

**MEMORANDUM**

**DATE:** June 20, 2006

**TO:** Bernice Anderson, Senior Program Director for Evaluation  
Directorate for Education and Human Resources

**FROM:** Joan Prival, EHR/DUE

**SUBJECT:** COV for Robert Noyce Scholarship Program  
COI and Diversity Memo

The Committee of Visitors report for the Robert Noyce Scholarship Program was approved at the EHR Advisory Committee meeting held at NSF on May 3 - 4, 2006. 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.

<b>Category of COV Membership</b>	<b>No. of COV Members in Category</b>
Member of EHR Advisory Committee.....	.... 1.....
Institution Type:	
<input type="checkbox"/> University.....	....3.....
<input type="checkbox"/> Four-year College.....	.....
<input type="checkbox"/> Two-year College.....	....1.....
<input type="checkbox"/> K-12 School or LEA.....	....1.....
<input type="checkbox"/> Industry.....	....1.....
<input type="checkbox"/> Federal Agency.....	.....
Location	
<input type="checkbox"/> East.....	....4.....
<input type="checkbox"/> Midwest/North .....	....1.....
<input type="checkbox"/> West.....	....1.....
<input type="checkbox"/> South.....	.....
Gender	
<input type="checkbox"/> Female.....	....2.....
<input type="checkbox"/> Male.....	....4.....
Race/Ethnicity	
<input type="checkbox"/> White.....	....5.....
<input type="checkbox"/> Black.....	....1.....
<input type="checkbox"/> Hispanic.....	.....
<input type="checkbox"/> Asian.....	.....
<input type="checkbox"/> Pacific Islander.....	.....

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.

## NOYCE SCHOLARSHIP PROGRAM - master file

### CORE QUESTIONS and REPORT TEMPLATE for FY 2005 NSF COMMITTEE OF VISITOR (COV) REVIEWS

**Guidance to NSF Staff:** This document includes the FY 2005 set of Core Questions and the COV Report Template for use by NSF staff when preparing and conducting COVs during FY 2005. 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 <http://www.inside.nsf.gov/od/gpra/>.

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.

**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. It is important to recognize that 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.*

**FY 2005 REPORT TEMPLATE FOR  
NSF COMMITTEES OF VISITORS (COVs)**

<b>Date of COV</b> May 26 - 27, 2005
<b>Program/Cluster:</b> Robert Noyce Scholarship Program
<b>Division:</b> DUE
<b>Directorate:</b> EHR
<b>Number of actions reviewed by COV<sup>1</sup>:</b> Awards: 12 Declinations: 15 Other:
<b>Total number of actions within Program/Cluster/Division during period being reviewed by COV<sup>2</sup>:</b> 106 Awards: 41 Declinations: 65 Other:
<p><b>Manner in which reviewed actions were selected:</b></p> <p>The COV chair was asked to select a digit that would be used in selecting the proposals based on the occurrence of the selected digit in the proposal number. He chose the number "6" and proposals were selected through a process of looking at the last digit of the proposal ID number, then the next to the last digit, then the third to the last digit until the desired number of proposals had been selected from the combined pool of awards and declinations. In addition, the highest rated proposal for each fiscal year was included if it had not already been selected through the random selection process. Approximately 25% of the total number of proposals received during the period under review were selected through this process.</p> <p>No additional jackets were requested during the COV meeting.</p>

**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 procedures.** Provide comments in the space below the question. Discuss areas of concern in the space provided.

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<sup>1</sup> To be provided by NSF staff.

<sup>2</sup> To be provided by NSF staff.

<b>QUALITY AND EFFECTIVENESS OF MERIT REVIEW PROCEDURES</b>	<b>YES, NO, DATA NOT AVAILABLE, or NOT APPLICABLE<sup>3</sup></b>
<p>1. Is the review mechanism appropriate? (panels, ad hoc reviews, site visits)  Comments: NSF Standard panel mechanisms works fine.  The first round of reviews was done by mail. Beginning in 2003, proposals were reviewed by a panel. The reviews follow the guidance in the solicitation.</p>	Yes
<p>2. Is the review process efficient and effective?  Comments: For efficiency, see our comments on question A1.7. Program officers managed the review process well. Program Officers asked questions of PI's who were in the process of being funded.</p>	Yes
<p>3. Are reviews consistent with priorities and criteria stated in the program's solicitations, announcements, and guidelines?  Comments: The review process followed the criteria; see A1.7.</p>	Yes
<p>4. Do the individual reviews (either mail or panel) provide sufficient information for the principal investigator(s) to understand the basis for the reviewer's recommendation?  Comments:  Individual reviews of proposals that were rejected sometimes did not have sufficient detail to understand the decision, but the summary generally dealt with the missing pieces. . See A5</p>	No
<p>5. Do the panel summaries provide sufficient information for the principal investigator(s) to understand the basis for the panel recommendation?  Comments:  In cases where individual reviews were insufficient, the program officer's summary or panel summary did provide sufficient information.</p>	Yes
<p>6. Is the documentation for recommendations complete, and does the program officer provide sufficient information and justification for her/his recommendation?  Comments: The documentation is sufficient.</p>	Yes
<p>7. Is the time to decision appropriate?  Comments: Turnaround time for proposals was very good, approximately 100 days dwell time. Between 94 and 100% of the proposals were processed within</p>	Yes

<sup>3</sup> If "Not Applicable" please explain why in the "Comments" section.

six months. Declines were processed very quickly.	
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8. Discuss any issues identified by the COV concerning the quality and effectiveness of the program's use of merit review procedures: See comments under A2.	
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**A.2 Questions concerning the implementation of the NSF Merit Review Criteria (intellectual merit and broader impacts) by reviewers and program officers.**

Provide comments in the space below the question. Discuss issues or concerns in the space provided.

IMPLEMENTATION OF NSF MERIT REVIEW CRITERIA	YES, NO, DATA NOT AVAILABLE, or NOT APPLICABLE <sup>4</sup>
<p>1. Have the individual reviews (either mail or panel) addressed both merit review criteria?</p> <p>Comments: In the current round, the form explicitly calls for comments on both review criteria and uniformly they are present. There is a range, however, in what is defined as "intellectual merit." For example, in one case intellectual merit was identified as the potential impact of teachers on their students, something hopefully not unique to any one proposal.</p> <p>Others seem more focused on what might be considered intellectual merit, including a commitment to develop "reflective teachers who are likely to sustain the intellectual development of students."</p> <p>Perhaps the concept of "broad impact" is easier to define, or more evident for the Noyce program. Most seem to cite the impact of future teachers on their students.</p>	YES
<p>2. Have the panel summaries addressed both merit review criteria?</p> <p>Comments: For the 2004 round, the criteria are explicit in every instance, and seem to have been built into the forms.</p> <p>In some earlier years the summaries occasionally do not include any specific mention of the criteria. If this was a problem, it clearly has been corrected.</p>	YES
<p>3. Have the <i>review analyses</i> (Form 7s) addressed both merit review criteria?</p> <p>Comments: If by address we mean have the criteria been noted, then the answer is yes. We found no instances where they were not mentioned. However, the commonest mention was for the Program Officer to say "I have considered the criteria in making my judgment." In relatively few instances there was a discussion of how the evaluator assessed compliance with the</p>	YES

<sup>4</sup> In "Not Applicable" please explain why in the "Comments" section.

<p>criteria and used the criteria.</p> <p>If this is an important issue for NSF, more needs to be said to demonstrate how the criteria were used rather than merely asserting that they were used.</p>	
<p>4. Discuss any issues the COV has identified with respect to implementation of NSF's merit review criteria.</p> <p>Issues have been addressed in the comments. In particular we note that program officers should indicate how the criteria were used rather than merely asserting that they were used.</p> <p>Also, some definition of the meaning of "intellectual merit" as it might relate to this program is in order. It seems that reviewers had different views of what the concept might mean.</p>	

**A.3 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 APPLICABLE <sup>5</sup>
<p>1. Did the program make use of an adequate number of reviewers?  Comments: The reviewers did a through review of programs, and did so in a reasonable time, so we conclude that there were and adequate number of reviewers used in the process.</p>	YES
<p>2. Did the program make use of reviewers having appropriate expertise and/or qualifications?  Comments: A review of credentials shows that reviewers had appropriate academic credentials and experiences that would allow them to make sound decisions.</p>	YES
<p>3. Did the program make appropriate use of reviewers to reflect balance among characteristics such as geography, type of institution, and underrepresented groups?  Comments: The data provided suggest that, overall, balance in these categories is appropriate. We would suggest including more individuals from Masters and Baccalaureate level institutions since they are more likely to be familiar with teacher education programs and perhaps better able to judge the quality of proposals.</p>	YES
<p>4. Did the program recognize and resolve conflicts of interest when appropriate?  Comments: We saw no evidence of unresolved conflicts of interest.</p>	YES
<p>5. Discuss any issues the COV has identified relevant to selection of reviewers.    The panel was curious about the seeming narrowness of reviewer selection--mostly they are traditionally-educated scientists and engineers. Why are there so few industrial representatives on the</p>	

<sup>5</sup> If “Not Applicable” please explain why in the “Comments” section.



<p>review panels? Except for that, there is a reasonable balance among reviewers from various segments. What is the NSF standard for what kind of people should be on panels? Scientists and engineers? How about masters degree recipients? How about HR people who understand issues around recruitment and tracking of teachers? How about community college and K-12 faculty and administrators? The program should consider using more business representatives and perhaps students now teaching because of NOYCE support on future panels.</p>	
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**A.4 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.

<b>RESULTING PORTFOLIO OF AWARDS</b>	<b>APPROPRIATE, NOT APPROPRIATE<sup>6</sup>, OR DATA NOT AVAILABLE</b>
<p>1. Overall quality of the research and/or education projects supported by the program.</p> <p>1. Comments: : The projects certainly meet the goals of the Noyce program; it may be too soon to really know whether their success in achieving these goals is genuine. The choices seem good. In the first year, where the NSF staff had relatively little time to publicize the program, was a bit weaker.</p>	Appropriate
<p>2. Are awards appropriate in size and duration for the scope of the projects?</p> <p>Comments: : Yes. However, we note that the real cost of the program is substantially greater than the funds awarded by NSF. Local institutions are absorbing the remaining costs.</p> <p>Similarly, it is important that this program be able to continue. Individual institutions need to be able to offer something like this on an ongoing basis, not just for a three- or four-year interval.</p> <p>It is really a little early to answer a number of these questions. We need a couple more years of data.</p> <p>There is a question of renewals--after these initial rounds, should institutions be allowed to apply again? Or should there be a limit?</p>	Appropriate

<sup>6</sup> If “Not Appropriate” please explain why in the “Comments” section.

<p>It would be good to spread these around and give more institutions a chance. Perhaps the bar becomes higher on re-application.</p>	
<p>3. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> <li>• High risk projects?</li> </ul> <p>Comments:</p> <p>We didn't see many applications that we would consider high-risk, such as tribal colleges, HBCU, etc. It would be worth encouraging and supporting such applications, but we aren't sure how to do it.</p>	<p>Appropriate</p>
<p>4. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> <li>• Multidisciplinary projects?</li> </ul> <p>Comments:</p> <p>This program is inherently interdisciplinary in that faculty from several science departments and from the school of education need to collaborate (along with teachers in the K-12 sector and other stakeholders) if a project is to be even modestly successful.</p>	<p>Appropriate</p>
<p>5. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> <li>• Innovative projects?</li> </ul> <p>Comments: Seems to be ok. Some room for innovation exists in this program, but since this is primarily a scholarships activity, the COV did not expect a great deal of innovation.</p>	<p>Appropriate</p>
<p>6. Does the program portfolio have an appropriate balance of: funding for centers, groups and awards to individuals?</p> <p>Comments: This scholarships program is implemented through awards to groups. There are no awards to centers or individuals, as it should be. A PI meeting is recommended to encourage knowledge and idea sharing and exchange and to promote collaboration among the PI's.</p>	<p>Appropriate</p>
<p>7. Does the program portfolio have an appropriate balance of: awards to new investigators?</p> <p>Comments:</p> <p>It was recognized that many of the PI's have prior relationships with NSF and have significant experience with NSF proposal submission. There was concern that more outreach and planned marketing of the program is needed.</p>	<p>Appropriate</p>
<p>8. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> <li>• Geographical distribution of Principal Investigators?</li> </ul> <p>Comments:</p>	<p>NO</p>

<p>There needs to be better representation in the northwestern, upper Midwest and Rocky mountain states.</p>	
<p>9. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> <li>• Institutional types?</li> </ul> <p>Comments: : There could be better representation of HBCU's and Native American and Hispanic serving institutions and community colleges</p>	NO
<p>10. Does the program portfolio have an appropriate balance of:</p> <ul style="list-style-type: none"> <li>• Projects that integrate research and education?</li> </ul> <p>Comments:  This program is not appropriate for integration of research and education.</p>	Not Applicable
<p>11. Does the program portfolio have an appropriate balance:</p> <ul style="list-style-type: none"> <li>• Across disciplines and subdisciplines of the activity and of emerging opportunities?</li> </ul> <p>Comments: This program does not allow for this type of activity.</p>	Not Applicable
<p>12. Does the program portfolio have appropriate participation of underrepresented groups?</p> <p>Comments: : The data presented to the COV seems acceptable, however, more data needs to be collected on the entire population. (See Question B1).</p>	YES
<p>13. Is the program relevant to national priorities, agency mission, relevant fields and other customer needs? Include citations of relevant external reports.</p> <p>Comments: The Noyce scholarship program is relevant to the national needs to prepare mathematics and science teachers in the K-12 school systems across the country. The funded proposals demonstrated the need in their local area with statistics about the percent of less than certified math and science teachers currently teaching in their schools. As an example, one report reported that 30% of the current secondary science teachers in Texas were less than fully certified. Customer needs were addressed in several reports, especially in the programs promoting alternate teacher certification. One report stated that 7 of the 11 scholarship recipients from industry "no longer found their jobs fulfilling". The program is relevant to the agency mission in that it "enhances the delivery of mathematics and science education in the United States".</p>	YES

14. Discuss any concerns relevant to the quality of the projects or the balance of the portfolio.

Quality of the projects has been addressed. NSF now needs to look at the quality of the teachers in the program. This may be answered in the monitoring and evaluation portion. We have concerns relevant to the quality - it is extremely important to implement data collection program.

**A.5 Management of the program under review.** Please comment on:

1. Management of the program.

Comments:

The management of the program, in terms of selecting grantees, issuing calls for proposals, encouraging participation, and so on is, in general, quite good. The COV's principal concern is issues of evaluation. A contract has been issued to Quantum Research Corporation (QRC) to move the evaluation along. We see a couple of barriers ahead which could prevent the kind of evaluation that the NSF, and this COV, would like.

First is the collection of quantitative information. There are a lot of items in the description/work statement that are asked of PI's who, it should be recalled, receive relatively little reward for their efforts. It may be considerably easier to obtain these data for future Noyce Scholarship recipients than it would be to obtain these data for past students. QRC and the PI's are going to have to do the best job that they can, but would be helped if the questions on the first page on tab 8 of our briefing book were sharpened a little bit and their connections to the data-gathering enterprise became more focused.

Second is the collection of qualitative information. For example, question 2 asks "to what extent are teachers who are discipline majors more effective teachers..." Effectively, rather than superficially, answering this question is going to require an effort considerably greater in scope than the proposed \$0.5 million contract to QRC. The COV admires the NSF for starting to answer these questions but remains puzzled regarding how the proposed evaluation mechanism is really going to dig into the deep issues.

2. Responsiveness of the program to emerging research and education opportunities.

Comments: This program takes into account the existing needs of K-12 math and science teachers and is, within the limits imposed by Congressional legislation, consistent with what we know about the needs for teacher preparation.

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

Comments:

This program is guided by its enabling legislation and thus it operates within fairly tight guidelines. Something that would help program planning and perhaps guide the evaluation effort described in question A.5.1 above would be to have NSF staff continue to prioritize the goals of the program so

that the limited resources which are put into evaluation can provide some deep answers to the really important questions.

3. Additional concerns relevant to the management of the program.

Marketing the program: We are unsure about how many people know about the Noyce Scholarships program. There is a need to design marketing tactics, if not at the onset of the program, at least now, that will allow the information to reach as many people as possible. . We're unsure about how you let people know about the program. Yes, information about the program is available on the NSF website, but getting the right people to look at that website is not an easy task, particularly given the limited scope of NSF staff travel.

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

NSF investments produce results that appear over time. The answers to the first three (People, Ideas and Tools) questions in this section are to be based on the COV's study of award results, which are direct and indirect accomplishments of projects supported by the program. These projects may be currently active or closed out during the previous three fiscal years. The COV review may also 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. Incremental progress made on results reported in prior fiscal years may also be considered.

The following questions are developed using the NSF outcome goals in the NSF Strategic Plan. The COV should look carefully at and comment on (1) noteworthy achievements of the year based on NSF awards; (2) the ways in which funded projects have collectively affected progress toward NSF's mission and strategic outcomes; and (3) expectations for future performance based on the current set of awards. NSF asks the COV to provide comments on the degree to which past investments in research and education have contributed to NSF's progress towards its annual strategic outcome goals and to its mission:

- To promote the progress of science.
- To advance national health, prosperity, and welfare.
- To secure the national defense.
- And for other purposes.

Excellence in managing NSF underpins all of the agency's activities. For the response to the Outcome Goal for Organizational Excellence, the COV should comment, where appropriate, on NSF providing an agile, innovative organization. Critical indicators in this area include (1) operation of a credible, efficient merit review system; (2) utilizing and sustaining broad access to new and emerging technologies for business application; (3) developing a diverse, capable, motivated staff that operates with efficiency and integrity; and (4) developing and using performance assessment tools and measures to provide an environment of continuous improvement in NSF's intellectual investments as well as its management effectiveness.

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

**B.1 OUTCOME GOAL for PEOPLE: Developing "a diverse, competitive and globally engaged workforce of scientists, engineers, technologists and well-prepared citizens."**

Comments:

The NSF has determined, on the basis of 23 annual reports received as of this analysis, that in the first two years of the program (2002 and 2003), 426 individuals have received support under this scholarship program. These recipients are:

- 67 % female
- 56 % post-baccalaureate recipients (the remaining 44 % are undergraduate scholarship recipients)

- 50 % representing minority populations (the percentages for individual programs range from 17 % to 100%).

25 Noyce scholars are currently teaching in school districts, and all 25 are teaching in high need school districts. High need districts are defined in terms of the RFP.

**B.2 OUTCOME GOAL for IDEAS: Enabling “discovery across the frontier of science and engineering, connected to learning, innovation, and service to society.”**

Comments:

This is an implementation program so that its primary emphasis is not the development of ideas.

**B.3 OUTCOME GOAL for TOOLS: Providing “broadly accessible, state-of-the-art S&E facilities, tools and other infrastructure that enable discovery, learning and innovation.”**

Comments This is one of several programs which aim to recruit more students into teaching. It might be possible to develop a tool that would evaluate the effectiveness of all of these programs. However, the development of such a tool seems to be beyond the scope of the Noyce program.

**B.4 OUTCOME GOAL for ORGANIZATIONAL EXCELLENCE: Providing “an agile, innovative organization that fulfills its mission through leadership in state-of-the-art business practices.”**

COMMENTS:

This outcome goal is not really applicable to this program. We have some comments on state of the art business practices in section C.

## **PART C. OTHER TOPICS**

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

This program needs to be marketed more vigorously. Some of the marketing occurs at the individual grantee organizations. We examined the recruiting brochures and found that the quality varied rather widely, and that the brochures did not seem to directly address the question that undergraduates would ask: "Why should I become a teacher? What's in it for me?" A coherent, nationally and locally marketed sense of this purpose could make a great deal of difference. It might be worth engaging a marketing firm or school to coordinate national marketing.

We are concerned that most of the institutions which are hosts for this program are old friends of the NSF. While continuity is good, we'd like to move beyond that. While we recognize that NSF officials do present this program at some national meetings, these presentations are usually part of a more blanket presentation that covers many of the different NSF programs. We would suggest that announcements of this program appear in newsletters of organizations that appeal to the deans of schools of education, deans of arts and sciences, and the like.

### **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 spent considerable time discussing the evaluation of this program, both at the national level and at the project level. At this point the available information is limited to the rather fragmentary data that is provided in the PI's annual reports. Particularly for the FY02 proposers, where the Noyce program is part of a much larger project, the reports are not what is needed in order to evaluate success comprehensively.

The goals of this program are really rather unlike the goals of most of the other NSF programs with which we are familiar. There is in the enabling legislation, a commitment to actually producing something -- an increase in the number of K-12 STEM teachers produced in a particular way.\* But the current evaluation mechanism does not really permit NSF managers to determine in more than a superficial way whether this goal is being met. It is possible to count the number of graduates from the program, but following up whether they actually stay in teaching and are more effective teachers than others is a much bigger task.

The monitoring project to gather quantitative data, described in the RFP and response from the Quantum Research Corporation (QRC), is a significant step forward, but even here we have some recommendations for the future. Data gathering should be seen by the PI's as an important job for them from the beginning of their projects. It does not, for example, make sense for them to try to reconstruct how many preservice high school science teachers graduated from their university four years ago, when they



submit a final project report. They, or someone they pay, should be gathering these data on an ongoing basis.

While we were impressed with the kinds of questions being asked of the anticipated evaluation project, where the committee's knowledge at the time of its meeting was that a contract is likely to be awarded in June 2005, we do not know any of the details about how the selected contractor is actually going to carry out the work. With the qualitative evaluation efforts as well as the quantitative evaluation efforts, there is the potential that there will be considerably more asked of the local PI's, who receive relatively little compensation for their efforts.

Sustainability: We have already commented (see question A.4.2, A.4.7, A.4.8, and A.4.9) regarding a few concerns. Are existing Noyce scholarship recipients eligible to re-apply? How are new institutions encouraged to find out about the program and apply?

\* NOTE: The enabling legislation is part of Public Law 107-368, passed on Dec. 19., 2002, which authorizes the NSF more generally. There are broad general goals described in Section 3 (2) clauses A and B. The Noyce program is described in more detail in section 10. There is a specific goal to encourage "top college juniors and seniors majoring , mathematics, science, and engineering at the grantee's institution to become mathematics and science teachers..." (section 10 (a) (B), 116 Stat. 3049).

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

Two of the issues that we have commented extensively about qualify as agency-wide issues, or at least are issues that cross-cut through a variety of EHR programs.

(1) Evaluation of programs that promote teacher recruitment: There are a variety of programs that the NSF is, or has been, associated with in order to expand the pool of recruited teachers. Many of the questions we are asking (see sections A.5.1, C2. and a brief mention in B.3) are questions that are probably relevant to other programs, at least ones that exist within the EHR Directorate.

(2) Marketing of the program (described in sections A.5.3 and C.1) While the NSF website certainly makes information about this and other programs available to anyone who visits it, there is still a need to encourage more people to actually go visit it and become involved in the NSF process by becoming proposal reviewers, unsuccessful proposers, and, ultimately, successful proposers.

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

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

**SIGNATURE BLOCK:**

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For the Robert Noyce Scholarship Program COV

Harry L. Shipman  
Chair