

Status: Submitted
 Last Updated: 06/25/2010 2:38 PM

Technical Review Coversheet

Applicant: Smithsonian Institution -- National Science Resources Center,LASER -
 National Science Resources Center,LASER (U396B100097)

Reader #1:

	POINTS POSSIBLE	POINTS SCORED
Summary Statement		
1. Summary Statement	N/A	N/A
Selection Criteria		
1. A. Need for the Project and Quality of the Project Design (up to 20 Points)	20	_____
2. B. Strength of Research, Significance of Effect, and Magnitude of Effect (up to 15 Points)	15	15
3. C. Experience of the Eligible Applicant (up to 20 Points)	20	_____
4. D. Quality of the Project Evaluation (up to 15 Points)	15	11
5. E. Strategy and Capacity to Bring to Scale (up to 10 Points)	10	_____
6. F. Sustainability (up to 10 Points)	10	_____
7. G. Quality of the Management Plan and Personnel (up to 10 Points)	10	_____
Competitive Preference		
1. Competitive Preference 5: Innovations for Improving Early Learning Outcomes (0 or 1 Point)	1	_____
2. Competitive Preference 6: Innovations That Support College Access and Success (0 or 1 Point)	1	_____
3. Competitive Preference 7: Innovations To Address	1	_____

the Unique Learning Needs of Students With Disabilities and Limited English Proficient Students (0 or 1 Point)

4. Competitive Preference 8: Innovations That Serve Schools in Rural LEAs (0, 1, or 2 Points)	2	_____
TOTAL	105	26

Technical Review Form

Validation 14: 84.396B

Reader #1:

Applicant: Smithsonian Institution -- National Science Resources Center, LASER - National Science Resources Center, LASER (U396B100097)

Summary Statement

1. Summary Statement

Selection Criteria

1. A. Need for the Project and Quality of the Project Design (up to 20 Points)

In determining the need for the project and quality of the design of the proposed project, the Secretary considers the following factors:

(1) The extent to which the proposed project represents an exceptional approach to the priorities the eligible applicant is seeking to meet (i.e., addresses a largely unmet need, particularly for high-need students, and is a practice, strategy, or program that has not already been widely adopted).

(2) The extent to which the proposed project has a clear set of goals and an explicit strategy, with actions that are

(a) aligned with the priorities the eligible applicant is seeking to meet, and

(b) expected to result in achieving the goals, objectives, and outcomes of the proposed project.

(3) The extent to which the proposed project is consistent with the research evidence supporting the proposed project, taking into consideration any differences in context.

Strengths

Weaknesses

2. B. Strength of Research, Significance of Effect, and Magnitude of Effect (up to 15 Points)

The Secretary considers the strength of the existing research evidence, including the internal validity (strength of causal conclusions) and external validity (generalizability) of the effects reported in prior research, on whether the proposed project will improve student achievement or student growth, close achievement gaps, decrease dropout rates, increase high school graduation rates, or increase college enrollment and completion rates. Eligible applicants may also demonstrate success through an intermediate variable that is strongly correlated with improving these outcomes, such as teacher or principal effectiveness.

In determining the strength of the existing research evidence, the Secretary considers the following factors:

(1) The extent to which the eligible applicant demonstrates that there is moderate evidence (as defined in the Notice Inviting Applications) that the proposed practice, strategy, or program will have a statistically significant, substantial, and important effect on improving student achievement or student growth, closing achievement gaps, decreasing dropout rates, increasing high school graduation rates, or increasing college enrollment and completion rates.

(2) The importance and magnitude of the effect expected to be obtained by the proposed project, including the likelihood that the project will substantially and measurably improve student achievement or student growth, close achievement gaps, decrease dropout rates, increase high school graduation rates, or increase college enrollment and completion rates. The evidence in support of the importance and magnitude of the effect would be the research-based evidence provided by the eligible applicant to support the proposed project.

Strengths

(1) The applicant argues that there is at least moderate evidence as defined by WWC that the inquiry model is effective. Several research studies were cited, with a range of findings and some with possible questionable design or with no comparison groups. However, one well-designed experimental study and one quasi-experimental study reported that students receiving inquiry-based instruction, or students whose teachers were trained to use inquiry-oriented materials, outperformed students not receiving such instruction.

These results alone would not be sufficient to meet the test of moderate evidence given that the applicant does not demonstrate that the programs being studied were the same as, or very similar to, the proposed project. However, although not reported in this specific section, in the following section the applicant provides some results from prior independent evaluations of the LASER model. These evaluations, including two randomized experiments, reported significant improvement in student science achievement compared to those in text-based or kit-based alone programs.

(2) Medium to large effects were found in the well-designed studies that reported significant results, providing some justification that the proposed project is likely to substantially and measurably improve student achievement. Because the applicant is proposing to test the model in three diverse regions of the country among rural, low-income and minority students, it has the potential to have a very important effect for improving science education should the project prove successful.

Weaknesses

None noted.

Reader's Score: 15

3. C. Experience of the Eligible Applicant (up to 20 Points)

In determining the experience of the eligible applicant, the Secretary considers the following factors:

- (1) The past performance of the eligible applicant in implementing complex projects.**
- (2) The extent to which an eligible applicant provides information and data demonstrating that -**
 - (a) In the case of an eligible applicant that is an LEA, the LEA has -**
 - (i) Significantly closed the achievement gaps between groups of students described in section 1111(b)(2) of the ESEA, or significantly increased student achievement for all groups of students described in such section; and**
 - (ii) Made significant improvements in other areas, such as graduation rates or increased recruitment and placement of high-quality teachers and principals, as demonstrated with meaningful data; or**
 - (b) In the case of an eligible applicant that includes a nonprofit organization, the nonprofit organization has significantly improved student achievement, attainment, or retention through its record of work with an LEA or schools.**

Strengths

Weaknesses

4. D. Quality of the Project Evaluation (up to 15 Points)

In determining the quality of the evaluation, the Secretary considers the following factors:

- (1) The extent to which the methods of evaluation will include a well designed experimental study or well designed quasi-experimental study.
- (2) The extent to which the methods of evaluation will provide high-quality implementation data and performance feedback, and permit periodic assessment of progress toward achieving intended outcomes.
- (3) The extent to which the evaluation will provide sufficient information about the key elements and approach of the project so as to facilitate replication or testing in other settings.
- (4) The extent to which the proposed project plan includes sufficient resources to carry out the project evaluation effectively.
- (5) The extent to which the proposed evaluation is rigorous, independent, and neither the program developer nor the project implementer will evaluate the impact of the project.

Strengths

- (1) The applicant will employ an RCT model complemented by case studies. Thus, through the RCT, the researchers will be able to test the causal relationship between the instruction and science learning. The applicant plans to use the results of a needs analysis to identify a set of matched pairs of schools, which will then be assigned to treatment and control group. Multiple HLM analyses will be used to test the hypotheses.
- (2) It appears that detailed bi-annual reports will be provided to project staff; these reports will include progress indicators, and will identify areas of strength and challenge.
- (3) The evaluator will complement the RCT with multiple case studies to provide a deeper understanding of the program elements and interactions. The applicant provides detailed information about the process for selection of the case study schools, the data that will be collected, and how it will be organized, analyzed and reported. This will provide extremely useful information to facilitate the replication process.
- (4) An extremely impressive evaluation team has been assembled for this project, and it appears that this group has sufficient experience in multiple areas of evaluation and research design to have accurately assessed the

resources needed to conduct an effective and high quality project evaluation. (5) The applicant has documented the rigorous evaluation methods and procedures in preceding sections. The applicant states that it has no prior history with the independent evaluator and has agreed that the evaluator will assume final, independent responsibility for the quality of the research and findings.

Weaknesses

(1) The applicant does not outline any measurable goals and objectives. Although two research hypotheses will be tested (p. 17), one concerning teachers and one concerning students, no numeric goals are stated. The applicant provides no indication of how much more likely participating teachers should be to provide inquiry-based instruction, or how much higher it expects participating students to score on tests of science learning. Thus, it may be possible for the applicant to report a trivial difference as success, simply because numeric goals have not been established, nor does the applicant state that it expects the differences it finds to be statistically significant.

(3) The applicant does not discuss whether or not an attempt to measure fidelity of program implementation across sites will be included in the evaluation, or if the applicant considers this to be an important consideration or why this might not be possible or necessary.

Reader's Score: 11

5. E. Strategy and Capacity to Bring to Scale (up to 10 Points)

In determining the quality of the strategy and capacity to bring the proposed project to scale, the Secretary considers:

(1) The number of students proposed to be reached by the proposed project and the capacity of the eligible applicant and any other partners to reach the proposed number of students during the course of the grant period.

(2) The eligible applicant's capacity (e.g., in terms of qualified personnel, financial resources, or management capacity) to bring the proposed project to scale on a State or regional level (as appropriate, based on the results of the proposed project) working directly, or through other partners, either during or following the end of the grant period.

(3) The feasibility of the proposed project to be replicated successfully, if positive results are obtained, in a variety of settings and with a variety of student populations. Evidence of this ability includes the availability of resources and expertise required for implementing the project with fidelity, and the proposed

project's evidence of relative ease of use or user satisfaction.

(4) The eligible applicant's estimate of the cost of the proposed project, which includes the start-up and operating costs per student per year (including indirect costs) for reaching the total number of students proposed to be served by the project. The eligible applicant must include an estimate of the costs for the eligible applicant or others (including other partners) to reach 100,000, 250,000, and 500,000 students.

(5) The mechanisms the eligible applicant will use to broadly disseminate information on its project to support further development, expansion, or replication.

Strengths

Weaknesses

6. F. Sustainability (up to 10 Points)

In determining the adequacy of resources for the proposed project, the Secretary considers the following factors:

(1) The extent to which the eligible applicant demonstrates that it has the resources, as well as the support of stakeholders (e.g., State educational agencies, teachers' unions), to operate the project beyond the length of the Validation grant.

(2) The potential and planning for the incorporation of project purposes, activities, or benefits into the ongoing work of the eligible applicant and any other partners at the end of the Validation grant.

Strengths

Weaknesses

7. G. Quality of the Management Plan and Personnel (up to 10 Points)

In determining the quality of the management plan and personnel for the proposed project, the Secretary considers:

(1) The adequacy of the management plan to achieve the objectives of the proposed project on time and within budget, including clearly defined responsibilities, timelines, and milestones for accomplishing project tasks, as well as tasks related to the sustainability and scalability of the proposed project.

(2) The qualifications, including relevant training and experience, of the project director and key project personnel, especially in managing complex projects.

(3) The qualifications, including relevant expertise and experience, of the project director and key personnel of the independent evaluator, especially in designing and

conducting experimental and quasi-experimental studies of educational initiatives.
Strengths

Weaknesses

Competitive Preference

**1. Competitive Preference 5: Innovations for Improving Early Learning Outcomes
(0 or 1 Point)**

We give competitive preference to applications for projects that would implement innovative practices, strategies, or programs that are designed to improve educational outcomes for high-need students who are young children (birth through 3rd grade) by enhancing the quality of early learning programs. To meet this priority, applications must focus on:

- (a) improving young children's school readiness (including social, emotional, and cognitive readiness) so that children are prepared for success in core academic subjects (as defined in section 9101(11) of the ESEA);**
- (b) improving developmental milestones and standards and aligning them with appropriate outcome measures; and**
- (c) improving alignment, collaboration, and transitions between early learning programs that serve children from birth to age three, in preschools, and in kindergarten through third grade.**

Strengths

Weaknesses

**2. Competitive Preference 6: Innovations That Support College Access and Success
(0 or 1 Point)**

We give competitive preference to applications for projects that would implement innovative practices, strategies, or programs that are designed to enable kindergarten through grade 12 (K-12) students, particularly high school students, to successfully prepare for, enter, and graduate from a two- or four-year college. To meet this priority, applications must include practices, strategies, or programs for K-12 students that

- (a) address students' preparedness and expectations related to college;**
- (b) help students understand issues of college affordability and the financial aid and college application processes; and**
- (c) provide support to students from peers and knowledgeable adults.**

Strengths

Weaknesses

3. Competitive Preference 7: Innovations To Address the Unique Learning Needs of

Students With Disabilities and Limited English Proficient Students (0 or 1 Point)

We give competitive preference to applications for projects that would implement innovative practices, strategies, or programs that are designed to address the unique learning needs of students with disabilities, including those who are assessed based on alternate academic achievement standards, or the linguistic and academic needs of limited English proficient students. To meet this priority, applications must provide for the implementation of particular practices, strategies, or programs that are designed to improve academic outcomes, close achievement gaps, and increase college- and career-readiness, including increasing high school graduation rates (as defined in this notice), for students with disabilities or limited English proficient students.

Strengths

Weaknesses

4. Competitive Preference 8: Innovations That Serve Schools in Rural LEAs (0, 1, or 2 Points)

We give competitive preference to applications for projects that would implement innovative practices, strategies, or programs that are designed to focus on the unique challenges of high-need students in schools within a rural LEA (as defined in this notice) and address the particular challenges faced by students in these schools. To meet this priority, applications must include practices, strategies, or programs that are designed to improve student achievement or student growth, close achievement gaps, decrease dropout rates, increase high school graduation rates, or improve teacher and principal effectiveness in one or more rural LEAs.

Strengths

Weaknesses

Status: Submitted

Last Updated: 06/25/2010 2:38 PM

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Status: Submitted

Last Updated: 07/01/2010 6:12 PM

Technical Review Coversheet

Applicant: Smithsonian Institution -- National Science Resources Center,LASER -
National Science Resources Center,LASER (U396B100097)

Reader #2:

	POINTS POSSIBLE	POINTS SCORED
Summary Statement		
1. Summary Statement	N/A	N/A
Selection Criteria		
1. A. Need for the Project and Quality of the Project Design (up to 20 Points)	20	_____
2. B. Strength of Research, Significance of Effect, and Magnitude of Effect (up to 15 Points)	15	13
3. C. Experience of the Eligible Applicant (up to 20 Points)	20	_____
4. D. Quality of the Project Evaluation (up to 15 Points)	15	11
5. E. Strategy and Capacity to Bring to Scale (up to 10 Points)	10	_____
6. F. Sustainability (up to 10 Points)	10	_____
7. G. Quality of the Management Plan and Personnel (up to 10 Points)	10	_____
Competitive Preference		
1. Competitive Preference 5: Innovations for Improving Early Learning Outcomes (0 or 1 Point)	1	_____
2. Competitive Preference 6: Innovations That Support College Access and Success (0 or 1 Point)	1	_____

3. Competitive Preference 7: Innovations To Address the Unique Learning Needs of Students With Disabilities and Limited English Proficient Students (0 or 1 Point)	1	_____
4. Competitive Preference 8: Innovations That Serve Schools in Rural LEAs (0, 1, or 2 Points)	2	_____
TOTAL	105	24

Technical Review Form

Validation 14: 84.396B

Reader #2:

Applicant: Smithsonian Institution -- National Science Resources Center,LASER - National Science Resources Center,LASER (U396B100097)

Summary Statement

1. Summary Statement

Selection Criteria

1. A. Need for the Project and Quality of the Project Design (up to 20 Points)

In determining the need for the project and quality of the design of the proposed project, the Secretary considers the following factors:

(1) The extent to which the proposed project represents an exceptional approach to the priorities the eligible applicant is seeking to meet (i.e., addresses a largely unmet need, particularly for high-need students, and is a practice, strategy, or program that has not already been widely adopted).

(2) The extent to which the proposed project has a clear set of goals and an explicit strategy, with actions that are

(a) aligned with the priorities the eligible applicant is seeking to meet, and

(b) expected to result in achieving the goals, objectives, and outcomes of the

proposed project.

(3) The extent to which the proposed project is consistent with the research evidence supporting the proposed project, taking into consideration any differences in context.

Strengths

Weaknesses

2. B. Strength of Research, Significance of Effect, and Magnitude of Effect (up to 15 Points)

The Secretary considers the strength of the existing research evidence, including the internal validity (strength of causal conclusions) and external validity (generalizability) of the effects reported in prior research, on whether the proposed project will improve student achievement or student growth, close achievement gaps, decrease dropout rates, increase high school graduation rates, or increase college enrollment and completion rates. Eligible applicants may also demonstrate success through an intermediate variable that is strongly correlated with improving these outcomes, such as teacher or principal effectiveness.

In determining the strength of the existing research evidence, the Secretary considers the following factors:

(1) The extent to which the eligible applicant demonstrates that there is moderate evidence (as defined in the Notice Inviting Applications) that the proposed practice, strategy, or program will have a statistically significant, substantial, and important effect on improving student achievement or student growth, closing achievement gaps, decreasing dropout rates, increasing high school graduation rates, or increasing college enrollment and completion rates.

(2) The importance and magnitude of the effect expected to be obtained by the proposed project, including the likelihood that the project will substantially and measurably improve student achievement or student growth, close achievement gaps, decrease dropout rates, increase high school graduation rates, or increase college enrollment and completion rates. The evidence in support of the importance and magnitude of the effect would be the research-based evidence provided by the eligible applicant to support the proposed project.

Strengths

B. STRENGTH OF RESEARCH

**1. MODERATE EVIDENCE
STRENGTHS**

1. The applicant notes a wide range of appropriate studies many directly

related to its LASER model.

2. The applicant will utilize an experimental model.

**3. IMPORTANCE AND MAGNITUDE
STRENGTHS**

1. There is significant importance and magnitude of the research study.

Weaknesses

MODERATE EVIDENCE

WEAKNESSES

1. The applicant limits its research to the effectiveness of teaching a science course.

2. The applicant does not explain in detail how the schools will be randomly selected for the experimental design.

IMPORTANCE AND MAGNITUDE

WEAKNESSES

1. The research question of how the LASER approach has been successful in helping to promote systemic change does not address the outcomes desired by the funding agency.

2. The research is very well designed but is very limited with just one or two courses in many cases at the individual school site.

3. The applicant addresses only a limited number of the outcomes desired by the funding agency.

4. The project only meets part of the outcomes or research-based analysis required by the funding agency

Reader's Score: 13

3. C. Experience of the Eligible Applicant (up to 20 Points)

In determining the experience of the eligible applicant, the Secretary considers the following factors:

(1) The past performance of the eligible applicant in implementing complex projects.

(2) The extent to which an eligible applicant provides information and data demonstrating that -

(a) In the case of an eligible applicant that is an LEA, the LEA has -

(i) Significantly closed the achievement gaps between groups of students described in section 1111(b)(2) of the ESEA, or significantly increased student achievement for all groups of students described in such section; and

(ii) Made significant improvements in other areas, such as graduation rates or increased recruitment and placement of high-quality teachers and principals, as demonstrated with meaningful data; or

(b) In the case of an eligible applicant that includes a nonprofit organization, the nonprofit organization has significantly improved student achievement, attainment, or retention through its record of work with an LEA or schools.

Strengths

Weaknesses

4. D. Quality of the Project Evaluation (up to 15 Points)

In determining the quality of the evaluation, the Secretary considers the following factors:

- (1) The extent to which the methods of evaluation will include a well designed experimental study or well designed quasi-experimental study.**
- (2) The extent to which the methods of evaluation will provide high-quality implementation data and performance feedback, and permit periodic assessment of progress toward achieving intended outcomes.**
- (3) The extent to which the evaluation will provide sufficient information about the key elements and approach of the project so as to facilitate replication or testing in other settings.**
- (4) The extent to which the proposed project plan includes sufficient resources to carry out the project evaluation effectively.**
- (5) The extent to which the proposed evaluation is rigorous, independent, and neither the program developer nor the project implementer will evaluate the impact of the project.**

Strengths

D. QUALITY OF PROJECT EVALUATION

1. METHODS OF DESIGN

STRENGTHS

- 1. The design is well thought out and included several evaluation protocols.**

2. HIGH QUALITY IMPLEMENTATION DATA

STRENGTHS

- 1. The evaluation is well thought out and the applicant clearly explains the rationale for study size to obtain power and effects size data.**

3. KEY ELEMENTS AND APPROACH FOR REPLICATION
STRENGTHS

1. The applicant has a design that will facilitate its ability for replication.

4. SUFFICIENT RESOURCES FOR THE EVALUATION
STRENGTHS

1. The applicant has a long history of identifying costs and resources and has more than sufficiently allocated funding for the evaluation.

5. EVALUATION IS RIGOROUS AND INDEPENDENT
STRENGTHS

1. The applicant has a very strong, rigorous and independent evaluation model and addresses the fidelity of the evaluation.

Weaknesses

METHODS OF DESIGN
WEAKNESSES

1. The applicant can do a very good study of answering its two research questions of having (1) teachers who receive intensive training and supporting materials will be better than teachers who do not, and (2) students who receive high-quality, inquiry based instruction will score higher on tests than students who only learn science from reading a textbook. However, addressing outcomes of the funding agency appear more challenging.

2. It is unclear whether applicant will address the range of outcomes desired by the funding agency.

3. The design will be difficult to address outcomes such as dropout rates, graduation rates, college going rates, etc. desired by the funding agency.

4. The model is not a comprehensive school-site wide model which makes it difficult to address all the outcomes desired by the funding agency.

HIGH QUALITY IMPLEMENTATION DATA
WEAKNESSES

1. No major weaknesses noted.

KEY ELEMENTS AND APPROACH FOR REPLICATION
WEAKNESSES

1. The applicant does not present a sufficiently comprehensive model to address most of the outcomes desired by the funding agency.

2. The program proposed and structured by the applicant provides for a nice, tight, very limited project to evaluate, especially given that the

applicant has listed the research questions it will address. However, this is not aligned with the intent and purpose of the grant program.

**SUFFICIENT RESOURCES FOR THE EVALUATION
WEAKNESSES**

1. No weaknesses of importance to note.

**EVALUATION IS RIGOROUS AND INDEPENDENT
WEAKNESSES**

1. There were no weaknesses of importance to note

Reader's Score: 11

5. E. Strategy and Capacity to Bring to Scale (up to 10 Points)

In determining the quality of the strategy and capacity to bring the proposed project to scale, the Secretary considers:

(1) The number of students proposed to be reached by the proposed project and the capacity of the eligible applicant and any other partners to reach the proposed number of students during the course of the grant period.

(2) The eligible applicant's capacity (e.g., in terms of qualified personnel, financial resources, or management capacity) to bring the proposed project to scale on a State or regional level (as appropriate, based on the results of the proposed project) working directly, or through other partners, either during or following the end of the grant period.

(3) The feasibility of the proposed project to be replicated successfully, if positive results are obtained, in a variety of settings and with a variety of student populations. Evidence of this ability includes the availability of resources and expertise required for implementing the project with fidelity, and the proposed project's evidence of relative ease of use or user satisfaction.

(4) The eligible applicant's estimate of the cost of the proposed project, which includes the start-up and operating costs per student per year (including indirect costs) for reaching the total number of students proposed to be served by the project. The eligible applicant must include an estimate of the costs for the eligible applicant or others (including other partners) to reach 100,000, 250,000, and 500,000 students.

(5) The mechanisms the eligible applicant will use to broadly disseminate

information on its project to support further development, expansion, or replication.

Strengths

Weaknesses

6. F. Sustainability (up to 10 Points)

In determining the adequacy of resources for the proposed project, the Secretary considers the following factors:

(1) The extent to which the eligible applicant demonstrates that it has the resources, as well as the support of stakeholders (e.g., State educational agencies, teachers' unions), to operate the project beyond the length of the Validation grant.

(2) The potential and planning for the incorporation of project purposes, activities, or benefits into the ongoing work of the eligible applicant and any other partners at the end of the Validation grant.

Strengths

Weaknesses

7. G. Quality of the Management Plan and Personnel (up to 10 Points)

In determining the quality of the management plan and personnel for the proposed project, the Secretary considers:

(1) The adequacy of the management plan to achieve the objectives of the proposed project on time and within budget, including clearly defined responsibilities, timelines, and milestones for accomplishing project tasks, as well as tasks related to the sustainability and scalability of the proposed project.

(2) The qualifications, including relevant training and experience, of the project director and key project personnel, especially in managing complex projects.

(3) The qualifications, including relevant expertise and experience, of the project director and key personnel of the independent evaluator, especially in designing and conducting experimental and quasi-experimental studies of educational initiatives.

Strengths

Weaknesses

Competitive Preference

1. Competitive Preference 5: Innovations for Improving Early Learning Outcomes (0 or 1 Point)

We give competitive preference to applications for projects that would implement innovative practices, strategies, or programs that are designed to improve educational outcomes for high-need students who are young children (birth through 3rd grade) by enhancing the quality of early learning programs. To meet this priority, applications must focus on:

- (a) improving young children's school readiness (including social, emotional, and cognitive readiness) so that children are prepared for success in core academic subjects (as defined in section 9101(11) of the ESEA);**
- (b) improving developmental milestones and standards and aligning them with appropriate outcome measures; and**
- (c) improving alignment, collaboration, and transitions between early learning programs that serve children from birth to age three, in preschools, and in kindergarten through third grade.**

Strengths

Weaknesses

2. Competitive Preference 6: Innovations That Support College Access and Success (0 or 1 Point)

We give competitive preference to applications for projects that would implement innovative practices, strategies, or programs that are designed to enable kindergarten through grade 12 (K-12) students, particularly high school students, to successfully prepare for, enter, and graduate from a two- or four-year college. To meet this priority, applications must include practices, strategies, or programs for K-12 students that

- (a) address students' preparedness and expectations related to college;**
- (b) help students understand issues of college affordability and the financial aid and college application processes; and**
- (c) provide support to students from peers and knowledgeable adults.**

Strengths

Weaknesses

3. Competitive Preference 7: Innovations To Address the Unique Learning Needs of Students With Disabilities and Limited English Proficient Students (0 or 1 Point)

We give competitive preference to applications for projects that would implement innovative practices, strategies, or programs that are designed to address the unique learning needs of students with disabilities, including those who are assessed based on alternate academic achievement standards, or the linguistic and academic needs of limited English proficient students. To meet this priority, applications must provide for the implementation of particular practices, strategies, or programs that are designed to improve academic outcomes, close achievement gaps, and increase college- and career-readiness, including increasing high school graduation rates (as

defined in this notice), for students with disabilities or limited English proficient students.

Strengths

Weaknesses

4. Competitive Preference 8: Innovations That Serve Schools in Rural LEAs (0, 1, or 2 Points)

We give competitive preference to applications for projects that would implement innovative practices, strategies, or programs that are designed to focus on the unique challenges of high-need students in schools within a rural LEA (as defined in this notice) and address the particular challenges faced by students in these schools. To meet this priority, applications must include practices, strategies, or programs that are designed to improve student achievement or student growth, close achievement gaps, decrease dropout rates, increase high school graduation rates, or improve teacher and principal effectiveness in one or more rural LEAs.

Strengths

Weaknesses

Status: Submitted

Last Updated: 07/01/2010 6:12 PM

Status: Submitted
Last Updated: 07/02/2010 1:23 PM

Technical Review Coversheet

Applicant: Smithsonian Institution -- National Science Resources Center,LASER -
National Science Resources Center,LASER (U396B100097)

Reader #3:

	POINTS POSSIBLE	POINTS SCORED
Summary Statement		
1. Summary Statement	N/A	N/A
Selection Criteria		
1. A. Need for the Project and Quality of the Project Design (up to 20 Points)	20	16
2. B. Strength of Research, Significance of Effect, and Magnitude of Effect (up to 15 Points)	15	0
3. C. Experience of the Eligible Applicant (up to 20 Points)	20	20
4. D. Quality of the Project Evaluation (up to 15 Points)	15	0
5. E. Strategy and Capacity to Bring to Scale (up to 10 Points)	10	10
6. F. Sustainability (up to 10 Points)	10	10
7. G. Quality of the Management Plan and Personnel (up to 10 Points)	10	10
Competitive Preference		
1. Competitive Preference 5: Innovations for Improving Early Learning Outcomes (0 or 1 Point)	1	0
2. Competitive Preference 6: Innovations That Support College Access and Success (0 or 1 Point)	1	0

3. Competitive Preference 7: Innovations To Address the Unique Learning Needs of Students With Disabilities and Limited English Proficient Students (0 or 1 Point)	1	0
4. Competitive Preference 8: Innovations That Serve Schools in Rural LEAs (0, 1, or 2 Points)	2	0
TOTAL	105	66

Technical Review Form

Validation 14: 84.396B

Reader #3:

Applicant: Smithsonian Institution -- National Science Resources Center,LASER - National Science Resources Center,LASER (U396B100097)

Summary Statement

1. Summary Statement

Selection Criteria

1. A. Need for the Project and Quality of the Project Design (up to 20 Points)

In determining the need for the project and quality of the design of the proposed project, the Secretary considers the following factors:

(1) The extent to which the proposed project represents an exceptional approach to the priorities the eligible applicant is seeking to meet (i.e., addresses a largely unmet need, particularly for high-need students, and is a practice, strategy, or program that has not already been widely adopted).

(2) The extent to which the proposed project has a clear set of goals and an explicit strategy, with actions that are

(a) aligned with the priorities the eligible applicant is seeking to meet, and

(b) expected to result in achieving the goals, objectives, and outcomes of the proposed project.

(3) The extent to which the proposed project is consistent with the research evidence supporting the proposed project, taking into consideration any differences in context.

Strengths

The National Science Resources Center, a division of the Smithsonian Institution proposes to partner with 100 schools, grades 1-8, in the states of Indiana, North Carolina and Texas in the LASER model which is a coherent set of strategies designed to help districts create infrastructures that support and promote high-quality, inquiry based science instruction.

The overall purpose of the proposed project is to develop capacity for full national scale-up of the LASER model.

An initial Needs Analysis of current Science practices and procedures will be conducted at each partnering district. Both treatment and control sites will be identified. Needs Analysis will be conducted annually

Weaknesses

Treatment school teachers will receive professional development beginning in year 2 of the grant cycle, but control school teachers will need to wait until year 4 to participate.

The applicant did not include criteria for treatment sites or control sites.

The applicant provided NAEP Science results from 2005. With NCLB requiring that grades 4 and 8 be tested in Science, more recent results should have been made available.

The applicant assumes that lack of student proficiency in Science is the result of lack of teaching skills in the field of Science, and the applicant does not provide data to support that assumption.

Reader's Score: 16

2. B. Strength of Research, Significance of Effect, and Magnitude of Effect (up to 15 Points)

The Secretary considers the strength of the existing research evidence, including the internal validity (strength of causal conclusions) and external validity (generalizability) of the effects reported in prior research, on whether the proposed

project will improve student achievement or student growth, close achievement gaps, decrease dropout rates, increase high school graduation rates, or increase college enrollment and completion rates. Eligible applicants may also demonstrate success through an intermediate variable that is strongly correlated with improving these outcomes, such as teacher or principal effectiveness.

In determining the strength of the existing research evidence, the Secretary considers the following factors:

(1) The extent to which the eligible applicant demonstrates that there is moderate evidence (as defined in the Notice Inviting Applications) that the proposed practice, strategy, or program will have a statistically significant, substantial, and important effect on improving student achievement or student growth, closing achievement gaps, decreasing dropout rates, increasing high school graduation rates, or increasing college enrollment and completion rates.

(2) The importance and magnitude of the effect expected to be obtained by the proposed project, including the likelihood that the project will substantially and measurably improve student achievement or student growth, close achievement gaps, decrease dropout rates, increase high school graduation rates, or increase college enrollment and completion rates. The evidence in support of the importance and magnitude of the effect would be the research-based evidence provided by the eligible applicant to support the proposed project.

Strengths

Weaknesses

Reader's Score: 0

3. C. Experience of the Eligible Applicant (up to 20 Points)

In determining the experience of the eligible applicant, the Secretary considers the following factors:

(1) The past performance of the eligible applicant in implementing complex projects.

(2) The extent to which an eligible applicant provides information and data demonstrating that -

(a) In the case of an eligible applicant that is an LEA, the LEA has -

(i) Significantly closed the achievement gaps between groups of students described in section 1111(b)(2) of the ESEA, or significantly increased student achievement for all groups of students described in such section; and

(ii) Made significant improvements in other areas, such as graduation rates or increased recruitment and placement of high-quality teachers and principals, as

demonstrated with meaningful data; or

(b) In the case of an eligible applicant that includes a nonprofit organization, the nonprofit organization has significantly improved student achievement, attainment, or retention through its record of work with an LEA or schools.

Strengths

The NSCR , founded in 1985, has a long proven record for implementing complex, long-term projects, with satisfactory results in improving student achievement and/or increasing skill levels of teachers of Science. The district partners represent 30% of the US student population.

Weaknesses

None noted.

Reader's Score: 20

4. D. Quality of the Project Evaluation (up to 15 Points)

In determining the quality of the evaluation, the Secretary considers the following factors:

- (1) The extent to which the methods of evaluation will include a well designed experimental study or well designed quasi-experimental study.**
- (2) The extent to which the methods of evaluation will provide high-quality implementation data and performance feedback, and permit periodic assessment of progress toward achieving intended outcomes.**
- (3) The extent to which the evaluation will provide sufficient information about the key elements and approach of the project so as to facilitate replication or testing in other settings.**
- (4) The extent to which the proposed project plan includes sufficient resources to carry out the project evaluation effectively.**
- (5) The extent to which the proposed evaluation is rigorous, independent, and neither the program developer nor the project implementer will evaluate the impact of the project.**

Strengths

Weaknesses

Reader's Score: 0

5. E. Strategy and Capacity to Bring to Scale (up to 10 Points)

In determining the quality of the strategy and capacity to bring the proposed project to scale, the Secretary considers:

(1) The number of students proposed to be reached by the proposed project and the capacity of the eligible applicant and any other partners to reach the proposed number of students during the course of the grant period.

(2) The eligible applicant's capacity (e.g., in terms of qualified personnel, financial resources, or management capacity) to bring the proposed project to scale on a State or regional level (as appropriate, based on the results of the proposed project) working directly, or through other partners, either during or following the end of the grant period.

(3) The feasibility of the proposed project to be replicated successfully, if positive results are obtained, in a variety of settings and with a variety of student populations. Evidence of this ability includes the availability of resources and expertise required for implementing the project with fidelity, and the proposed project's evidence of relative ease of use or user satisfaction.

(4) The eligible applicant's estimate of the cost of the proposed project, which includes the start-up and operating costs per student per year (including indirect costs) for reaching the total number of students proposed to be served by the project. The eligible applicant must include an estimate of the costs for the eligible applicant or others (including other partners) to reach 100,000, 250,000, and 500,000 students.

(5) The mechanisms the eligible applicant will use to broadly disseminate information on its project to support further development, expansion, or replication.

Strengths

The overall purpose of the proposed project is to develop capacity for full national scale-up of the LASER model.

The project will impact 75,000 students in grades 1-8 in 3 states, 3000 teachers and 300 principals at the cost of \$30,697,329.

The NSRC has the obvious capacity to bring expertise, financial resources, prestige and credibility to this project.

The project will be disseminated through traditional published materials, Smithsonian Institutes, conferences, professional teacher organizations and state science action committees.

Weaknesses

None noted.

Reader's Score: 10

6. F. Sustainability (up to 10 Points)

In determining the adequacy of resources for the proposed project, the Secretary considers the following factors:

(1) The extent to which the eligible applicant demonstrates that it has the resources, as well as the support of stakeholders (e.g., State educational agencies, teachers' unions), to operate the project beyond the length of the Validation grant.

(2) The potential and planning for the incorporation of project purposes, activities, or benefits into the ongoing work of the eligible applicant and any other partners at the end of the Validation grant.

Strengths

The overall purpose of the proposed project is to develop capacity for full national scale-up of the LASER model.

The NSRC has the obvious capacity to bring expertise, financial resources, prestige and credibility to sustain this project.

The applicant provides a solid sustainability plan which includes provision of updated materials at the close of this project, a cultivated network of professional development experts who are trained in LASER PD programs,

The project is supported by a web of stakeholders from government, higher education, business and communities local to the participating states.

Weaknesses

None noted.

Reader's Score: 10

7. G. Quality of the Management Plan and Personnel (up to 10 Points)

In determining the quality of the management plan and personnel for the proposed project, the Secretary considers:

(1) The adequacy of the management plan to achieve the objectives of the proposed project on time and within budget, including clearly defined responsibilities,

timelines, and milestones for accomplishing project tasks, as well as tasks related to the sustainability and scalability of the proposed project.

(2) The qualifications, including relevant training and experience, of the project director and key project personnel, especially in managing complex projects.

(3) The qualifications, including relevant expertise and experience, of the project director and key personnel of the independent evaluator, especially in designing and conducting experimental and quasi-experimental studies of educational initiatives.

Strengths

The evaluation will be led by researchers at the Center for Research and Educational Policy who will work with the Texas Institute for Measurement, Evaluation and Statistics, the University of Houston, Indiana University, and the University of North Carolina.

The applicant successfully demonstrated NSRC's capacity to manage complex projects on time and within budget by identifying various other projects that the NSRC is currently administrating.

The applicant clearly articulated the responsibilities, timelines and tasks for the project.

The key personnel are eminently qualified to conduct the requirements of this grant

Weaknesses

None noted.

Reader's Score: 10

Competitive Preference

1. Competitive Preference 5: Innovations for Improving Early Learning Outcomes (0 or 1 Point)

We give competitive preference to applications for projects that would implement innovative practices, strategies, or programs that are designed to improve educational outcomes for high-need students who are young children (birth through 3rd grade) by enhancing the quality of early learning programs. To meet this priority, applications must focus on:

(a) improving young children's school readiness (including social, emotional, and cognitive readiness) so that children are prepared for success in core academic

subjects (as defined in section 9101(11) of the ESEA);
(b) improving developmental milestones and standards and aligning them with appropriate outcome measures; and
(c) improving alignment, collaboration, and transitions between early learning programs that serve children from birth to age three, in preschools, and in kindergarten through third grade.

Strengths

Weaknesses

Reader's Score: 0

2. Competitive Preference 6: Innovations That Support College Access and Success (0 or 1 Point)

We give competitive preference to applications for projects that would implement innovative practices, strategies, or programs that are designed to enable kindergarten through grade 12 (K-12) students, particularly high school students, to successfully prepare for, enter, and graduate from a two- or four-year college. To meet this priority, applications must include practices, strategies, or programs for K-12 students that

- (a) address students' preparedness and expectations related to college;
- (b) help students understand issues of college affordability and the financial aid and college application processes; and
- (c) provide support to students from peers and knowledgeable adults.

Strengths

Weaknesses

Reader's Score: 0

3. Competitive Preference 7: Innovations To Address the Unique Learning Needs of Students With Disabilities and Limited English Proficient Students (0 or 1 Point)

We give competitive preference to applications for projects that would implement innovative practices, strategies, or programs that are designed to address the unique learning needs of students with disabilities, including those who are assessed based on alternate academic achievement standards, or the linguistic and academic needs of limited English proficient students. To meet this priority, applications must provide for the implementation of particular practices, strategies, or programs that are designed to improve academic outcomes, close achievement gaps, and increase college- and career-readiness, including increasing high school graduation rates (as defined in this notice), for students with disabilities or limited English proficient students.

Strengths

Weaknesses

Reader's Score: 0

4. Competitive Preference 8: Innovations That Serve Schools in Rural LEAs (0, 1, or 2 Points)

We give competitive preference to applications for projects that would implement innovative practices, strategies, or programs that are designed to focus on the unique challenges of high-need students in schools within a rural LEA (as defined in this notice) and address the particular challenges faced by students in these schools. To meet this priority, applications must include practices, strategies, or programs that are designed to improve student achievement or student growth, close achievement gaps, decrease dropout rates, increase high school graduation rates, or improve teacher and principal effectiveness in one or more rural LEAs.

Strengths

None noted.

Weaknesses

The main thrust of this project was providing a vehicle to increase the skills of teachers of Science Competitive Preference 8: Innovations that serve schools in rural LEAs was not presented as a compelling factor in accomplishing this project.

Reader's Score: 0

Status: Submitted

Last Updated: 07/02/2010 1:23 PM

Status: Submitted
Last Updated: 06/28/2010 4:50 PM

Technical Review Coversheet

Applicant: Smithsonian Institution -- National Science Resources Center,LASER -
National Science Resources Center,LASER (U396B100097)

Reader #4:

	POINTS POSSIBLE	POINTS SCORED
Summary Statement		
1. Summary Statement	N/A	N/A
Selection Criteria		
1. A. Need for the Project and Quality of the Project Design (up to 20 Points)	20	20
2. B. Strength of Research, Significance of Effect, and Magnitude of Effect (up to 15 Points)	15	_____
3. C. Experience of the Eligible Applicant (up to 20 Points)	20	20
4. D. Quality of the Project Evaluation (up to 15 Points)	15	_____
5. E. Strategy and Capacity to Bring to Scale (up to 10 Points)	10	10
6. F. Sustainability (up to 10 Points)	10	10
7. G. Quality of the Management Plan and Personnel (up to 10 Points)	10	8
Competitive Preference		
1. Competitive Preference 5: Innovations for Improving Early Learning Outcomes (0 or 1 Point)	1	_____
2. Competitive Preference 6: Innovations That Support College Access and Success (0 or 1 Point)	1	_____

3. Competitive Preference 7: Innovations To Address the Unique Learning Needs of Students With Disabilities and Limited English Proficient Students (0 or 1 Point)	1	_____
4. Competitive Preference 8: Innovations That Serve Schools in Rural LEAs (0, 1, or 2 Points)	2	2
TOTAL	105	70

Technical Review Form

Validation 14: 84.396B

Reader #4:

Applicant: Smithsonian Institution -- National Science Resources Center, LASER - National Science Resources Center, LASER (U396B100097)

Summary Statement

1. Summary Statement

This is an excellent proposal submitted by the National Science Resources Center to extend the reach of the Leadership and Assistance for Science Education Reform (LASER) to three states with districts that have a number of high need students. The proposal specifically seeks to improve science instruction in grades 1-8.

The applicant has a strong history of success with LASER and having it successfully implemented in districts and states. The program focuses upon professional development, support, and in facilitation of sustainable programs at the local and state levels.

Selection Criteria

1. A. Need for the Project and Quality of the Project Design (up to 20 Points)

In determining the need for the project and quality of the design of the proposed project, the Secretary considers the following factors:

(1) The extent to which the proposed project represents an exceptional approach to the priorities the eligible applicant is seeking to meet (i.e., addresses a largely unmet need, particularly for high-need students, and is a practice, strategy, or program that has not already been widely adopted).

(2) The extent to which the proposed project has a clear set of goals and an explicit strategy, with actions that are

(a) aligned with the priorities the eligible applicant is seeking to meet, and

(b) expected to result in achieving the goals, objectives, and outcomes of the proposed project.

(3) The extent to which the proposed project is consistent with the research evidence supporting the proposed project, taking into consideration any differences in context.

Strengths

The applicant has supplied information from the 2005 NAEP assessment which indicate a poor performance by students in science. State data is also provided for the three affected states with the idea presented that the students that will receive the treatment program of LASER probably would have lower scores than state data because most come from districts with higher poverty rates and many high needs students.

The educational program appears very strong and the professional development components and local support provided by NSRC is appropriate. The development of the capacity for teaching science successfully and developing local stakeholder support are important components of the project design.

Clear and appropriate goals, objectives, and outcomes are presented on page 5 of the proposal.

Weaknesses

No weaknesses found.

Reader's Score: 20

2. B. Strength of Research, Significance of Effect, and Magnitude of Effect (up to 15 Points)

The Secretary considers the strength of the existing research evidence, including the internal validity (strength of causal conclusions) and external validity

(generalizability) of the effects reported in prior research, on whether the proposed project will improve student achievement or student growth, close achievement gaps, decrease dropout rates, increase high school graduation rates, or increase college enrollment and completion rates. Eligible applicants may also demonstrate success through an intermediate variable that is strongly correlated with improving these outcomes, such as teacher or principal effectiveness.

In determining the strength of the existing research evidence, the Secretary considers the following factors:

(1) The extent to which the eligible applicant demonstrates that there is moderate evidence (as defined in the Notice Inviting Applications) that the proposed practice, strategy, or program will have a statistically significant, substantial, and important effect on improving student achievement or student growth, closing achievement gaps, decreasing dropout rates, increasing high school graduation rates, or increasing college enrollment and completion rates.

(2) The importance and magnitude of the effect expected to be obtained by the proposed project, including the likelihood that the project will substantially and measurably improve student achievement or student growth, close achievement gaps, decrease dropout rates, increase high school graduation rates, or increase college enrollment and completion rates. The evidence in support of the importance and magnitude of the effect would be the research-based evidence provided by the eligible applicant to support the proposed project.

Strengths

Weaknesses

3. C. Experience of the Eligible Applicant (up to 20 Points)

In determining the experience of the eligible applicant, the Secretary considers the following factors:

(1) The past performance of the eligible applicant in implementing complex projects.

(2) The extent to which an eligible applicant provides information and data demonstrating that -

(a) In the case of an eligible applicant that is an LEA, the LEA has -

(i) Significantly closed the achievement gaps between groups of students described in section 1111(b)(2) of the ESEA, or significantly increased student achievement for all groups of students described in such section; and

(ii) Made significant improvements in other areas, such as graduation rates or increased recruitment and placement of high-quality teachers and principals, as demonstrated with meaningful data; or

(b) In the case of an eligible applicant that includes a nonprofit organization, the nonprofit organization has significantly improved student achievement, attainment, or retention through its record of work with an LEA or schools.

Strengths

The applicant has successfully implemented a number of complex projects including five major multi-year initiatives. They have managed projects that have included numerous sites, hundreds of leaders, and many partners from the public and private sectors.

The LASER program has been successfully implemented in many different districts and states with four of the states (Pennsylvania, Alabama, Washington State, and Delaware) now self-sustaining.

Higher student achievement was also documented as this applicant seems very well prepared to take on the work provided in this i3 initiative.

Weaknesses

No weaknesses found.

Reader's Score: 20

4. D. Quality of the Project Evaluation (up to 15 Points)

In determining the quality of the evaluation, the Secretary considers the following factors:

- (1) The extent to which the methods of evaluation will include a well designed experimental study or well designed quasi-experimental study.**
- (2) The extent to which the methods of evaluation will provide high-quality implementation data and performance feedback, and permit periodic assessment of progress toward achieving intended outcomes.**
- (3) The extent to which the evaluation will provide sufficient information about the key elements and approach of the project so as to facilitate replication or testing in other settings.**
- (4) The extent to which the proposed project plan includes sufficient resources to carry out the project evaluation effectively.**
- (5) The extent to which the proposed evaluation is rigorous, independent, and neither the program developer nor the project implementer will evaluate the impact of the project.**

Strengths

Weaknesses

5. E. Strategy and Capacity to Bring to Scale (up to 10 Points)

In determining the quality of the strategy and capacity to bring the proposed project to scale, the Secretary considers:

- (1) The number of students proposed to be reached by the proposed project and the capacity of the eligible applicant and any other partners to reach the proposed number of students during the course of the grant period.
- (2) The eligible applicant's capacity (e.g., in terms of qualified personnel, financial resources, or management capacity) to bring the proposed project to scale on a State or regional level (as appropriate, based on the results of the proposed project) working directly, or through other partners, either during or following the end of the grant period.
- (3) The feasibility of the proposed project to be replicated successfully, if positive results are obtained, in a variety of settings and with a variety of student populations. Evidence of this ability includes the availability of resources and expertise required for implementing the project with fidelity, and the proposed project's evidence of relative ease of use or user satisfaction.
- (4) The eligible applicant's estimate of the cost of the proposed project, which includes the start-up and operating costs per student per year (including indirect costs) for reaching the total number of students proposed to be served by the project. The eligible applicant must include an estimate of the costs for the eligible applicant or others (including other partners) to reach 100,000, 250,000, and 500,000 students.
- (5) The mechanisms the eligible applicant will use to broadly disseminate information on its project to support further development, expansion, or replication.

Strengths

The applicant has presented information that makes it clear that they will likely be very successful in bringing this program to scale. This project will include 300 schools, 75,000 students in grades 1-8, 3,000 teachers, and 300 principals in the three states served. Many partners will also be involved in helping LASER to be sustained locally after the funding period.

The applicant's management capacity is adequate to serve the project and implement the LASER model in the diverse districts that will be participating.

A cost of \$122 per student is provided along with estimates for reaching 100,000, 250,000, and 500,000 students.

Mechanisms for disseminating information on this project for expansion and replication are provided and include both traditional and technological based systems.

Weaknesses

No weaknesses found.

Reader's Score: 10

6. F. Sustainability (up to 10 Points)

In determining the adequacy of resources for the proposed project, the Secretary considers the following factors:

(1) The extent to which the eligible applicant demonstrates that it has the resources, as well as the support of stakeholders (e.g., State educational agencies, teachers' unions), to operate the project beyond the length of the Validation grant.

(2) The potential and planning for the incorporation of project purposes, activities, or benefits into the ongoing work of the eligible applicant and any other partners at the end of the Validation grant.

Strengths

The NSRC has a track record of involving significant stakeholders, both public and private, that will assist in maintaining the project after this funding period. Work processes and local involvement in site planning will also assist in addressing this need.

The applicant has indicated that information gained in conducting this project will be utilized in improving LASER and its implementation in the future.

Weaknesses

No weaknesses found

Reader's Score: 10

7. G. Quality of the Management Plan and Personnel (up to 10 Points)

In determining the quality of the management plan and personnel for the proposed project, the Secretary considers:

(1) The adequacy of the management plan to achieve the objectives of the proposed project on time and within budget, including clearly defined responsibilities, timelines, and milestones for accomplishing project tasks, as well as tasks related to the sustainability and scalability of the proposed project.

(2) The qualifications, including relevant training and experience, of the project director and key project personnel, especially in managing complex projects.

(3) The qualifications, including relevant expertise and experience, of the project director and key personnel of the independent evaluator, especially in designing and conducting experimental and quasi-experimental studies of educational initiatives.

Strengths

The management plan is well defined and is appropriate for having the project be completed on time and within budget. Key staff is very qualified and has ample experiences for managing this complex project. The existing LASER networks and professional development resources will offer a strong foundation for this project.

Timelines and responsibilities are well presented and appear realistic for implementation of the project. The involvement of stakeholders and advisory boards for each site are strong components that will assist in sustaining the project after the funding period.

Weaknesses

A major factor in this proposal that was not clearly addressed is the in classroom monitoring and mentoring of teachers as a component of the professional development program. While teacher collaboration is present, using trained professionals to serve as monitors and mentors would further enhance the desired high level of instruction in the classroom.

Reader's Score: 8

Competitive Preference

1. Competitive Preference 5: Innovations for Improving Early Learning Outcomes (0 or 1 Point)

We give competitive preference to applications for projects that would implement innovative practices, strategies, or programs that are designed to improve educational outcomes for high-need students who are young children (birth through

3rd grade) by enhancing the quality of early learning programs. To meet this priority, applications must focus on:

- (a) improving young children's school readiness (including social, emotional, and cognitive readiness) so that children are prepared for success in core academic subjects (as defined in section 9101(11) of the ESEA);**
- (b) improving developmental milestones and standards and aligning them with appropriate outcome measures; and**
- (c) improving alignment, collaboration, and transitions between early learning programs that serve children from birth to age three, in preschools, and in kindergarten through third grade.**

Strengths

Weaknesses

2. Competitive Preference 6: Innovations That Support College Access and Success (0 or 1 Point)

We give competitive preference to applications for projects that would implement innovative practices, strategies, or programs that are designed to enable kindergarten through grade 12 (K-12) students, particularly high school students, to successfully prepare for, enter, and graduate from a two- or four-year college. To meet this priority, applications must include practices, strategies, or programs for K-12 students that

- (a) address students' preparedness and expectations related to college;**
- (b) help students understand issues of college affordability and the financial aid and college application processes; and**
- (c) provide support to students from peers and knowledgeable adults.**

Strengths

Weaknesses

3. Competitive Preference 7: Innovations To Address the Unique Learning Needs of Students With Disabilities and Limited English Proficient Students (0 or 1 Point)

We give competitive preference to applications for projects that would implement innovative practices, strategies, or programs that are designed to address the unique learning needs of students with disabilities, including those who are assessed based on alternate academic achievement standards, or the linguistic and academic needs of limited English proficient students. To meet this priority, applications must provide for the implementation of particular practices, strategies, or programs that are designed to improve academic outcomes, close achievement gaps, and increase college- and career-readiness, including increasing high school graduation rates (as defined in this notice), for students with disabilities or limited English proficient students.

Strengths

Weaknesses

4. Competitive Preference 8: Innovations That Serve Schools in Rural LEAs (0, 1, or 2 Points)

We give competitive preference to applications for projects that would implement innovative practices, strategies, or programs that are designed to focus on the unique challenges of high-need students in schools within a rural LEA (as defined in this notice) and address the particular challenges faced by students in these schools. To meet this priority, applications must include practices, strategies, or programs that are designed to improve student achievement or student growth, close achievement gaps, decrease dropout rates, increase high school graduation rates, or improve teacher and principal effectiveness in one or more rural LEAs.

Strengths

This proposal will involve a number of schools with high-need students in rural and urban LEAs. Rural LEAs will be drawn from districts in Indiana and North Carolina as well as a number of high need students.

Weaknesses

No weaknesses found.

Reader's Score: 2

Status: Submitted

Last Updated: 06/28/2010 4:50 PM

Status: Submitted
Last Updated: 07/01/2010 8:52 PM

Technical Review Coversheet

Applicant: Smithsonian Institution -- National Science Resources Center,LASER -
National Science Resources Center,LASER (U396B100097)

Reader #5:

	POINTS POSSIBLE	POINTS SCORED
Summary Statement		
1. Summary Statement	N/A	N/A
Selection Criteria		
1. A. Need for the Project and Quality of the Project Design (up to 20 Points)	20	17
2. B. Strength of Research, Significance of Effect, and Magnitude of Effect (up to 15 Points)	15	_____
3. C. Experience of the Eligible Applicant (up to 20 Points)	20	20
4. D. Quality of the Project Evaluation (up to 15 Points)	15	_____
5. E. Strategy and Capacity to Bring to Scale (up to 10 Points)	10	10
6. F. Sustainability (up to 10 Points)	10	10
7. G. Quality of the Management Plan and Personnel (up to 10 Points)	10	9
Competitive Preference		
1. Competitive Preference 5: Innovations for Improving Early Learning Outcomes (0 or 1 Point)	1	_____
2. Competitive Preference 6: Innovations That Support College Access and Success (0 or 1 Point)	1	_____

3. Competitive Preference 7: Innovations To Address the Unique Learning Needs of Students With Disabilities and Limited English Proficient Students (0 or 1 Point)	1	_____
4. Competitive Preference 8: Innovations That Serve Schools in Rural LEAs (0, 1, or 2 Points)	2	2
TOTAL	105	68

Technical Review Form

Validation 14: 84.396B

Reader #5:

Applicant: Smithsonian Institution -- National Science Resources Center,LASER - National Science Resources Center,LASER (U396B100097)

Summary Statement

1. Summary Statement

The authors state that effective science education is more urgently needed now than ever. Once validated by this project, both private and public leaders will have critical questions answered and can support future expansion, thus leveraging government funding on a national dimension.

The project has a clear set of goals and an explicit strategy, with actions that are aligned with the priorities the applicant has identified.

The applicant cites the What Works Clearing House to establish the belief that inquiry-oriented instruction along with researched-based materials and professional development which is on going lead to higher levels of student learning.

Selection Criteria

1. A. Need for the Project and Quality of the Project Design (up to 20 Points)

In determining the need for the project and quality of the design of the proposed project, the Secretary considers the following factors:

(1) The extent to which the proposed project represents an exceptional approach to the priorities the eligible applicant is seeking to meet (i.e., addresses a largely unmet need, particularly for high-need students, and is a practice, strategy, or program that has not already been widely adopted).

(2) The extent to which the proposed project has a clear set of goals and an explicit strategy, with actions that are

(a) aligned with the priorities the eligible applicant is seeking to meet, and

(b) expected to result in achieving the goals, objectives, and outcomes of the proposed project.

(3) The extent to which the proposed project is consistent with the research evidence supporting the proposed project, taking into consideration any differences in context.

Strengths

The authors state that effective science education is more urgently needed now than ever to address such major issues as climate change, international/national security, conservation of resources, disease epidemics, and other health threats, trade, and more. On the 2005 U.S. National Assessment of Educational Progress (NAEP, 2005), the Nation's Report Card, only 29% of fourth graders, 29% of 8th graders and 18% of 12th graders nationally scored proficient in science (NAEP, 2005). Once validated by this project, both private and public leaders will have critical questions answered and can support future expansion, thus leveraging government funding on a national dimension.

The project has a clear set of goals and an explicit strategy, with actions that are aligned with the priorities the applicant has identified.

The applicant cites the What Works Clearing House to establish the belief that inquiry-oriented instruction along with researched-based materials and professional development which is on going lead to higher levels of student learning.

Weaknesses

The measure of improved student achievement is not clearly identified NAEP is mentioned. However NAEP does not report at the district level

(except in a few cases), school or student level the measure needs to be identified. The applicant also mentions the expectation of improved student attitudes toward science, but there is not mention of how this will be measured.

Reader's Score: 17

2. B. Strength of Research, Significance of Effect, and Magnitude of Effect (up to 15 Points)

The Secretary considers the strength of the existing research evidence, including the internal validity (strength of causal conclusions) and external validity (generalizability) of the effects reported in prior research, on whether the proposed project will improve student achievement or student growth, close achievement gaps, decrease dropout rates, increase high school graduation rates, or increase college enrollment and completion rates. Eligible applicants may also demonstrate success through an intermediate variable that is strongly correlated with improving these outcomes, such as teacher or principal effectiveness.

In determining the strength of the existing research evidence, the Secretary considers the following factors:

(1) The extent to which the eligible applicant demonstrates that there is moderate evidence (as defined in the Notice Inviting Applications) that the proposed practice, strategy, or program will have a statistically significant, substantial, and important effect on improving student achievement or student growth, closing achievement gaps, decreasing dropout rates, increasing high school graduation rates, or increasing college enrollment and completion rates.

(2) The importance and magnitude of the effect expected to be obtained by the proposed project, including the likelihood that the project will substantially and measurably improve student achievement or student growth, close achievement gaps, decrease dropout rates, increase high school graduation rates, or increase college enrollment and completion rates. The evidence in support of the importance and magnitude of the effect would be the research-based evidence provided by the eligible applicant to support the proposed project.

Strengths

Weaknesses

3. C. Experience of the Eligible Applicant (up to 20 Points)

In determining the experience of the eligible applicant, the Secretary considers the following factors:

(1) The past performance of the eligible applicant in implementing complex

projects.

(2) The extent to which an eligible applicant provides information and data demonstrating that -

(a) In the case of an eligible applicant that is an LEA, the LEA has -

(i) Significantly closed the achievement gaps between groups of students described in section 1111(b)(2) of the ESEA, or significantly increased student achievement for all groups of students described in such section; and

(ii) Made significant improvements in other areas, such as graduation rates or increased recruitment and placement of high-quality teachers and principals, as demonstrated with meaningful data; or

(b) In the case of an eligible applicant that includes a nonprofit organization, the nonprofit organization has significantly improved student achievement, attainment, or retention through its record of work with an LEA or schools.

Strengths

The NSRC states that it has consistently demonstrated the ability to create strategic regional partnerships with LEAs, higher education as well as business and government. LASER projects have been in Pennsylvania, Alabama, Washington State and Delaware.

The NSRC reports that a third party evaluation found that inquiry-based instruction, along professional development of teachers produced small but significant predictor of student performance on Washington state assessment. The applicant also cites similar evidence from Pennsylvania and California.

Weaknesses

No weaknesses noted.

Reader's Score: 20

4. D. Quality of the Project Evaluation (up to 15 Points)

In determining the quality of the evaluation, the Secretary considers the following factors:

(1) The extent to which the methods of evaluation will include a well designed experimental study or well designed quasi-experimental study.

(2) The extent to which the methods of evaluation will provide high-quality implementation data and performance feedback, and permit periodic assessment of progress toward achieving intended outcomes.

(3) The extent to which the evaluation will provide sufficient information about the key elements and approach of the project so as to facilitate replication or testing in other settings.

(4) The extent to which the proposed project plan includes sufficient resources to carry out the project evaluation effectively.

(5) The extent to which the proposed evaluation is rigorous, independent, and neither the program developer nor the project implementer will evaluate the impact of the project.

Strengths

Weaknesses

5. E. Strategy and Capacity to Bring to Scale (up to 10 Points)

In determining the quality of the strategy and capacity to bring the proposed project to scale, the Secretary considers:

(1) The number of students proposed to be reached by the proposed project and the capacity of the eligible applicant and any other partners to reach the proposed number of students during the course of the grant period.

(2) The eligible applicant's capacity (e.g., in terms of qualified personnel, financial resources, or management capacity) to bring the proposed project to scale on a State or regional level (as appropriate, based on the results of the proposed project) working directly, or through other partners, either during or following the end of the grant period.

(3) The feasibility of the proposed project to be replicated successfully, if positive results are obtained, in a variety of settings and with a variety of student populations. Evidence of this ability includes the availability of resources and expertise required for implementing the project with fidelity, and the proposed project's evidence of relative ease of use or user satisfaction.

(4) The eligible applicant's estimate of the cost of the proposed project, which includes the start-up and operating costs per student per year (including indirect costs) for reaching the total number of students proposed to be served by the project. The eligible applicant must include an estimate of the costs for the eligible applicant or others (including other partners) to reach 100,000, 250,000, and 500,000 students.

(5) The mechanisms the eligible applicant will use to broadly disseminate information on its project to support further development, expansion, or replication.

Strengths

This project is expected to impact 75,000 students in three states in the first through the eighth grade. NSRC's capacity is augmented by the Smithsonian Institution and the National Academies.

The applicant indicates that feasibility of the proposed project to be replicated successfully is an embedded objective of creating advisory boards, building corporate awareness and establishing science materials centers. NSRC indicates that it has the availability of resources and expertise required for implementing the project with fidelity, and the proposed project's evidence of relative ease of use or user satisfaction. The applicant has provided the estimated costs, per student as required.

The NSRC indicates the intent to utilize technology, as well as traditional published materials and project reports to disseminate materials.

Weaknesses

No weaknesses noted.

Reader's Score: 10

6. F. Sustainability (up to 10 Points)

In determining the adequacy of resources for the proposed project, the Secretary considers the following factors:

(1) The extent to which the eligible applicant demonstrates that it has the resources, as well as the support of stakeholders (e.g., State educational agencies, teachers' unions), to operate the project beyond the length of the Validation grant.

(2) The potential and planning for the incorporation of project purposes, activities, or benefits into the ongoing work of the eligible applicant and any other partners at the end of the Validation grant.

Strengths

NSRC reports that it has the resources, as well as the support of stakeholders to operate the project beyond the length of the Validation grant. It is indicated that the existing LASER infrastructure which has been in existence for the last 25 years is a key element. It is stated that the LASER model directly supports ongoing project sustainability. Additionally the materials and kits provided to schools are believed to be important elements to sustain the project

The NSRC indicates that when the grant period has ended, the data gathered

will be used to support the continued scale-up and of LASER in Houston, Indiana, and North Carolina.

Weaknesses

Reader's Score: 10

7. G. Quality of the Management Plan and Personnel (up to 10 Points)

In determining the quality of the management plan and personnel for the proposed project, the Secretary considers:

(1) The adequacy of the management plan to achieve the objectives of the proposed project on time and within budget, including clearly defined responsibilities, timelines, and milestones for accomplishing project tasks, as well as tasks related to the sustainability and scalability of the proposed project.

(2) The qualifications, including relevant training and experience, of the project director and key project personnel, especially in managing complex projects.

(3) The qualifications, including relevant expertise and experience, of the project director and key personnel of the independent evaluator, especially in designing and conducting experimental and quasi-experimental studies of educational initiatives.

Strengths

The management plan is well designed with timelines, and milestones for accomplishing project tasks, as well as tasks related to the sustainability and scalability of the proposed project.

The project director and key project personnel appear to have the training and experience necessary for this project and in managing other complex projects.

The independent evaluator and staff have the qualifications, including expertise and experience, in designing and conducting experimental and quasi-experimental studies of educational initiatives.

Weaknesses

What about classroom monitoring.

Reader's Score: 9

Competitive Preference

1. Competitive Preference 5: Innovations for Improving Early Learning Outcomes (0 or 1 Point)

We give competitive preference to applications for projects that would implement innovative practices, strategies, or programs that are designed to improve educational outcomes for high-need students who are young children (birth through 3rd grade) by enhancing the quality of early learning programs. To meet this priority, applications must focus on:

- (a) improving young children's school readiness (including social, emotional, and cognitive readiness) so that children are prepared for success in core academic subjects (as defined in section 9101(11) of the ESEA);**
- (b) improving developmental milestones and standards and aligning them with appropriate outcome measures; and**
- (c) improving alignment, collaboration, and transitions between early learning programs that serve children from birth to age three, in preschools, and in kindergarten through third grade.**

Strengths

Weaknesses

2. Competitive Preference 6: Innovations That Support College Access and Success (0 or 1 Point)

We give competitive preference to applications for projects that would implement innovative practices, strategies, or programs that are designed to enable kindergarten through grade 12 (K-12) students, particularly high school students, to successfully prepare for, enter, and graduate from a two- or four-year college. To meet this priority, applications must include practices, strategies, or programs for K-12 students that

- (a) address students' preparedness and expectations related to college;**
- (b) help students understand issues of college affordability and the financial aid and college application processes; and**
- (c) provide support to students from peers and knowledgeable adults.**

Strengths

Weaknesses

3. Competitive Preference 7: Innovations To Address the Unique Learning Needs of Students With Disabilities and Limited English Proficient Students (0 or 1 Point)

We give competitive preference to applications for projects that would implement innovative practices, strategies, or programs that are designed to address the unique learning needs of students with disabilities, including those who are assessed based

on alternate academic achievement standards, or the linguistic and academic needs of limited English proficient students. To meet this priority, applications must provide for the implementation of particular practices, strategies, or programs that are designed to improve academic outcomes, close achievement gaps, and increase college- and career-readiness, including increasing high school graduation rates (as defined in this notice), for students with disabilities or limited English proficient students.

Strengths

Weaknesses

4. Competitive Preference 8: Innovations That Serve Schools in Rural LEAs (0, 1, or 2 Points)

We give competitive preference to applications for projects that would implement innovative practices, strategies, or programs that are designed to focus on the unique challenges of high-need students in schools within a rural LEA (as defined in this notice) and address the particular challenges faced by students in these schools. To meet this priority, applications must include practices, strategies, or programs that are designed to improve student achievement or student growth, close achievement gaps, decrease dropout rates, increase high school graduation rates, or improve teacher and principal effectiveness in one or more rural LEAs.

Strengths

The project is intended to improve teacher effectiveness and student achievement in rural schools. The realities in rural communities demonstrate the need to address systems of coordination to support student achievement and teacher effectiveness. The project intends to provide rural teachers the opportunity for professional development using a research-based approach to science. The project provides an avenue toward establishing a professional learning community that allows for collaboration among otherwise isolated rural teachers and administrators. Teachers will receive instructional materials and materials support systems not often available in rural localities. Participation in this project creates and sustains a supply of materials and provides high-quality professional development to this underserved population.

Weaknesses

Reader's Score: 2

Status: Submitted

Last Updated: 07/01/2010 8:52 PM