can be considered as participants in the program if even 1% of their students participate. In such a case, the school as a whole would not be accurately characterized as serving a low-income student population.</p> <p>The COV did not have the data necessary to determine how many projects are tied into AGEP, LSAMP, TCUP, HBCU-UP, or CREST.</p> <p>Source: Program information, NSF strategic plan</p> | <p>APPROPRIATE</p> |

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| | |
| <p>13. Additional comments on the quality of the projects or the balance of the portfolio:</p> <p>The program's goals align with NSF's Strategic Plan and the investment priorities described in that plan.</p> | |

A.4 Management of the program under review. Please comment on:

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|---|--|
| <p>1. Management of the program.</p> <p>Comments:</p> <p>The GK-12 is an evolving, potentially transformative program that needs more staff. The program's small staff does an excellent job considering what is required of them and how few people are involved. Much more can be done to increase program impact and sustainability. The COV recommends assigning at least one more permanent program officer to this project. Program management is done well as evidenced by the length of time for decisions, the responsiveness to the 2005 review, the development of the Web site, and the addition of several new workshops and projects.</p> <p>Site visits are a critical part of the selection of awards and of project monitoring. The program staff does not appear to be visiting the sites frequently enough. The GK-12 program would benefit from more frequent site visits, particularly in the early phases of the projects. The COV suggests that these visits would help the PO to disseminate information about successful strategies to newly funded PIs and would allow the PO to help the PIs identify potential problems before the project has existed for a long time. Strategic interaction would make it easier for PIs to fully engage their evaluators in the initial stages of the project. PIs would be able to design the evaluation so that it is useful for informing the project staff throughout the project.</p> <p>GK12 Program Information and Documentation</p> | |
| <p>2. Responsiveness of the program to emerging research and education opportunities.</p> <p>Comments:</p> <p>The program has been very responsive to recommendations by the previous COV as changes from 2005 to 2008 reveal. The growing number of inter- and multi-disciplinary submissions and awards speaks to the changes in the STEM disciplines. The international component is important for 3 reasons. First, science is becoming more international and students need to be integrated into an international science network early in their careers; GK12 can assist in the integration. Second, there are numerous approaches to teaching STEM subjects in K12 classrooms and the opportunity to explore what is taking place around the world provides a new source of ideas for US teachers. Finally, classrooms from K through graduate school, especially at the graduate level in STEM disciplines, are multicultural. Having an international experience will add another dimension to development of fellows' communication skills. Keeping it as a supplemental component and not</p> | |

making it a requirement in the review process is the best approach.

The availability of supplements for international activities is critical. Adding international activities may be a good fit for some projects but not all. Having an international component should never be a criterion for receiving initial funding from the program. Internationalizing a program developed for the US can be a very difficult task, as difficult as the original US-based GK-12 project.

3. Program planning and prioritization process (internal and external) that guided the development of the portfolio.

Comments:

The portfolio is quite impressive and indicates outstanding vision and management.

Data provided little information about the vision for the future of the program, or explicit statements about how the GK-12 program and its goals align with NSF's overall strategic plan and goals. The COV recommends that POs consider addressing this comment by discussing how GK-12 aligns with the NSF overall strategic plan. This information will be helpful to the program in justifying requests for new or additional funding or staff.

The education projects are excellent and provide a unique means for fellows to teach their research interests. The 2005 report indicated a need for more research on the program itself. While the number of referred articles in 2006-07 was 137, a significant number, most articles were about the fellows' research and appeared in scientific journals. A small percentage related to the K-12 part of the program and some of the pedagogical articles were in college teaching journals rather than K-12. More dissemination work can still be done in this area. The accomplishments section listed 416 conference presentations. Some of the pedagogical papers were presented at conferences where K-12 teachers or science education faculty were likely to be in attendance, but those conferences were insignificant in number. Only 4 links to conferences exist on the NSF GK-12 Web site. The new Web site is an excellent way to disseminate curricular and research activities and increase awareness of publications. Currently only 26 of the projects have provided curriculum projects on this site. Require this provision for all projects if it isn't planned. If possible, make links on the GK-12 to conference presentations that are in the public domain more complete than the 4 that are there. The COV recommends dissemination with an action plan as a potential topic for the annual GK12 meeting. Consider developing a best practices publication that might be done in conjunction with an organization such as the National Science Teachers Association.

Examples in the jackets indicated that the program has had an impact on test scores. Also analyze how advertisement of the Web site reaches K-12 teachers and those who prepare them.

4. Responsiveness of program to previous COV comments and recommendations.

Comments:

Articulation of the international component's goals needs improvement. Is the goal to promote international collaborations for fellows, identify math and science pedagogical approaches in other countries, or both? It is important to provide strong guidance and support from NSF so that more institutions will take advantage of the supplemental funding. Although the workshop is a good start, NSF should consider providing front-end information about the types of connections PIs need to

make with international offices and schools of education to learn where potential partners might exist. Typically the PIs will connect with institutions where they have research contacts. These institutions might not be the best places to send students if the goal is to learn about alternative approaches to K-12 education. Schools of Ed can provide some guidance here. If the goal is to promote development of the fellows' international connections, other universities may exist where PIs don't have contacts and would provide an opportunity for development of new research alliances. International offices have comprehensive lists of worldwide agreements and can evaluate strengths of disciplinary programs.

Post-award, the COV recommends that NSF continue the workshop and provide information based on their experiences of where cutting edge research or pedagogical development is active worldwide along with contacts for institutions that don't have strong international connections. Large research institutions will have many connections, but regional institutions may not have highly developed international collaborations. Previous comments indicate other areas where responsiveness is clear and where there is a need for more work.

5. Additional comments on program management:

None noted.

PART B. RESULTS OF NSF INVESTMENTS

The NSF mission is to:

- promote the progress of science;
- advance national health, prosperity, and welfare; and
- Secure the national defense.

To fulfill this mission, NSF has identified four strategic outcome goals: Discovery, Learning, Research Infrastructure, and Stewardship. The COV should look carefully at and comment on (1) noteworthy achievements based on NSF awards; (2) ways in which funded projects have collectively affected progress toward NSF's mission and strategic outcome goals; and (3) expectations for future performance based on the current set of awards.

NSF investments produce results that appear over time. Consequently, the COV review may include consideration of significant impacts and advances that have developed since the previous COV review and are demonstrably linked to NSF investments, regardless of when the investments were made.

To assist the COV, NSF staff will provide award "highlights" as well as information about the program and its award portfolio as it relates to the three outcome goals of Discovery, Learning, and Research Infrastructure. The COV is not asked to review accomplishments under Stewardship, as that goal is represented by several annual performance goals and measures that are monitored by internal working groups that report to NSF senior management.

B. Please provide comments on the activity as it relates to NSF's Strategic Outcome Goals. Provide examples of outcomes ("highlights") as appropriate. Examples should reference the NSF award number, the Principal Investigator(s) names, and their institutions.

B.1 OUTCOME GOAL for Discovery: "*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.*"

Comments:

The GK-12 program has tremendous potential to advance this goal. The COV found many examples of how GK-12 program projects support NSF's strategic goals in Discovery and Learning. Graduate fellows work on teams with in-service teachers to promote discovery in K-12 schools, and the program provides the Fellows with experiences that will make them better communicators of their discipline.

NSF Highlights

[2005](#) Tab 2005

NSF Award Numbers:

0231998

Award Title: GK-12 Science and Mathematics Inquiry in Los Angeles Urban

Schools**PI Name: Arlene Russell****Institution Name: University of California-Los Angeles****PE Code: 7179UCLA GK-12 Science and Mathematics Inquiry in Los Angeles Urban Schools**

A UCLA based NSF GK-12 program reaches over 135 first-year mathematics and science teachers and over 50,000 students in the most poorly performing schools in Los Angeles, based on internal assessments by the Principal Investigator. Fellows and teachers are adapting, developing, and field-testing more than 200 standards-aligned, inquiry-based mathematics and science activities.

NSF Award Numbers:**0231738****Award Title: Enhancing Inquiry-Based Science and Math in Appalachian Middle Schools****PI Name: Tom Otieno****Institution Name: Eastern Kentucky University****PE Code: 7179**

Teams of NSF GK-12 Fellows and Eastern Kentucky University (EKU) faculty introduced to middle school teachers in six rural schools the use of new technology including Calculator-Based Laboratories (CBLs),

Lego Mindstorm robots, digital microscopes, and interactive science/math software in the areas of physical and biological sciences, computer science and mathematics. The teams have developed and implemented lesson plans and units incorporating inquiry-based activities.

[2006](#) Tab 2006**NSF Award Numbers:****0232016 University of Hawaii PI Kenneth Kaneshiro guides graduate students and local high school students into the field for research.****University of Hawaii**

By working in research teams with GK-12 fellows, teachers and students in Hawaii's schools have directly contributed to the body of scientific knowledge about Hawaii's ecology and biodiversity. Teachers and students are experiencing the power of genuine investigative scientific study as assistants to graduate students in their research. Supportive partnerships among the University of Hawaii's GK-12 program, the Hawaiian Public Schools, a variety of outdoor ecological organizations, and scientific curriculum groups have enabled the project to integrate field research experiences with standards-based education.

Award Title: Track 2, GK-12: Inspiring and Building Tomorrow's Workforce: A Grades 3-12 Engineering Continuum**PI Name: Jacquelyn Sullivan****Institution Name: University of Colorado at Boulder****PE Code: 7179****0231832**

Graduate Fellows involved in the GK-12 program at the University of Colorado Boulder had a busy fall semester teaching engineering to more than 1,600 girls and boys through its integrated teaching and learning program. Ten miles east of Boulder is the diverse, low-income area of Lafayette. In the Lafayette schools, a group of eight engineering Fellows taught pre-engineering lessons to 65 classes each week. In the Denver School of Science and Technology, also a high needs school, GK-12 Fellows initiated an engineering technical elective course. All lessons were released for publication in NSF's Teach Engineering digital library (www.TeachEngineering.com). During fall 2005 engineering lessons were developed on several topics, including weather, biodomes, dams, states of matter, the human body and natural disasters.

NSF Award Numbers:

0440614

Award Title: Track 1, GK-12 Teaching Assistants Sharing Knowledge (TASK) in Alaska

PI Name: Kara Nance

Institution Name: University of Alaska Fairbanks Campus

PE Code: 7179

Through a GK-12 grant to the University of Alaska, Fairbanks, 12 GK-12 graduate fellows are building an educational culture focused on computer and cyber skills to increase participation of students from underrepresented groups in cutting edge science. Working with teachers and students, GK-12 fellows have established partnerships that provide instruction on Safe Web Browsing, Password Security, Mathematics of Passwords, Introduction to Computer Forensics, Introduction to Network Security, Introduction to Cryptography, Introduction to Steganography, and Computer security.

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[2007](#) Tab 2007

NSF Award Numbers:

0538541

Award Title: Engineering, Science and Math Education for a Global, Technological Society

PI Name: Kevin Truman

Institution Name: Washington University

PE Code: 7179

The Graduate Teaching Fellows in K-12 Education (GK-12) Fellows at Washington University in Saint Louis have incorporated their research in structural engineering into modules for the K-12 classroom that illustrate how math, science, construction, economics, engineering and globalization are intertwined. Using these modules, partner secondary schools have aligned with Mukogawa Women's University Junior and Senior High School in Japan to discuss earthquakes and the different measures taken in each country to provide safe, economical seismically designed structures. The students from urban St. Louis discover that the problems solved by engineers are often global in nature. This concept has been used at two St. Louis schools this year and will expand to four schools next year in collaboration with K-12 schools from South America and Thailand. New modules that focus on other engineering related topics such as robotics, water treatment, remote controlled vehicles, and computer visualization will be introduced next year

Award No: DGE-0440560

Project Title: Sustaining the Maine Science Corps: Collaborative Integration Of Research Experiences and Active Learning into Biosciences Education.

Principal Investigators: S. Monroe Duboise, Ah-Kau Ng, Stephen Pelsue, Walter Allan

Institution: University of Southern Maine

The NSF funded Graduate Teaching Fellows in K-12 Education project at the University of Southern Maine has bioscience graduate fellows provide laboratory based learning experiences for students in twelve rural high schools across Maine. This program uses sustained student driven inquiry based projects focusing on defined model environmental systems. Model classroom aquatic habitats have been established as year long frameworks for pre-college student research studies with microbial communities, biodiversity, and molecular genetic characterization being emphasized as illustrated in the highlighted work of GK-12 fellow, Jon Letendre, in two north central Maine High Schools. Culminating the extended projects are presentations of research findings within the schools and when possible, at a university poster day presentation.

Award No: DGE-0337668

Project Title: Revitalizing Achievement by using Instrumentation in Science Education (RAISE)

Principal Investigator(s): Vikram Kapila, Magued Iskander, and Noel Kriftcher

Institution: Polytechnic University

Website URL: <http://gk12.poly.edu/>

The Graduate Teaching Fellows in K-12 Education funded RAISE project at Polytechnic University, integrates modern sensing, instrumentation, and monitoring technologies in the lab curriculum of Active Physics, Earth Science, Forensic Science, Living Environment, Marine Science, and Physics in four New York City (NYC) public high schools. These students use sensors and computerized data-collection tools routinely in their classrooms. In addition, students participate in an independent research project to identify and explain the widespread use of modern sensors in their own lives and communities (e.g., climate control units, dish/laundry washers and dryers, refrigerators, odometers, dashboard indicators, cruise control, active suspension, electronic ignition and fuel injection, and air bags, New York City subway, elevators, traffic signaling units, and airports, etc.).

Award Number: DGE 0440511

Project Title: Advancing Geospatial Skills in Science and Social Sciences (AGSSS)

Principal Investigators: Sarah Witham Bednarz (PI); coPI's: Anthony Filippi; Andrew Klein; Robert S. Bednarz

Institution: Texas A&M University-College Station

Website URL: <http://agsss.tamu.edu>

The Graduate Teaching Fellows in K-12 Education program called *Advancing Geospatial Technologies in Science and Social Sciences* (AGSSS) at Texas A&M introduces spatial thinking and the technologies that support spatial thinking to urban middle and high school science and social science classrooms. During the school year fellows and teachers collaborate to revise, develop, and implement curriculum projects which feature spatial thinking, the application of geospatial technologies and observational science such as remote sensing and geographical information science (GIS).

B.2 OUTCOME GOAL for Learning: “Cultivate a world-class, broadly inclusive science and engineering workforce, and expand the scientific literacy of all citizens.”

Comments:

The program better prepares fellows as world-class scholars. Literacy increases through public outreach and public programs and dissemination of activities using a variety of sources from local newspapers to scientific journals. GK-12 also provides the opportunity to develop international collaborations and learn from international contacts.

The fellows engage in applied research through GK12 while simultaneously engaging in basic research in their university laboratories. By developing new ways to interest young students in STEM disciplines, the likelihood increases that a solid core of domestic scientists and engineers will be available who will also transform their disciplines, the country and the world. GK-12 fellows are in a unique position when asked to translate their own learning and discovery at the forefront of the STEM disciplines into learning and discovery of K-12 students. The fellows applaud NSF for supporting this research.

NSF Highlights

[2005](#)

0139348

Award Title: University of South Florida: Students, Teachers, And Resources in the Sciences (STARS), An NSF GK-12

Fellows Project

PI Name: O. Geoffrey Okogbaa

Institution Name: University of South Florida

PE Code: 7179

Recognizing the importance of expanding diversity, this project also proudly notes that this year it successfully recruited and accepted a larger proportion of underrepresented minority students. Forty-seven percent (47%) of the fellows are Hispanic and African American students.

[2006](#) Tab 2006

0086420

Award Title: Georgia Tech Student and Teacher Enhancement Partnership (STEP) Program

PI Name: Donna Llewellyn

Institution Name: GA Tech Research Corporation - GA Institute of Technology

PE Code: 7179

Georgia Institute of Technology - The Georgia Tech STEP-UP program places Graduate Fellows in Atlanta's High Schools to encourage science and math interest among high school students. The GK-12 Fellows, mostly minority graduate students, paired with high school teachers in minority serving high schools serve as mentors and role models to the students. They offer tutoring, science project assistance, and encourage engagement with organizations such as the National Association of Black Engineers.

0231832

Award Title: Yale University Graduate Teaching Fellows in Biodiversity

PI Name: Michael Donoghue

Institution Name: Yale University

PE Code: 7179

Yale University and New Haven Public Schools Partner to Provide Real Science Experiences

Graduate Fellows at Yale University Peabody Museum of Natural History and Master Teachers at the New Haven Public School District partnered to produce inquiry-based science curricula that use Museum specimens to explore biodiversity. Fellows are exposed to educational issues at the middle school level and challenged to communicate the importance of nature and the excitement and value of science. Teachers increase their science content knowledge as they develop new content-rich curricula. Their students, largely from underrepresented groups, benefit from exposure to science and its relevance to their daily lives. This initiative strengthens the capacity of Yale's graduate programs to provide resources for enhancing science education in the local school system.

[2007](#) Tab 2007

NSF Award Numbers:

0440529

Award Title: Track 1 GK-12: Integrated Science Teaching Enhancement Partnership (InSTEP)

PI Name: Richard Tankersley

Institution Name: Florida Institute of Technology
PE Code: 7179

0337839

Award Title: Track 2, GK-12: Building a Learning Community in Science and Mathematics through Educational Partnerships

PI Name: Kathleen Scott

Institution Name: Rutgers University New Brunswick

PE Code: 7179

0338193

Award Title: Graduate and Undergraduate Students Enhancing Science and Technology in k-12 schools

(II)

PI Name: Juan Lopez-Garriga

Institution Name: University of Puerto Rico Mayaguez

PE Code: 7179

B.3 OUTCOME GOAL for Research Infrastructure: “*Build the nation’s research capability through critical investments in advanced instrumentation, facilities, cyberinfrastructure and experimental tools.*”

Comments:

Not applicable to the GK-12 program.

PART C. OTHER TOPICS

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

The COV found a limited number of site visits. If possible, increase funding in this area. Share general findings from site visits in an appropriate manner at workshops.

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.

The COV team examined the Abt outline for the 10-year program evaluation. The approach is comprehensive in that it includes outcomes for fellows, K-12 teachers and students and institutions. In general the metrics are logical and the data sources appear to provide comparative information for both graduate students and K12 students. One of the research

questions seeks to gain an “Understanding of the responsibilities of STEM professionals for outreach and social awareness.” In addition to asking attitudinal questions, the survey should also ask about continued participation in K12 and public science education after completing the degree. Although the evaluation determines how the program affected the K12 participants and test scores, it should consider: identifying changes in a school district’s overall approach to math/science education as a result of the grant, e.g., district-wide workshops/training for all math/science teachers led by teachers from the program in a master teacher capacity; increased enrollment in high school math/science elective courses; corporate support for sustainability of programs; sustainable collaborations between universities and districts beyond the grant period; research findings published on the science involved in the project; and examples of transformations within a school or community as a result of the program.

C.3. Please identify agency-wide issues that should be addressed by NSF to help improve the program's performance.

NSF’s desire to promote internationalization is commendable, but this aspect of the program is difficult to implement because of the complexities related to international collaborations that require coordination with other units on campus such as study abroad (to assist with visas and insurance), identification of appropriate partners, and clear goals for the international dimension. The workshop on international is a good step to make this aspect of the program more appealing to a larger percentage of the awardees, but give more attention in the RFP to details related to internationalization that might encourage more proposal writers to include this feature.

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

None noted

C.5. NSF would appreciate your comments on how to improve the COV review process, format and report template.

Increased use of technology allows committee to get started early as long as you test the technology. On the CD provided in advance of the meeting, at least two of the hyperlinks either didn’t work or pointed to the wrong file.

The template was helpful, but it could be more user-friendly. The comments from staff were useful, but having the comments within the template became confusing when it was time to write our comments. There was no consistent use of comments sections for reviewers. The column on the right side is not adequate for the inclusion of comments because the carryover comments also affected the overall formatting. Perhaps the NSF comments could be placed in a format similar to track changes, that is, outside the margins of the form itself. To avoid confusion when incorporating comments from team members, the technical writer recommends using a blank template with only the headers and questions for the actual writing. It would also be acceptable to include the source.

It would be helpful to indicate exactly what additional information will be available on site and if possible to provide that to reviewers at their request prior to arrival. The Webinar was instructive, but the COV recommends providing the CD immediately after the Webinar. With the considerable volume of data the COV has to digest, making the CD available would give reviewers more preparation time prior to arrival. The staff provided exceptional response time in their ability to answer our questions during the review. The chair did an excellent job of keeping us on task and developing a system that enabled us to work efficiently and completely.

Problems: The review guidelines 07 file could not be opened. The file linked to the 06 file on the COV CD referred to a 07 program announcement so it may have actually been the 07 file. If this is the case, then the 06 file was not available. The CD containing files to the 2006 panel folder and the review guidelines were actually for 2005. The link to the 07 solicitation only went to the web and not to the copy on the CD.

SIGNATURE BLOCK:

For the 2008 NSF Graduate Teaching Fellows in K12 Education COV
Dr. James Renick
Chair

For the 2008 NSF Graduate Teaching Fellows in K12 Education COV
Dr Eric Sheppard
GK12 Committee Sub-Chair