SUPPORTING STATEMENT B

B.1. Respondent Universe and Sampling Methods

Respondent Universe

Since 2003, NSF has made nearly 200 awards to universities, school districts, and nonprofit organizations across the United States to implement different types of ITEST projects. The majority of the awards have been made to projects directly providing experiences to students and teachers, but awards have also been made to a variety of other projects including technical assistance providers, research on STEM education issues, conferences, and workshops. In the most recent solicitation for cohort nine, NSF is funding three categories of projects: strategies, scale-up, and research. The "strategies" category, which includes the majority of projects, involves projects that focus directly on teachers and students. Existing projects that fit ITEST program goals and have evidence of effectiveness are eligible to receive an award in the "scale-up" category. The research projects vary in topic but are broadly aimed at understanding issues related to expanding the STEM workforce.

At the time of this OMB submission, 95 projects currently receive funding from the ITEST program.[5] Exhibit 8 provides a breakdown of the current universe of active ITEST projects, by project type. The projects types have been collapsed into the most current ITEST project categories.[6]

Exhibit 8: Number of Active ITEST Projects, by Project Type

Project Type	Number of Projects
Strategies	80
Research	9
Scale-Up	6

Source: NSF Award Database

Given the small number of research projects and their indirect link to teacher and student outcomes, case study projects will be selected from the "scale-up" and "strategies" project type category. Further, we will only include a scale-up project if we are able to collect the full complement of data at a single location.

Exhibit 8 enumerates the number of active projects as of February 2012. The ninth cohort of ITEST projects is currently being awarded and also will be available for inclusion in the sample.

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[5] There is a distinction between awards and projects. In some cases, multiple organizations receive an award as part of one project. These 95 projects correspond with 104 active awards. The sample will include 24 projects.

[6] The projects have been collapsed into the current ITEST project categories. Comprehensive and youth-based – two categories from earlier cohorts of projects that were eventually collapsed into a category called "strategies" -- are represented under the "strategies" category. The one project classified as a "conference/workshop" was collapsed into the "research" category.

Twenty-six projects from earlier cohorts are currently set to end by August 31, 2012, although ITEST projects frequently receive no-cost extensions. Depending on when we receive OMB approval and whether these projects receive no-cost extensions, these 26 projects may or may not be available for inclusion in the sample.

In addition to these 95 projects, a smaller number of "continuing" projects are still in operation despite the expiration of their ITEST award. The sample from the case studies will be drawn primarily from the universe of active projects, but as will be described in the following section, it is possible that a few projects may be drawn from these continuing projects.

Sample Selection

We will select the sample of 24 case studies using a two-step process.

Step 1. The first step will involve selecting 12 projects with the strongest evidence for effectiveness. These 12 projects will be identified using the data gathered through the evaluation review as part of the portfolio review task and nominations from ITEST program officers (described in the introduction to Supporting Statement A). All ITEST projects, regardless of whether they are currently receiving funding, are included in the evaluation review. As a result, a small number of projects that no longer receive funding, but which have been identified as highly successful and which have adequate data from which to draw, may be included in the sample. The research team has already conducted interviews with ITEST program officers and collected nominations of projects with evidence of effectiveness. These recommendations will be more heavily weighted when selecting projects from the most recent cohorts since newer projects are less likely to have evidence of effectiveness in the NSF files.

Step 2. After identifying 12 promising projects, the remaining 12 sites will be selected from a list of the remaining active strategies and scale-up projects. Notably under-performing projects, identified from conversations with program officials and our review of project evaluations, will be removed from the list before the sample is selected since these projects will not be useful in answering the research questions. Based on information developed through the portfolio review (described in the introduction of Supporting Statement A), the remaining projects will be categorized by their topic area, project components, and project format. Projects will be purposively sampled so that the entirety of the 24 case study sample reasonably approximates the full range of ITEST projects on these three criteria. To the extent possible, we also will attempt to ensure that the sample reflects the range of geographic regions, urbanicity, and grantee organizations (e.g., universities, museums, school districts, other non-profit organizations) represented by active ITEST projects.

While the small number of cases and the non-random selection process preclude a sample that is statistically representative for these criteria, every effort will be made to achieve reasonable face validity that the sample of 24 cases reflects the breadth of the ITEST portfolio.

B.2 Procedures for Collecting Information

Once the data collection is fully approved by OMB, the respective site visit teams will begin to contact sites to schedule the visits. The site visits will last three days each and will be conducted by two-person teams. While as many of the 24 site visits as possible will be done in the months immediately following OMB approval (likely fall and winter of 2012), it is possible some visits may not take place until the summer of 2013. This would only be the case if the timing of OMB approval did not allow for site visits in the summer of 2012.

To maximize the reliability of case study data, all site visitors will be trained before going into the field and will receive a manual containing all materials relevant to case study data collection (e.g., selection criteria for respondents, protocols, consent forms, debriefing forms). In addition to general case study training, site visitors will also receive detailed background information on their sites drawn from the portfolio review task.

The training will help team members develop a common understanding of the data collection and analysis goals. SRI has used a similar training model in other evaluations and has found that it increases the reliability of data collected by multiple researchers because shared understanding maintains consistency in data collection across projects and facilitates cross-project comparisons. Giving the site visitors detailed background information on each of their sites also allows them to probe more effectively on key items of interest and maximize their time on site.

The site visit team will work closely with the Principal Investigator at each visited project to ensure all relevant respondents are interviewed. All respondents must be actively involved or very knowledgeable about a site's ITEST project. At each case study site we will interview up to 38 participants. Interviews will be conducted with eight types of informants:

- Principal investigators
- Co-PIs
- Project staff
- Local evaluator
- Project partners
- Teachers (focus group)
- Students (focus group)
- Parents (focus group)

Exhibit 5 in Supporting Statement A provides a full account of the number of each respondent type we expect to interview, although the number will vary based on each project's size and organizational structure. We have developed protocols for each group of respondents and they are included in Appendix A.

Degree of Accuracy Needed

The research team will do everything possible to maximize the accuracy of the data collected for each of the case studies. All interviews (subject to the permission of the respondent) will be recorded to improve the accuracy of reporting. Furthermore, site visitors will attend detailed

training and will review background information prior to planning their visit to ensure efficient, consistent, and accurate data collection.

Use of Periodic Data Collection

The case studies will be conducted at each site one time in the months immediately following OMB approval.

B.3. Methods for Maximizing the Response Rate and Dealing with Nonresponse

The contractor (SRI International) has extensive experience in gaining access to schools, universities, and educational programs for research purposes. Because the potential programs and schools to be visited are present (or former) ITEST grantees, it is not expected there will be difficulty in obtaining permission for the site visits. Key access strategies that the research team will use include having one researcher be the primary contact with the principal investigator; using multiple methods (phone, email, mail if necessary) to communicate with the principal investigator; providing ample opportunities for the principal investigator to ask questions about the study; building in flexibility to work with multiple coordinators for scheduling if necessary; selecting mutually convenient dates; and providing easy-to-use tools such as scheduling templates to minimize the burden on the site.

To ensure that each relevant respondent group is represented in each case study, the research team will conduct interviews by phone at a later date in any case where respondents are unable to schedule a meeting during the site visit or become unavailable on short notice. Because the research team will work closely with the principal investigator to select respondents based on their role and will be flexible in scheduling the time and location of the interviews, a 100 percent response rate is anticipated.

B.4. Tests of Procedures or Methods

The case studies interview protocols were not piloted; however, they were reviewed by both the evaluation team's panel of consultative experts (see Exhibit 4) and the NSF ITEST Program Officers and were found to be appropriate for use in the case study interviews.

B.5. Names and Telephone Numbers of Individuals Consulted

Agency

Monya Ruffin, COTR, National Science Foundation, 703.292.7322

Contractors

SRI International will be responsible for data collection and analysis, under the direction of Patrick Shields, 650.859.3503.

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