CORE QUESTIONS and REPORT TEMPLATE
for
FY 2004 NSF COMMITTEE OF VISITOR (COV) REVIEWS

Guidance to NSF Staff: This document includes the FY 2004 set of Core Questions and the COV Report Template for use by NSF staff when preparing and conducting COVs during FY 2004. 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 outputs and outcomes 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 in the form of outputs and outcomes 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 2004 REPORT TEMPLATE FOR NSF COMMITTEES OF VISITORS (COVs)

Date of COV:	May 3-5, 2004
Program/Cluster:	Centers for Learning and Teaching (CLT)
Division:	Elementary, Secondary, and Informal Education (ESIE)
Directorate:	Education and Human Resources (EHR)
Number of actions reviewed by COV[1]:	Awards: 3 Declinations: 9 Other: 2
Total number of actions within Program/Cluster/Division during period being reviewed by COV[2]:	Awards: 27 Declinations: 116 Other: 2
Manner in which reviewed actions were selected: The actions selected for review were based on a random sample (all proposals with numbers ending in 6). However, all proposals were available for review and, in fact, several were requested by, and provided to, the Committee.	

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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. Please do not take time to answer questions if they do not apply to the program.

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.

QUALITY AND EFFECTIVENESS OF MERIT REVIEW PROCEDURES	YES, NO, DATA NOT AVAILABLE, or NOT APPLICABLE
Is the review mechanism appropriate? (panels, ad hoc reviews, site visits) **Comments:** · Formation of the Blue Ribbon Panel increases the validity for assuring fairness and equity. · Two panels with standard questions, iterative process with proposers addressing the concerns of the proposals works well. · Reverse site visits are a strength. · Reviews shows great deal of effort to bring in people with a variety of expertise and diversity where it can be found. · Experience level and dedication of Program Officers is impressive. · Insufficient evidence in the jackets to see how what happens at the Blue Ribbon Panel factors in to the decision-making. · Provide instructions to reviewers on the definition of categories "good" etc. · *Recommendation:* Summary of answers to questions of Blue Ribbon Panel should be made by the Program Officer and returned to the proposer. Annual reports should then be checked to see how these have been implemented.	YES
Is the review process efficient and effective? **Comments:** · The follow-up questions, reverse site visits, etc. give adequate data on which to base the funding. Questions probe the proposers, as well as raise issues to help focus and modify projects constructively to ensure the efficacy of the process. · In order to evaluate the efficiency and effectiveness more completely, we need to be able to examine all proposals that went forward to the Blue Ribbon Panel for further evaluation, and details on which were supported and which were declined. · *Data recommendation*: When proposals move to Blue Ribbon Panel, and are then rejected, it would be useful to record the rationale in detail.	YES See notes
Are reviews consistent with priorities and criteria stated in the program's solicitations, announcements, and guidelines? **Comments:** · Evaluation and institutionalization plans are two aspects that seem to be less	YES

well addressed in a number of proposals. · Different proposals address different program criteria and priorities, given the length of the proposals. There is an implicit hierarchy in the reviews, with institutionalization and evaluation playing less of a role in the initial panel review. This is not a bad thing but an observation regarding the weighting that panel reviews seem to portray. For proposals that are above threshold there is evidence that additional detail on institutionalization and evaluation is sought and examined when making the final recommendations. At the time of mid-award review special attention should be given to institutionalization.	
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:**	YES
Do the panel summaries provide sufficient information for the Principal Investigator(s) to understand the basis for the panel recommendation? **Comments:**	YES
Is the documentation for recommendations complete, and does the Program Officer provide sufficient information and justification for her/his recommendation? **Comments:** · Program Officers do a superb job with documentation in general. · We noticed that in some cases, a few reports were not signed, and this may require vigilance.	YES
Is the time to decision appropriate? **Comments:**	YES
Discuss issues identified by the COV concerning the quality and effectiveness of the program's use of merit review procedures: · Great job of merit review. · One of the strengths of this program is that the panels are sufficiently large and have multiple and diverse perspectives that are critical to the high quality of the merit review process in this program.	

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

Have the individual reviews (either mail or panel) addressed whether the proposal contributes to both merit review criteria? **<u>Comments:</u>** · While intellectual merit is always addressed, the broader impact criterion is not addressed consistently across reviewers. This might require special attention.	NO

Have the panel summary reviews addressed whether the proposal contributes to both merit review criteria? **Comments:** · Panel summaries were uneven. This may indicate that there were no discussions on it.	NO
Have the *review analyses* (Form 7s) addressed whether the proposal contributes to both merit review criteria? **Comments:**	YES
Discuss any issues or concerns the COV has identified with respect to NSF's merit review system. **Comments:** · It is surprising that there was no consistent addressing of both the criteria even in 2003. · Since the broader impact criterion seems to be hard for proposers to do, providing some examples may be useful. · When reviewers are asked to review the proposals, they need to be provided with the definitions of the merit Review Criteria from the RFP and reminded to comment on how these proposals specifically address broader impact. This should be emphasized.	

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
Did the program make use of an adequate number of reviewers for a balanced review? **Comments:**	YES
Did the program make use of reviewers having appropriate expertise and/or qualifications? **Comments:**	YES
Did the program make appropriate use of reviewers to reflect balance among characteristics such as geography, type of institution, and underrepresented groups?	YES

Comments:	
Did the program recognize and resolve conflicts of interest when appropriate? **Comments:**	YES

Discuss any concerns identified that are relevant to selection of reviewers.

- Reviewers seem to be well selected, from diverse constituencies and sectors, and with the range of expertise required.

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.

RESULTING PORTFOLIO OF AWARDS	APPROPRIATE, NOT APPROPRIATE, OR DATA NOT AVAILABLE
Overall quality of the research and/or education projects supported by the program. **Comments:** · Program is too young to assess if the overall objectives of the program are being achieved. This, however, provides an opportunity to think about cross-center networking · The quality looks high in terms of the plans for the current projects. However, it is really too early to tell to what degree the plan will be realized. What is unclear is what the portfolio as a whole will be contributing to a knowledge base on teaching and learning nationwide. It is unclear whether the program as a whole will produce a synergistic outcome regarding learning and teaching, leadership for improving mathematics and science learning, and high quality teachers. There seems not to be any mechanism for synthesis across the different Centers. Efforts to synthesize also appear to be lacking within some of the Centers. · In general there is the issue of synthesis across the Centers that can articulate the new paradigm that is emerging from the research, development, and educational models that are funded under the CLT program. Questions that a synthesis needs to answer: Ø What is working to develop strong effective leaders? Ø What are the attributes or mechanisms effective for developing high quality teachers in math and science and what have we learned about how to do that? Ø What kind of research is addressing important issues for practice and how are the results compiled in ways that will have an impact on practice? Centers efforts do provide strong potential for addressing these questions. An example would be the Physics Education Group led by Lillian McDermott and what it has done for physics education in K-12.	DATA NOT AVAILABLE because the program is in its early days.
Are awards appropriate in size and duration for the scope of the projects? **Comments:** · It should be recognized, however, for the size of the award, these projects are being asked to do a tremendous amount of work.	YES

Does the program portfolio have an appropriate balance of: · **High Risk Proposals?** **Comments:** · A certain degree of risk is embedded in the program concept itself. As noted below, none of the Centers take great risks on a totally new idea.	YES
Does the program portfolio have an appropriate balance of: · **Multidisciplinary Proposals?** **Comments:**	YES
Does the program portfolio have an appropriate balance of: · **Innovative Proposals?** **Comments:** · We believe that the balance needs to shift in the direction of new and innovative OVERALL Center concepts. · Each Center does have elements that are innovative; however, there are no totally new ideas or thrusts. This is the reason for the "NO" in the adjoining column.	NO Please see notes
Does the program portfolio have an appropriate balance of: · **Funding for centers, groups and awards to individuals?** **Comments:**	Not applicable
Does the program portfolio have an appropriate balance of: · **Awards to new investigators?** **Comments:**	Not applicable
Does the program portfolio have an appropriate balance of: · **Geographical distribution of Principal Investigators?** **Comments:**	YES
Does the program portfolio have an appropriate balance of: · **Institutional types?** **Comments:** · A real effort has been made to involve institutions that have traditionally not been involved in this type of research.	YES

· Very few community colleges are in the group. · Half of all future teachers go to community colleges, and over 60% of minority students begin their S&E education at community colleges. It might be good to pay special attention to the community college population, and ensure true partnership in their participation.	
Does the program portfolio have an appropriate balance of: · **Projects that integrate research and education?** **Comments:**	YES
Does the program portfolio have an appropriate balance: · **Across disciplines and subdisciplines of the activity and of emerging opportunities?** **Comments:** · Technology education, IT and engineering are underrepresented.	NO
Does the program portfolio have appropriate participation of underrepresented groups? **Comments:** · The program should seek ways to build true partnerships with minority-serving institutions and community colleges. The solicitation might suggest partnering with these, many of which are involved in several partnerships like AGEP, TCUP, and LSAMP to involve underrepresented groups.	NO
Is the program relevant to national priorities, agency mission, relevant fields and other customer needs? Include citations of relevant external reports. **Comments:**	YES

Discuss any concerns identified that are relevant to the quality of the projects or the balance of the portfolio.

How do you bring it all together to make sense?

- We recommend that the program not go for the same kind of evaluation. Get something more synthetic.

  Synthesis should be used to self-correct and provide a conceptual framework for science and mathematics out of the work of these Centers. At the school district level, they've learned that you have to get very close to the classroom and work with teachers. How does the Center pre-service piece fit with this knowledge? Can we synthesize the research coming out of the Centers to address the issues of concern to practice through a conceptual framework for science and mathematics that is based Center-based research in ways that will impact instruction, assessment, and student learning?

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

Management of the program.

Comments: VERY GOOD.

- There is evidence that the Program Officers and staff put great effort into the management.

Responsiveness of the program to emerging research and education trends.

Comments:

- Centers are keeping up with trends and contributing to the future, but they need to probe new areas beyond the edge of what we know.

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

Comments:

- Program Officers do a gap analysis and this contributes to revisions and development of new solicitations.
- Program Officers have been looking at what gets funded in each round and then deciding on priorities for next competition based on gaps that are noticed through the review process.
- Goal of integrating research and education.
- Blue ribbon panel.
- Evaluation can inform how different pieces of an educational system might interrelate and produce desired outcomes. A large conceptual model might enable them to locate the different Centers in their niches with respect to emerging and well-developed theories and practice of teaching and learning.
- This is a good time to re-think these issues as Centers are coming up for approval.
- Undertake synthesis study, sketch out a conceptual framework or logic model to guide design of future solicitations.
- Masters-level programs might provide a good venue to do some of the synthesis as research.

Discuss any concerns identified that are relevant to the management of the program.

- The strength of the core team of Program Managers is evident. This leads to consistency and continuity of the program. The continuity of the key staff is a major plus for this program. This consistency is important to maintain even in the face of new, rotating Program Officers.
- Criteria and goals of the higher education Centers seem to significantly differ from the others.
  - Ø Do the higher education centers make sense?
  - Ø How is the information and knowledge accumulated to be shared with other higher education institutions? How do higher education Centers and the other Centers interact with each other?

PART B. RESULTS : OUTPUTS AND OUTCOMES OF NSF INVESTMENTS

NSF investments produce results that appear over time. The answers to the first three (People, Ideas and Too 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 a advances that have developed since the previous COV review and are demonstrably linked to NSF investmen 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 sho look carefully at and comment on (1) noteworthy achievements of the year based on NSF awards; (2) the ways which funded projects have collectively affected progress toward NSF's mission and strategic outcomes; and (expectations for future performance based on the current set of awards. NSF asks the COV to provide comme on the degree to which past investments in research and education have contributed to NSF's progress toward 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 fo Organizational Excellence, the COV should comment, where appropriate, on NSF providing an agile, innovativ 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) developir 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 <u>OUTCOME GOAL for PEOPLE</u>: Developing "a diverse, competitive and globally engaged workforce of scientists, engineers, technologists and well-prepared citizens."

<u>Comments:</u>

- The development of people is a central goal of the CLT program. To that end each of the CLTs is developing graduate programs to prepare individuals to work in STEM undergraduate programs and with teacher candidates and inservice teachers. These three components are present in all the funded proposals. To date, 166 doctoral students are enrolled in CLT research programs and 13 postdoctoral students have been appointed. Of the postdoctoral students, 12 were EuroAmerican and 1 Multiethnic. Of the 166 doctoral students, 5% are African American, 83% European American, 10% Asian, 2% Multiethnic, and 1% Native American. Additional details on numbers and diversity of the participants in various programs for educational practitioners, including teacher candidates, are found in the CLT Online Monitoring System for 2002-2003 prepared by WESTAT. This report includes a breakdown by

area of study. It is really too early to include an assessment of outcome and impact. Global issues are being addressed in terms of the DFG/NSF conferences (#0308371, #0334505) and there have been two meetings of that group. Two of the CLTs have international partners (#0334199, #0119787). The Chinese Academy of Science has signed an agreement to establish a science education cooperative between the Virtual Science Museums of China, and Texas A & M University's College of Education and Human Development, College of Science, and NSF-funded ITS (#0083336).

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

Comments:

- Presentations at conferences and meetings are becoming more ubiquitous across the CLTs as they begin to have outcomes of their research in science and mathematics teaching and learning. This is also the case for publications.

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:

- CLT-Net (#0314484) is providing a flexible, synchronous and ashynchronous web-based environment for communication among the various individuals involved in the Center. TELS (#0334199) is building tools for modeling. Texas A & M (#0083336) is building visualization tools.

- The WESTAT report includes short descriptions of examples of courses that have been developed under the auspices of various CLTs.

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: Cross-institutional course offerings have resulted in the creation of business and accreditation policies new to the university world. This is common to the CLTs. They are therefore providing leadership in cross-institutional collaboration to enrich program and educational opportunities for all students. There is also cross-collaboration with K-12 systems that requires the invention of similar policies. Inter-institutional research projects requiring IRB (Human Subjects) collaborative grant applications, etc., also require new degrees of cooperation across business and grants and contracts offices.

PART C. OTHER TOPICS

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

Need for improvement:

- Intentionality - models and research. Across the four solicitations, the elements have remained consistent, but the definitions have been substantially different. What seems to be missing is intentionality on the part of the program in setting the agenda. Each Center needs to be identified as

an expert in a particular theme.

- Synthesis. The field needs outcomes from the research that contribute to best practices, i.e., useful applications for the field. A synthesis needs to speak to features of programs that are effective in producing leaders, highly qualified practitioners, assessments that are helpful to improving instruction, and models of informal science learning.
- Centers need to show that they recognize bandwidth issues and need for studies that examine the same issue in different contexts and with diverse populations. Need to understand the conditions under which something has worked or not. Perhaps a CLT on context of change - a Center at the "hub" that would help the CLTs pull together around context issues and what goes across and what changes.
- Gaps might be identified not by looking at grade levels and topics but by the needs of the field, questions driven by those people on the ground in districts and classrooms.
- Organizing framework for the Centers - a tool for synthesis or an outgrowth of synthesis.
- Increase "diversity" among graduate fellows and faculty. Develop innovative mechanisms to recruit students and faculty from African American, Latino, and Native American cultural backgrounds.
- When you look at participants (WESTAT report) it is difficult to see where the content people are. The panel was concerned over the small number of disciplinary faculty participating in the Centers, as reported on page 22 of the WESTAT report.

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.

- Regarding the development of highly qualified mathematics and science teachers: To what degree is this goal being met and what's the evidence for that?
- Where is the effort to increase participation of underrepresented groups?

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

- Differences, similarities, and coordination of the agendas of the CLT, Science of Learning Centers, Math and Science Partnership, and Interagency Education Research Initiative efforts. How do they inform one another? How are these programs working together, interfacing to inform infrastructure? How are they informing the effort to be excellent in science on a national level and to produce excellent K-12 education?
- Coordination of the information coming from different programs such as CLT-NET, MSP-NET, etc. They are working on similar problems. It would be nice to easily access related information.

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

Response to Programmatic Questions:

1. **Critical factors for decisions to renew existing centers versus funding new centers?**
   a. Renewal should build on the results of the initial funding. What evidence is there that there is a research theme; individual research products; increased numbers of doctoral students; scientists and educators working together; work with educational practitioners on issues of learning, teaching, and assessment; and increased leadership in science and mathematics teaching and learning? What is the contribution of the research to advancing the knowledge base in science

and mathematics education? What is the contribution of the research to practices in science and mathematics education in school districts? What is the contribution of practice to the research agenda? Does the continuation proposal build on what has been learned in the initial funding of the Center? Is there evidence that the Center has learned from its initial round of funding about the fundamental aspects of the problems it is focused on? For example, if a goal of the Center was not begun or changed - what lessons were learned and what is the Center planning to do about it.

b. Is the Center making efforts to move beyond the specific contexts in which the research has occurred? Much of the findings have/will come out of a specific context or set of contexts (i.e., it is situated). What recognition is there of the need to research issues of adaptation to other contexts?

c. Is the focus of the Center closely aligned to a national need and is there evidence of contribution toward meeting the need? This should be a primary issue in deciding among renewal versus new center.

d. Is there evidence that there is a Center as opposed to individual projects operating in parallel? Are there synergies among the various components of the CLT? For example, are the components integrated in a functional manner so that the pieces are working together to contribute to infrastructure development and achieve the goals of the CLT and the program?

e. Is there progress toward institutionalization of the Center?

2. What are the gaps in the CLT program portfolios? What critical national issues related to STEM are not being addressed by the center program?

a. Quality of assessments of science. Possibly a means of implementing the NRC committee agenda.

b. Need for integration skills - display of understanding; need for integration of reading, writing, mathematics, and science literacies.

c. STEM - technology is being used in some of the Centers, but ITEA standards are not much addressed in the present set of Centers. Issues of design - pre-engineering. Infusion of design principles hooked up with all disciplines not just science, e.g., systems thinking.

d. Take a fresh look at how to think about national needs. (Thinking about different dimensions of how to slice up the world.) For example, need to increase diversity at all levels - where are we going to find diverse leadership. The institutions that can really respond to this need are not involved, for the most part, in this program (e.g., HBCUs are not coming to the table to plan these Centers as equal partners; same for community colleges). Another needs theme might be alignment (of curriculum, instruction, assessment, standards); another might be research-based policy for enhancing the national profile in STEM; another might be developmental spectrum of mathematics, science concepts and operationalizing standards-based reform. Need for a K-12 continuum of learning in mathematics, science that is research based. Developmentally appropriate manner - research base to make decisions about this is far short of what it needs to be.

e. Finally, there is a clear need for a Center on CLT that would engage in ongoing synthesis and integration activities across the various CLTs, facilitate synergistic interactions across CLTs, and coordinate and develop new models of bringing research-based findings to practice and bringing insights from practice to the research on learning, instruction, and assessment and to the preparation of teachers, administrators, etc. Thus, such a Center would in effect be developing new models of dissemination and engage in research on the impact of these new models.

3. What evaluation issues should be paramount in planning for the renewal of the contracts for the program evaluation?

Contract for a synthesis evaluation that examines issues of coordination, complementarity, impact,

outcome, context within and across centers, etc. McLaughlin has done several such studies. Questions that need to be addressed include how the outcomes of the CLTs are contributing to infrastructure development (leadership, teachers, research).

There appears to be huge overlap in the information included in the ABT and WESTAT evaluations, at the same time it is difficult to map ABT numbers to WESTAT's numbers. Why not have an NSF staff person collate the numbers that the CLT members are inputting? However, attention still needs to be paid to the specific questions, making it clear what data are being asked for. The present quantitative data are open to many interpretations so what is needed is a clear set of questions that need to be answered. And, if there are multiple ways to answer the question, this needs to be clearly articulated and addressed in the tables and in how the data are collected and summarized. For example, the number of participants in courses is collected by taking enrollments in each course and cumulating. This does not address number of unique participants in courses. The value of the SRI information is not entirely clear. They are interesting descriptions but it is not clear that it is worth the cost and the time of the CLT members. It might be better to have the Program Officers themselves visit the sites.

In addition to "third party" evaluation, the aims and goals of evaluation conducted within each CLT are sometimes inconsistent. Formative evaluation needs the evaluators and the members of the CLT to collaborate on the most informative questions to be asked and responses to the information obtained.

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

- Documentation sent lacked annual reports. Inconsistency in materials received was problematic.
- Would have been helpful to have more uniform summaries of the CLTs that have been funded included in the materials sent to the COV.
- The COV Template includes questions that are not appropriate for review of this class of Centers and does not include questions that are more central to education and these centers.

SIGNATURE BLOCK:

Indira Nair
Chair, Centers for Learning and Teaching (CLT) Committee of Visitors,

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[1] To be provided by NSF staff.

[2] To be provided by NSF staff.