

**SUPPORTING STATEMENT  
FOR PAPERWORK REDUCTION ACT SUBMISSIONS  
OMB CONTROL NO:XXXX**

November 3, 2006

**Introduction**

This request by the U.S. Department of Education seeks a three-year clearance to enable the Regional Educational Laboratory, Southeast (REL-SE) to collect data as part of a study investigating the effectiveness of the Alabama Mathematics, Science, and Technology Initiative (AMSTI). This study will consist of a group randomized controlled trial with quantitative and qualitative data collection to enable the Alabama State Department of Education (ALSDE) to make decisions about the initiative.

**A. Justification – Legislative Authority: Education Sciences Reform Act of 2002, Part D,  
Section 174 (20 U.S.C., 9564)**

*(1) Circumstances that Make Collection of Information Necessary*

***How Information is Necessary for Performance of REL-SE's Function***

The REL-SE is one of ten regional laboratories funded by the U.S. Department of Education, Institute of Education Sciences for the purpose of providing research-based information and services to all 50 states and territories. These Laboratories form a nationwide education knowledge network, building a bank of information and resources shared and disseminated nationally and regionally to improve student achievement.

Since the passage of the *No Child Left Behind Act* (NCLB), REL-SE has been charged with state and district responses to NCLB. REL-SE is responsible for conducting studies that reflect NCLB's emphasis on evidence-based education and NCLB's requirements to improve student outcomes.

***How Information is Necessary for the State of Alabama***

This work is in response to a request by the Alabama State Department of Education (ALSDE) for a scientific study of the effectiveness of AMSTI. This study is needed so that ALSDE, following the requirements of NCLB, can make decisions about this initiative based on scientific data regarding the program's effectiveness at improving student achievement.

The AMSTI program was developed by the ALSDE to improve the quality of mathematics and science instruction in grades Kindergarten through 12 (K-12) using technology. State staff have posted detailed information about the program on the AMSTI website ([www.amsti.org](http://www.amsti.org)). In addition, there are two documents, created by the State Department, which highlight key components of AMSTI. These include the *Report on the Review of the Literature: Alabama*

*Mathematics, Science, and Technology Initiative Committee, and the Executive Summary of the Annual Report on the Alabama Science in Motion Program.*

***(2) How Information Will Be Used, by Whom, and for What Purpose***

Under a contract with the U.S. Department of Education, REL-SE and its subcontractors will use the information as part of a randomized control trial. The evidence from this experiment will be used by the ALSDE and the Alabama legislature in consideration of whether to extend funding to the program being evaluated.

***Utility to the State of Alabama***

The information that will be collected, analyzed, and reported by means of the AMSTI study will be used by the state of Alabama to make decisions about program continuation, expansion, and improvement. In order to provide the precise information required by the state, the study evaluates the program's theory of action. AMSTI was designed to improve mathematics and science instruction (using technology) in Alabama. The developers of AMSTI posited that the key to improving student test scores in mathematics and science lay in the quality and effectiveness of teachers. The most direct way to increase teacher quality, in the AMSTI view, was to develop an in-depth, comprehensive professional development program reflective of the national standards in mathematics, science, and technology, and to provide teachers with a variety of resources to support what they learned in that program.

Specifically, the study seeks to answer the following questions, key to evaluating AMSTI's theory of action:

***a. On the Impact of AMSTI***

1. What is the impact of AMSTI on student achievement during the first and second years of implementation?
2. What is the impact of AMSTI on instructional practices of teachers during the first and second years of implementation?
3. Does two years of AMSTI have a greater impact on student achievement than one year, due to delayed impact?
4. Does AMSTI have a lasting effect on a school's success in increasing student achievement after the level of support for the intervention has been diminished?
5. How does the impact of AMSTI vary with characteristics of teachers and students and with the school technology environment?

***b. On the Implementation of AMSTI***

6. Is the delivery of the regional professional training consistent with the stated design of the AMSTI program? Are the technology materials that AMSTI uses made available to classrooms on a timely basis? Are all the follow-up supports in the program's design delivered as intended?

7. What is the relationship between the training provided by each of the regional sites and classroom instructional practice observed in those regions?
8. How does classroom implementation of AMSTI vary with teacher characteristics, student characteristics, and the technology environment of the school?

The AMSTI program began with a small number of school districts and has expanded yearly in order to provide materials and services to a greater proportion of the schools in the state. The state is currently considering offering the program to all schools in the state. In order to commit the necessary resources to this endeavor, the legislature requires solid evidence of program effectiveness. In addition, it requires information on the benefit of AMSTI within specific regions, among specific populations, and data on the specific aspects of the program that are related to improvement in student achievement.

#### ***Utility to Educators, Policymakers and the General Public***

This study will also provide needed information for educators, policymakers and the general public who have a stake in improving math and science programs. Within Alabama, stakeholders need to know whether their state program is effective, and if so, under what conditions it is effective. For stakeholders considering applying to become an AMSTI school, this information is critical to that decision. Stakeholders who are already part of the AMSTI program require this information to determine whether to continue the program and how to implement the program. Parties outside of Alabama also have an interest in learning about the effectiveness of AMSTI, either to decide whether to adopt AMSTI in their own states or to gain information that will allow them to compare other programs to the AMSTI program, in order to estimate effectiveness and to inform implementation.

#### ***Utility for Researchers***

There is a paucity of scientifically based evidence regarding the effectiveness of math and science programs. This study is intended to help fill this gap. What is learned will add to the scientific literature for reference in future studies. In addition, the data will be kept in the data warehouse of Empirical Education (with all identifying information removed) for use in future studies.

#### ***(3) Use of Technological Collection Techniques and Information Technology***

Web-based surveys will be administered to teachers and principals. This use of technology reduces the burden to the schools in comparison to the added time and effort needed for paper surveys (e.g., paper surveys entail distribution to the correct individuals and follow-up to ascertain receipt by individuals, making a paper copy after the completion of a survey and then mailing it back to the researchers, responding to queries from researchers when paper copies are delayed or lost in the mail and when researchers require clarification due to illegible responses, etc.). The data from web-based surveys are immediately uploaded into the researchers' database and immediately connected to the respondent's identifying information, allowing researchers to quickly seek clarification if questions arise.

Participants will receive an e-mailed invitation containing a link to the survey on the web. The necessary e-mail addresses will be obtained from the participants when they sign consent forms to participate in the study. Researchers will then test the addresses to ensure that each participant receives messages. In order to further verify the correct contact for the correct teacher participants, researchers will follow-up with an e-mail request for teacher information on the grade and class they teach. These processes will help to ensure that the actual surveys will reach the appropriate participants in a timely manner.

Researchers will verify that each survey is received from the correct respondent by requiring that each of the respondents select their region, school district, and name from a list, or select “other,” and type in their name. Researchers will follow-up on participants who are not on the previously constructed lists in order to verify that the respondents are indeed study participants.

#### ***(4) Identifying Duplication***

This study is not duplicating other work and is indeed filling a gap. The study is necessary because there is a lack of scientific evidence for educational programs of this nature. ALSDE has, however, commissioned evaluations of AMSTI in the past. Three external evaluations of AMSTI found that the students in the earliest AMSTI schools consistently outperformed their counterparts in non-AMSTI schools (Institute for Communication Research [ICR], 2004, 2005, 2006). Reported findings for middle school students in AMSTI schools were particularly dramatic, showing that their *Stanford 10* math scores were up to 8 percentile points higher than those of non-AMSTI students, and their *Stanford 10* science scores were up to 5 percentile points higher. The evaluators also found that AMSTI had “spillover” effects with respect to reading outcomes (ICR, 2006).

With regard to the past research, however, it is important to note that these evaluations were quasi-experimental in nature, relying upon a comparison of the AMSTI schools against demographically matched schools. As with so many quasi-experimental studies, however, results may have been subject to substantial selection bias. AMSTI schools had been interested enough early in the program’s history to know what it was and to volunteer to have it implemented in their schools. Since 80% of the teachers in each school were required to participate in the program, it is likely that teachers in the volunteering schools possessed a more positive disposition towards technology use in the classroom as well as a greater willingness to invest substantial time in their own professional development as compared to non-AMSTI schools. Because the quasi-experimental criterion for comparability was only that the two schools were in the same region, it may not have been sufficient to protect them from selection bias. (ICR, University of Alabama, 2006).

Thus, while the AMSTI schools may very well have outperformed non-AMSTI schools, it is difficult to determine whether this was due to other factors or to the AMSTI intervention absent a more rigorous experimental research design. A group-randomized controlled trial (RCT) of AMSTI, by removing all potential bases of selection bias, represents an advance over all previous research work on the intervention. This study will provide ALSDE with critical information on program effectiveness that is not currently available from other research.

### ***(5) Impact on Small Entities***

This study does not foresee any impact on small entities.

### ***(6) Consequences if Study is not Conducted or if Conducted Less Frequently***

#### ***a. Entire Study***

The *No Child Left Behind Act* insists that education providers base their decisions on scientifically based research. However, there is very little research that carefully measures the effectiveness of different pedagogical strategies. Furthermore, there is a gap between the theories on which the published materials are based and the realities in the classroom. Even with the most rigorously designed academic research, a persistent gap remains between what educational scientists know about what works in general and what works in their particular school district. In the case of AMSTI, the state of Alabama is seeking scientific evidence that is not otherwise available in order to make critical policy decisions regarding this program.

#### ***b. Class Rosters, Student Demographics and Math, Reading and Science Achievement Test Scores***

Data are collected from school systems and existing state records. These data requests are conducted once for the baseline information and then annually (three times in total) in order to capture any changes in demographics and to gather each new year's assessment scores. If we did not collect assessment data annually, we would not be able to provide ALSDE with scientific analyses on whether AMSTI is effective at improving achievement. If we did not collect demographic data annually, we would not be able to determine whether results differed among subgroups.

#### ***c. Teacher Surveys***

The survey burden for teachers will consist of up to 80 minutes annually, as 20 minute surveys will be administered four times during the first year and four times during the second year of the study. The surveys collect regular quantitative data (e.g., the number of minutes teaching math and science) over the course of several months so that researchers can run statistical analyses of program impact on instruction across all study regions as well as by groups of teachers (e.g., by level of teacher experience). Without quantitative teacher data, it would be difficult to make meaningful connections between program implementation and achievement. Because instruction varies daily, researchers attempt to estimate averages of instructional activities by sampling teachers' responses monthly. Only four monthly collections will be possible based on the timeline for OMB approval. Each survey asks the teachers to recall their instruction over the course of the prior two weeks. If data were not collected each of the four months, researchers would not be able to track teacher implementation over a sufficiently long period of time to estimate average implementation.

#### ***d. Teacher Observations and Follow-up Interviews***

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A subset of the teachers (42) will be selected for classroom observation and interview. Teachers will be chosen at random from a stratified sample (seven strata: grades 4, 5, 6, 7, and 8 math, grades 5 and 7 science) so that data are generalizable to all math grades and to grade 5 and grade 7 science teachers and correspond to student achievement, trainer log and training participant data. These teachers will have an added burden of about 60 minutes. The observation will in no way interfere with the class time. Observations allow an external view of implementation in order to triangulate with other implementation data. Follow-up interviews give context to the observation data.

A different subset of 42 teachers will be interviewed only. Teachers who are interviewed will have an additional burden of 15-20 minutes at one time only. Interviews, in general, allow for much richer information than can be gathered by surveys, which, again better informs the analysis of program implementation. The stand-alone interviews allow for a second data point at each school (at two schools there will be two observations and two interviews in order to provide three observations and three interviews at each grade level in each region) for classroom level qualitative data. Finally, observations and interviews provide information for improving survey questions. Without observations followed by interviews the analysis on the impact of AMSTI on classroom instruction would be informed only by teacher self-reports. If stand-alone interviews were eliminated, the amount of qualitative data collected through site visits would be very small.

#### ***e. Principal Surveys***

Principal surveys are only collected once during the first year and once during the second year of the study. The burden is about 30 minutes annually. The surveys are collected in the beginning of the year to gain baseline information on school climate, technology, curriculum, professional development, and instruction in the schools during the previous school year. Principal level data are critical to providing information from the perspective of the school rather than only at the classroom level. Without principal information, the study would rely purely on classroom level data regarding implementation. In addition, we would not be able to learn about integral aspects of the program, such as community involvement. Finally, principal responses, which are at the beginning of the year, provide critical information for improving the teacher survey questions.

#### ***f. Principal Interviews***

Principal interviews are only conducted once during the first year and once during the second year of the study. The burden is only 15-20 minutes each year. Interviews happen in the spring in order to learn about the implementation from a school level (as opposed to classroom level) perspective after the school has had the majority of the year to incorporate the program into their classrooms. Interviews allow for much richer information than is provided by survey and can allow for the opportunity to gain feedback for improving survey questions. Without the interviews, the only information on program implementation from the school level would be supplied by the annual principal survey.

#### ***g. Trainer Logs***

Trainers of grade 5 and grade 7 teachers complete logs during the Summer Institutes the first and second years of the study. Trainers will have a burden of up to 105 minutes over the course of the training (10 minutes after each session to complete a brief log plus less than five minutes to complete a background form only once). Without the logs we would not have detailed information on a daily basis regarding the extent to which trainers cover all of the training materials or which materials are covered.

#### ***h. Training Participant Surveys***

Participant surveys are completed only by grade 5 and grade 7 math and science teachers participating in the corresponding training sessions. Trainees will have a burden of up to 20 minutes only once for the completing of questionnaires. Without the participant surveys, information on training would rely solely on self-reporting by the trainers.

#### ***(7) Special Circumstances***

The survey burden for teachers will consist of up to 80 minutes annually, as 20 minute surveys will be administered 4 times over the course of the first and second years of the study. The surveys collect regular quantitative data (e.g., the number of minutes teaching math and science) over the course of several months so that researchers can run statistical analyses of program impact on instruction across all study regions as well as by groups of teachers (e.g., by level of teacher experience). Without quantitative teacher data, it would be difficult to make meaningful connections between program implementation and achievement. Because instruction varies daily, researchers attempt to estimate averages of instructional activities by sampling teachers' responses monthly. Each survey asks the teachers to recall their instruction over the course of the prior 2 weeks. If data were not collected each of the four months, researchers would not be able to track teacher implementation over a sufficiently long period of time to estimate average implementation.

#### ***(8) Compliance with 5 CFR 1320.8***

A 60-day notice to solicit public comments was published in the Federal Register on

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Public Comments:

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#### ***(9) Payments or Gifts***

Participants are presented with honoraria as an expression of appreciation for their time and effort. Annual honoraria are as follows:

- Teachers who complete surveys: \$100 check
- Teachers who are observed and participate in the follow-up interview: \$25 gift card
- Teachers who participate in an interview but are not observed: \$10 gift card
- Trainers who complete logs: \$25 gift card

### *(10) Assurances of Confidentiality*

Under the Confidential Information Protection and Statistical Efficiency Act of 2002 (CIPSEA), data that are gathered solely for statistical information are protected under a pledge of confidentiality alone. The data in this study qualify under CIPSEA, since they will only be used for analysis of the characteristics of groups without identifying the individuals or organizations that comprise the groups.

Teachers, Trainers and Administrators within study schools are asked to sign Consent forms as follows:

- AMSTI Teacher Consent Form
- AMSTI Principal Consent Form
- Professional Development Teacher Survey Consent Form
- Principal Interview Consent Form
- Stand Alone Teacher Interview Consent Form
- Teacher Observation Interview Consent Form
- Trainer Observation Log Consent Form

The research and the consent forms were approved by the University of North Carolina at Greensboro Institutional Review Board, which insures that research involving people follows federal regulations. Consent forms assure participants of the following:

By signing this consent form, you agree that you understand the procedures and any risks and benefits involved in this research, and that you agree to participate in the project during the 2006-2007 school year. You are free to refuse to participate or to withdraw your consent to participate in this research at any time without penalty or prejudice; your participation is entirely voluntary. Your privacy will be protected because you and your school will not be identified by name as a participant in this project.

In addition, participants are provided the following assurance about the protection of the data:

All data provided to our company will remain the property of your district, even while stored at our company's database. Our company will store the data electronically in a secure location and take precautions to ensure the data is accessible only to company personnel and consultants or to authorities legally authorized for access. Personally identifying information will be removed so that students and teachers will be identified only by unique numeric IDs within our company's database. Unless otherwise requested by your district, our company will retain the data in a secure location without individual identification for use in re-analysis and follow-on research. All paper documents will be shredded after 10 years. The district will be provided with a copy of the report, which will include the objective evidence of the program's effectiveness.

### *(11) Questions of a Sensitive Nature*



No questions of a sensitive nature will be asked.

**(12) Estimate of Annual Hour Burden**

**Introduction**

The AMSTI study consists of an original study in three regions of Alabama during the 2006-2007 and the 2007-2008 school years, and a replication study in two new regions of Alabama with new participants during the 2007-2008 and the 2008-2009 school years. Both studies will use identical data collection instruments to collect survey information, observe classroom instruction, and interview teachers and principals. The hour burden and cost burden estimates for each instrument are the same for each year and are the same for the original and the replication studies. The numbers of participants should also be similar for the original and the replication studies, with the following exception: in the summer of 2006 researchers conducted the principal surveys, the training participant surveys, and the trainer surveys under separate funding, so those items are not part of this request nor are they included in the burden table for 2006-2007.

**Table 1  
Instruments by Type of Respondent and Year of Data Collection**

Type of Respondent	Instruments	2006-2007	2007-2008	2008-2009
A. Principals	Principal Surveys		Y	Y
	Principal Interview Protocols	Y	Y	Y
B. Teachers	Web-Based Teacher Survey #1	Y	Y	Y
	Web-Based Teacher Survey #2	Y	Y	Y
	Web-Based Teacher Survey #3	Y	Y	Y
	Web-Based Teacher Survey #4	Y	Y	Y
	AMSTI and Control Teacher Observation Protocols	Y	Y	Y
	Teacher Interview Protocol	Y	Y	Y
	AMSTI Teacher (Training Participant) Survey		Y	Y
C. Trainers	AMSTI Trainer Background Sheet		Y	y
	Trainer logs (completed after each of the 10 training sessions)		Y	Y

**A12.1: Number of Respondents and Frequency of Response**

Following are three tables for the three years of this project plus one table that averages the annual burden for the three years. The calculations in these tables are responding to all the questions asked by OMB. The tables contain three years of data collection including both the original and the replication studies. The final number of annual respondents and annual responses on the 83-I are calculated by averaging the numbers for the three years.

Table 2 contains the burden estimates for the 2006-2007 school year. Only the original study occurs during this year.

**Table 2  
2006-2007 Original Study Only**

Type of Respondent	Number of Respondents	Data Collection Instrument	Number of Responses	Hours per Respondent	Total Time Burden Hours	Estimated Cost to Each Respondent	Estimated Total Cost
<b>A. Principals</b>	40	Principal Interview Protocols	40	0.33	13.33	\$35.16	\$468.80
<b>Principal Total</b>	<b>40</b>		<b>40</b>		<b>13.33</b>		<b>\$468.80</b>
<b>B. Teachers</b>	324	Web-Based Teacher Survey #1	324	0.33	108.00	\$27.30	\$2,948.40
	324	Web-Based Teacher Survey #2	324	0.33	108.00	\$27.30	\$2,948.40
	324	Web-Based Teacher Survey #3	324	0.33	108.00	\$27.30	\$2,948.40
	324	Web-Based Teacher Survey #4	324	0.33	108.00	\$27.30	\$2,948.40
	42	AMSTI and Control Teacher Observation Protocols	42	1	42.00	\$27.30	\$1,146.60
	84	Teacher Interview Protocol	84	0.33	28.00	\$27.30	\$764.40
<b>Teacher Total</b>	<b>324</b>		<b>1422</b>		<b>502.00</b>		<b>\$13,704.60</b>
<b>All Participants</b>	<b>364</b>		<b>1462</b>		<b>515.33</b>		<b>\$14,173.40</b>

Table 3 contains the burden estimates for the 2007-2008 school year. Both the original and the replication studies occur during this year.

**Table 3  
2007-2008 Original and Replication Studies**

Type of Respondent	Number of Respondents	Data Collection Instrument	Number of Responses	Hours per Respondent	Total Time Burden Hours	Estimated Cost to Each Respondent	Estimated Total Cost
<b>A. Principals</b>	80	AMSTI Principal Web-Based Survey	80	0.5	40	\$35.16	\$1,406.40

Type of Respondent	Number of Respondents	Data Collection Instrument	Number of Responses	Hours per Respondent	Total Time Burden Hours	Estimated Cost to Each Respondent	Estimated Total Cost
	80	Principal Interview Protocols	80	0.33	26.67	\$35.16	\$937.60
<b>Principal Total</b>	<b>80</b>		<b>160</b>		<b>66.7</b>		<b>\$2,344.00</b>
<b>B. Teachers</b>							
	648	Web-Based Teacher Survey #1	648	0.33	216	\$27.30	\$5,896.80
	648	Web-Based Teacher Survey #2	648	0.33	216	\$27.30	\$5,896.80
	648	Web-Based Teacher Survey #3	648	0.33	216	\$27.30	\$5,896.80
	648	Web-Based Teacher Survey #4	648	0.33	216	\$27.30	\$5,896.80
	84	AMSTI and Control Teacher Observation Protocols	84	1	84	\$27.30	\$2,293.20
	168	Teacher Interview Protocol	168	0.33	56	\$27.30	\$1,528.80
	140	AMSTI Teacher (Training Participant) Survey Grade 5 Math	140	0.17	23.33	\$27.30	\$637.00
	120	AMSTI Teacher (Training Participant) Survey Grade 5 Science	120	0.17	20.00	\$27.30	\$546.00
	80	AMSTI Teacher (Training Participant) Survey Grade 7 Math	80	0.17	13.33	\$27.30	\$364.00
	80	AMSTI Teacher (Training Participant) Survey Grade 7 Science	80	0.17	13.33	\$27.30	\$364.00
<b>Teacher Total</b>	<b>648</b>		<b>3264</b>		<b>1074.0</b>		<b>\$29,320.20</b>

Type of Respondent	Number of Respondents	Data Collection Instrument	Number of Responses	Hours per Respondent	Total Time Burden Hours	Estimated Cost to Each Respondent	Estimated Total Cost
<b>C. Trainers</b>	8	AMSTI Trainer Logs Grade 5 Math	8	0.08	0.67	31.25	\$20.83
	8	AMSTI Trainer Logs Grade 5 Science	8	0.08	0.67	31.25	\$20.83
	6	AMSTI Trainer Logs Grade 7 Math	6	0.08	0.50	31.25	\$15.63
	12	AMSTI Trainer Logs Grade 7 Science	12	0.08	1.00	31.25	\$31.25
	34	AMSTI Trainer Background Sheet	34	0.17	5.67	31.25	\$177.08
<b>Trainer Total</b>	<b>34</b>		<b>68</b>		<b>8.50</b>		<b>\$265.63</b>
<b>All Participants</b>	<b>762</b>		<b>3492</b>		<b>1149.17</b>		<b>\$31,929.83</b>

Table 4 contains the burden estimates for the 2008-2009 school year. Only the replication study occurs during this year.

**Table 4**  
**2008-2009 Replication Study Only**

Type of Respondent	Number of Respondents	Data Collection Instrument	Number of Responses	Hours per Respondent	Total Time Burden Hours	Estimated Cost to Each Respondent	Estimated Total Cost
<b>A. Principals</b>	40	AMSTI Principal Web-Based Survey	40	0.5	20	\$35.16	\$703.20
	40	Principal Interview Protocols	40	0.33	13.33	\$35.16	\$468.80
<b>Principal Total</b>	<b>40</b>		<b>80</b>		<b>33.33</b>		<b>\$1,172.00</b>
<b>B. Teachers</b>	324	Web-Based Teacher Survey #1	324	0.33	108	\$27.30	\$2,948.40
	324	Web-Based Teacher Survey #2	324	0.33	108	\$27.30	\$2,948.40
	324	Web-Based Teacher Survey #3	324	0.33	108	\$27.30	\$2,948.40
	324	Web-Based Teacher Survey #4	324	0.33	108	\$27.30	\$2,948.40

Type of Respondent	Number of Respondents	Data Collection Instrument	Number of Responses	Hours per Respondent	Total Time Burden Hours	Estimated Cost to Each Respondent	Estimated Total Cost
	42	AMSTI and Control Teacher Observation Protocols	42	1	42	\$27.30	\$1,146.60
	84	Teacher Interview Protocol	84	0.33	28	\$27.30	\$764.40
	70	AMSTI Teacher (Training Participant) Survey Grade 5 Math	70	0.17	11.67	\$27.30	\$318.50
	60	AMSTI Teacher (Training Participant) Survey Grade 5 Science	60	0.17	10.00	\$27.30	\$273.00
	40	AMSTI Teacher (Training Participant) Survey Grade 7 Math	40	0.17	6.67	\$27.30	\$182.00
	40	AMSTI Teacher (Training Participant) Survey Grade 7 Science	40	0.17	6.67	\$27.30	\$182.00
<b>Teacher Total</b>	<b>324</b>		<b>1632</b>		<b>537.00</b>		<b>\$14,660.10</b>
<b>C. Trainers</b>							
	4	AMSTI Trainer Logs Grade 5 Math	4	0.08	0.33	\$31.25	\$10.42
	4	AMSTI Trainer Logs Grade 5 Science	4	0.08	0.33	\$31.25	\$10.42
	3	AMSTI Trainer Logs Grade 7 Math	3	0.08	0.25	\$31.25	\$7.81
	6	AMSTI Trainer Logs Grade 7 Science	6	0.08	0.50	\$31.25	\$15.63
	17	AMSTI Trainer Background Sheet	17	0.17	2.83	\$31.25	\$88.54
<b>Trainer Total</b>	<b>17</b>		<b>34</b>		<b>4.25</b>		<b>\$132.81</b>
<b>All Participants</b>	<b>381</b>		<b>1746</b>		<b>574.58</b>		<b>\$15,964.91</b>

**Table 5  
Average Burden**

School Years	Total Respondents	Total Responses	Total Time Burden Hours	Estimated Total Cost
2006-2007	364	1462	515.33	\$14,173.40
2007-2008	762	3492	1149.17	\$31,929.83
2008-2009	381	1746	574.58	\$15,964.91
<b>Average</b>	<b>502.33</b>	<b>2233.33</b>	<b>746.36</b>	<b>\$20,689.38</b>

***A12.2: Hour Burden by Each Form***

The AMSTI Principal Web-Based Survey should take approximately 30 minutes to complete. This estimate is based on the time required by principals to complete the survey when the survey was piloted during August of 2006.

The Principal Interview Protocols (control and treatment) should take approximately 20 minutes to complete. Burden was determined based on the study team's experience in conducting similar data collections.

The four AMSTI Teacher Web-Based surveys should each take approximately 20 minutes to complete. This estimate is based on experience from similar web-based teacher surveys previously conducted by Empirical Education Inc.

The AMSTI and Control Teacher Observation Protocols should take approximately 1 hour to complete. Burden was determined based on the study team's experience in conducting similar data collections.

The Teacher Interview Protocols should take approximately 20 minutes to complete. Burden was determined based on the study team's experience in conducting similar data collections.

The AMSTI Teacher (Training Participant) Surveys should take approximately 10 minutes to complete. The participant surveys were piloted with all grade 5 and grade 7 math and science teacher training participants in the 2006 training Institutes.

The AMSTI Trainer Logs should take about 5 minutes and the Background Sheets should take about 10 minutes. The trainer checklist and background sheets were piloted with all grade 5 and grade 7 math and science trainers in the 2006 training institutes.

***A12.3: Annualized Cost for Each Instrument***

The cost for each instrument was estimated by multiplying the hour burden by the number of participants by the estimated hourly wage for that participant type. Then the total costs for each year were averaged over the three years.

Principals' hourly wages were estimated using figures from two sources. The following list of median principal salaries from around the state was taken from Salaries.Com at [http://swz.salary.com/salarywizard/layouthtmls/AL/swzl\\_compresult\\_state\\_AL\\_ED03000012.html](http://swz.salary.com/salarywizard/layouthtmls/AL/swzl_compresult_state_AL_ED03000012.html) on October 20, 2006. This table indicates that there is very little regional variation in principal salaries. The median from this table, \$67,514, was used to estimate principal salary. Then the salary was divided by the number of hours worked annually or 8 hours per day on 240 days per year. This number was provided in a telephone conversation by the Alabama Education Association on October 13, 2006.

**Table 6  
Median Principal Salary by City in Alabama**

City	Median Salary
Dothan	\$66,031
Florence	\$66,623
Montgomery	\$67,106
Mobile	\$67,514
Tuscaloosa	\$67,840
Huntsville	\$69,411
Birmingham	\$69,506

Teachers' hourly wages were estimated using figures from two sources. According to a press release from the American Federation of Teachers titled, *Alabama Ranks 43<sup>rd</sup> in the Nation for Teacher Pay*, dated October 5, 2005, Alabama teachers' average salary was \$38,282 during the 2003-2004 school year. This annual salary was then divided by the number of hours worked annually or 7.5 hours per day on 187 days per year. This number was provided in a telephone conversation by the Alabama Education Association on October 13, 2006.

Trainer salaries were provided by the Alabama State Department of Education by telephone on October 12, 2006.

***(13) Estimate of Total Annual Cost Burden***

There is no estimated respondent cost burden for this project other than the time spent on responding to the surveys/interviews or participating in classroom observations.

#### ***(14) Estimate of Cost to the Federal Government***

The data collection will be conducted by two subcontractors both of which are working under fixed price contracts. The costs will include the staff time for developing the data collection instruments; communicating with school, district and state staff; conducting observations and interviews; tabulating and analyzing data; and writing reports. Total cost: \$3.1 million over 5 years.

#### ***(15) Reason for Program Changes or Adjustments***

Not applicable.

#### ***(16) Publication of Results of Data Collection***

Given the size and scope of the AMSTI study, it will be important to disseminate study findings through different methods and with products suited to a variety of interested audiences. Methods and products will include articles in peer-reviewed, research- and practitioner-oriented, journals, brief fact sheets appropriate for researchers, practitioners, and parents, PowerPoint conference presentations, and additions to the AMSTI website established by ALSDE. If time and resources permit, the development of a book that highlights AMSTI and other IES-funded Task 2 studies at the REL-SE could be considered. Audiences to target will include: (a) ALSDE staff, (b) the AL university training programs providing the PD events and preparing AL teachers in math and science education, (c) school principals and teachers in AL, and (d) nationwide state boards of education and other policymakers, including those at the federal level within IES and elsewhere.

Journal articles can be developed within three categories: (a) those that focus on student academic achievement outcomes, including variation of impacts among different types of students and based on variations in exposure to different levels of AMSTI implementation practices; (b) those that describe in detail the classroom implementation practices of teachers, including comparison between experimental and control teachers, and factors such as teacher experience levels or availability of technology that might have mediated implementation practices; and (c) those that describe the process of establishing and sustaining the state-level infrastructure for AMSTI, including the in-depth, comprehensive professional development program.

Research articles concerning student achievement outcomes and classroom implementation practices can be developed primarily targeting the research community and other interested groups and individuals (e.g., policymakers; university training program staff). Practitioner-oriented articles on the same topics can target school principals, teachers, school board members, policymakers, and training staff.

Brief, colorful and engaging fact sheets that describe the study, methodology, key findings and implications for practice will be developed for broad dissemination within Alabama, among



other Labs, and at appropriate conferences. Different fact sheets can be developed to meet the information needs of different audiences.

A set of conference presentations that describe AMSTI, the study design and methods, and outcomes can be made at the American Educational Research Association, the American Evaluation Association, and other similar research-oriented conference events. Conference presentations that are more focused on describing the AMSTI intervention and how it was implemented in school settings will be conducted at conferences of school-based professionals (e.g., state-level program and curriculum specialists and managers, principals, and classroom teachers). In addition, the research team will work closely with ALSDE staff to identify conferences, meetings and other venues within Alabama at which presentations, tailored to the relevant audience, can be made. Web casts can be considered as an efficient, lower cost method to provide study information to large audiences.

The research team will also work with ALSDE to develop and post information about the study and its findings on the state’s AMSTI website, [www.AMSTI.org](http://www.AMSTI.org), as it will in parallel with the IES website for the Regional Lab System and its implementation contractor.

**Table 7  
Project Timeline**

Month/Year	Activity
February 2006	Randomization of AMSTI Study Schools
June-July 2006	Summer Institutes to Train New AMSTI Teachers and Principals
July 2006	Web-Based Principal Surveys
August 2006	AMSTI Implemented in AMSTI First Classrooms
January-April 2007	Web-Based Teacher Surveys
March-April 2007	Classroom Observations and Teacher Interviews, Year One
July 2007	Submit Interim Report, Year One
June-July 2007	Year Two Summer Institutes for AMSTI First Group and Year One Summer Institutes for AMSTI Second Group
July 2007	Web-Based Principal Surveys, Year Two
August 2007	AMSTI Implemented in AMSTI First and AMSTI Second Group Classrooms
September 2007	Submit Final Reports, Year One
January-April 2008	Web-Based Teacher Surveys, Year Two
March - April 2008	Classroom Observations and Teacher Interviews, Year Two
July 2008	Submit Interim Report, Year Two
September 2008	Submit Technical and Non-Technical Final Reports, Year Two
September 2009	Submit Technical and Non-Technical Final Reports, Year Three

*Note. The replication study timeline will be identical to that of the original study, except that all replication study activities will be one year later than the activities for the original study.*

***(17) OMB Approval for Not Displaying OMB Date***

The OMB approval expiration date will be given to all survey respondents for all surveys.

***(18) Exceptions to the Certificate Statement***

There are no exceptions to the certification statement.