Education Supports and Innovative Practices Branch
Supports and Improvement Resources Workgroup

Specific and Innovative Improvement Practices Grant

For more information contact:

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Grant Period: August 15, 2013 – June 30, 2014

The grant application is due by
Monday, July 26, 2013 at 4 PM EST

No faxed or late responses will be accepted

2013 Specific and Innovative Improvement Practices Grant Information

Background
The Delaware Department of Education (DDOE) is seeking applications for a grant opportunity for LEAs to develop and/or implement specific, promising innovative improvement practices and projects that support increased academic student growth.

Purpose:
- Provide opportunity for innovative and promising **teacher-led** projects that drive improved student outcomes;
- Provide opportunity for innovative and promising projects for strong **common core implementation** and **assessment**;
- Provide opportunity for innovative and promising projects around **student supports** and dramatically improved **school climate**; and/or
- Provide opportunity for innovative and promising strategies to **accelerate** underachieving groups of students.

Funds awarded are for implementation during the 2013-2014 school year and contingent upon availability in the final approved FY14 Budget Act. The grant recipient will be expected to provide information on the outcome of the practice or initiative to our other LEAs and schools.

Eligible Applicants
All Delaware LEAs and schools are eligible to apply. An LEA must submit on behalf of any of its schools.

Awards Amounts
Grant awards are for FY14 with funds expiring at the end of the June 2014. The maximum funding request is $150,000 per grant initiative; however, the Department expects most applications to range between $5,000 and $50,000. The Delaware Department of Education reserves the right to negotiate grant award amounts. It is the LEAs responsibility to ensure all appropriate state procurement procedures are followed.

Non-Discrimination Statement
The Delaware Department of Education does not discriminate on the basis of race, color, religion, national origin, sex, sexual orientation, marital status, disability, age, genetic information or Vietnam Era veteran's status in employment, or its programs and activities.

Submission of Grant Application
Grant applications must be typed. Narrative must use single line spacing and a point font size of 10. Each section of the required components of the grant application must be used as a header. All pages should be prepared with all pages one-sided and numbered. The header for each section should be in bold font.

The total grant application cannot exceed nineteen (19) pages, excluding the assurances and certifications of compliance. Applicants may only attach required documents as outlined in the grant application. Other supplementary materials and attachments are not allowed, will not be reviewed or returned.

Grant applications will be reviewed as submitted with no late revisions accepted. Incomplete grant applications or grant applications exceeding the page limit will not be reviewed or considered for funding.

All proposals must be submitted **electronically** to John Hulse john.hulse@doe.k12.de.us by sending the Grant as a Microsoft Word document or scanned PDF attachment.

Grant Application Deadline
The deadline for the Delaware Department of Education's Specific and Innovative Improvement Practices Grant is **Monday, July 26, 2013 4 PM EST**. Emails with the grant attachment must be sent by this day and time.

Grant Application Review Process
The review of grants will be a two-part process:
Pre-review

Written applications shall be prescreened for submission requirements and inclusion of all required sections, including budget pages and assurance and certifications of compliance. Applications not meeting all submission requirements will not be reviewed. The grant applicant will be notified.

Review

Eligible applications will then be reviewed, scored, and vetted using the Specific and Innovative Improvement Practices scoring rubric for funding.

Reporting Requirements

Recipients of a grant will be required to submit the following:

- A mid-year report in January 2014;
- An Evaluation Report by August 30, 2014. The Evaluation Report must at a minimum include the number of students served, the number of students planning to continue to use the grant initiative, a description of the outcomes of any provided professional development and the plan to sustain the project, if sustainability is being sought.

Report any circumstance that may jeopardize the operation of the initiative, including financial difficulty immediately.

Where to Obtain Assistance

The instructions contained in these materials are issued by the Delaware Department of Education, which is the sole point of contact in the state for this program. Questions regarding applications or requests for technical assistance should be directed to John Hulse via email to john.hulse@doe.k12.de.us.

Awards Final

Decisions regarding applications selected for award are final. There is no appeals process.

2013 Specific and Innovative Improvement Practices Grant Information

Grant Components:
Section I : Grant Information and Summary

4 points

- Fill out the following information:

Project Title: A.I. DuPont Astronomy Cooperative Initiative
LEA: Red Clay Consolidated School District
Address: 1502 Spruce Avenue
City, State: Wilmington, DE
Zip: 19805
Contact Name: Edward J. McGrath
Telephone Number: (302) 552-3700
Fax Number: (302) 992-7827

Project School(s) : A.I. DuPont High School
Address: 50 Hillside Road
City, State: Wilmington DE
Zip: 19807
Contact Name: Victor Leonard Sr.
Telephone Number: (302) 651-2626
Fax Number: (302) 651-2757

A.I. DuPont Middle School
Address: 3130 Kennett Pike
City, State: Wilmington, DE
Zip: 19807
Contact Name: Jerome Hill
Telephone Number: (302) 651-2690
Fax Number: (302) 425-4585

Lead Contact Person: Edward J. McGrath
E-mail Address: edward.mcgrath@redclay.k12.de.us
Phone Number: (302) 552-3768

Grant Start Date: **Approximately August 15, 2013**
Grant End Date: **June 30, 2014**
Amount Requested: $39,000

- Briefly describe the scope, targeted population and intended impact of the project.

One page limit for this section

This project will create a cooperative high school/middle school partnership within our district that will allow rising 7th and 8th graders at A.I. DuPont Middle School to work with students at A.I. DuPont High School l to create public presentations (public usage nights) throughout the school year centered around astronomy and Earth resources.

The Spitz® Planetarium at A.I. DuPont Middle was built in 1963 and renovated to "like new" condition in 2012. Eighth grade science teacher Jerome Hill has used the planetarium in his science classes since it was renovated, and plans to create an after-school astronomy club for the students at A.I. DuPont Middle

The observatory on the roof of A.I. DuPont High School houses a ten-inch Cassegrain reflecting telescope that was installed in 1973. This is the only public observatory in the state. Victor Leonard Sr., Earth Science teacher at the high school, has sponsored an evening astronomy club at the high school for nine years. Although the telescope is in good shape, the dome is in need of extensive repairs. After consulting with the maintenance crew in Red Clay, it would be more economical and safe to replace the existing metal dome with a new fiberglass dome than it would be to repair the old dome. The goal of this club will be for students to create public planetarium exhibitions throughout the school year. The dome is not accessible to the school's disabled population. These students could benefit from using digital imagery to providing students and community members who have limited access to resources with new opportunities.

Upon installing the replacement dome, the two schools would establish a cooperative astronomy club to provide all students with the opportunity to prepare one public presentation at the observatory and one at the planetarium throughout the school year. Advisors will aid students in the creation of school exhibits to create interest within the school. All students would benefit from the following experiences:

- Using technology and research of astronomical phenomena to prepare presentations to the student body at each school and to the community (curatorship)
- Developing a business plan to promote and fund (in part) these presentations . as well as to support and maintain facilities for future students within the program. (entrepreneurship)
- Providing middle school students the opportunity to collaborate with high school students from a feeder school to prepare for the rigors of high school (mentoring)
- Expose urban students to new fields in science. (Real Life Opportunities)

Grant funds will pay for renovations to the observatory dome, service contract for the planetarium, EPER salaries for teachers at both schools, after school buses to transport students between the two schools, travel to a national conference for club sponsors at each school, and materials needed for public presentations.

Section II: Needs Assessment **20 points**

- Identify the target population, describes the needs for the project, and provides supporting data as evidence.

Target Population:

1) Students from A.I. DuPont Middle school in grades 7 and 8.

Low Income: 86.4 %
AYP: not met in 2012

(Source:School profile from Delaware Department of Education:
http://profiles.doe.k12.de.us/SchoolProfiles/School/Default.aspx?checkSchool=274&districtCode=32)

2013 DCAS math (8th grade): 57 % proficient (district average = 71 %)
2013 DCAS reading (8th grade): 50 % proficient (district average = 76 %)
2013 DCAS science (8th grade): 13 % proficient (district average = 46 %)

(Source: Delaware Comprehensive Assessment System online: http://de.portal.airast.org)

2) Students from A.I. DuPont High School in grades 11 and 12

Low Income: 44 %
AYP: not met in 2012

(Source:School profile from Delaware Department of Education:
http://profiles.doe.k12.de.us/SchoolProfiles/School/Default.aspx?checkSchool=292&districtCode=32)

2013 DCAS math (10th grade): 71 % proficient (district average = 68 %)
2013 DCAS reading (10th grade): 73 % proficient (district average = 70 %)
2013 DCAS science (10th grade): 33 % proficient (district average = 41 %)

(Source: Delaware Comprehensive Assessment System online: http://de.portal.airast.org)

Gaps in resources/programming:

A.I. DuPont Middle School is home to a 1963 Spitz A3P planetarium. This instrument had fallen into disrepair, but was renovated in 2012 and is now fully functional. Students at the school perform considerably lower on the reading, mathematics, and science DCAS than their counterparts in Red Clay (see above). The Next Generation Science Standards in middle school emphasize the development and use of models to explain the motions of objects in the Solar System and in galaxies as well as patterns and systems that govern the Earth and other objects in space (http://www.nextgenscience.org/msess-ss-space-systems). Although our present curriculum in earth and space science provides sufficient content for students to achieve the Earth and Space Science standards, the need this population has demonstrated for equipment specifically designed to promote presentation and context-based calculations warrants using this unique resource.

A.I. DuPont High School is home to a ten inch Cassegrain reflecting telescope that was installed on the roof of the school in 1973. The school has used the telescope to enrich the Earth/Space science course offered to students by providing night time “skywatches.” The telescope is in good shape, but the dome housing the scope is in disrepair. A recent evaluation of the dome and accompanying motors has shown that replacing the dome with a fiberglass model would be more cost effective than repairing the 40 year old structure. Despite the poor condition of the dome, A.I. DuPont High School has sponsored an evening astronomy club for the past nine years, including stargazing events offered to students from Gateway Charter School. However, the condition of the dome has prevented further experiences of this nature from occurring. The motors opening and closing the opening as well as those motors which rotate the opening are worn down. The outside conditions (weather, birds) have damaged parts of the dome, preventing its use.

Link the identified needs to the desired project outcomes

The goal of refreshing both structures will be to create weekly after-school programs at the high school and the middle school. The two programs would share meeting places so that high school students would work with middle school students to prepare and present planetarium shows as well as observatory stargazing events. Students at both schools will engage in speech and language practices as well as mathematical practices required by the Common Core State Standards (http://www.corestandards.org/) . Each school will offer two events during the 2013-2014 school year, open to the public. Students will plan the events and collect fees to be saved in an internal account. These fees will be used to maintain both structures for future use, and to prepare displays for students in the schools. These events and displays will expose children in urban settings (from both schools) to how scientists and engineers investigate, report, and present their findings.

Linda D'Acquisto of Kids Curators LLC has shown that student-created museums and exhibitions combine academic and creative learning as well as connecting students with the community (D'Acquisto, 2013; D'Acquisto, 2006). The planetarium and the observatory are a variety of museum-based experience that will require students to

1) Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations (Common Core State Standards College/Career Readiness Anchor Standard: Speech/Language #5)
2) Model with mathematics (Common Core State Standards Mathematical Practice #4)
3) use appropriate tools strategically (Common Core State Standards Mathematical Practice #5)
4) Developing and using models (Next Generation Science Standards Science Practice # 2)
5) Constructing explanations (for science) and designing solutions (for engineering) (Next Generation Science Standards Science Practice # 6)
6) Obtaining, evaluating, and communicating information (Next Generation Science Standards Science Practice # 8)

Finally, this cooperative after-school experience will provide a high school/middle school interaction by which rising middle school students from a high poverty school will work with students from the nearby high school on a common project. The use of peer tutoring, especially when there is a slight difference in ages of tutors and students, is a powerful strategy for teaching both sets of students self-reliance, and overall achievement, with an effect size of 0.55 (Hattie, 2009). Hartley (1977) found that cross-age tutors were more effective than same-age tutors or adult tutors. Furthermore, peer tutoring was most effective when it supplemented the role of the teacher rather than replacing the teacher's role.

Detail how representatives of the targeted population provided input into the needs assessment process.

A.I. DuPont Middle: Mr. Hill arranged for the repair and preparation for the Spitz A3P planetarium. Through funding through the Red Clay Consolidated School District, the planetarium globe and projector were repaired and cleaned after more than twenty-five years of disrepair. Mr. Hill has been trained to use the planetarium to project a variety of displays, and has conferred with Dr. Hank Bouchelle, retired planetarium director from Calvin McCullough Middle School to obtain lesson plans for planetarium shows. Mr. Hill is hoping to recruit students for this after-school program who will prepare planetarium shows for the A.I. DuPont Middle student body as well as for the community. Because many of the students at A.I. DuPont Middle live in the city of Wilmington, they rarely get to see an unobstructed view of the night-time sky because of "light pollution" common to many urban environments. The planetarium affords Wilmington residents the opportunity to see the night-time sky as it appeared before industrialization.

A.I. DuPont High: Mr. Leonard has been responsible for many science based renovations in his eleven years at A.I. DuPont High School. Most recently, he has established a fish pond on the grounds and renovated a disused greenhouse to grow plants with his Environmental Science classes to be sold to the public. Although the dome of the observatory has been wearing down because of the effects of age and outdoor weather conditions, Mr. Leonard has created an astronomy club on a volunteer basis that has some experience in putting on public presentations. Mr. Leonard reached out to district personnel for assistance in repairing the dome, but the repairs needed to bring a 1973 dome to state-of-the-art condition

are prohibitive. Furthermore, positioning the needed scaffolding to effect the repairs would be unsafe. We determined that the most practical solution would be to replace the dome with a modern on made of fiberglass (instead of aluminum, like the existing one). These domes are sturdy, long lasting, and light weight.

Both Mr. Hill and Mr. Leonard have received support from Edward McGrath, Science Supervisor, as well as David Groski of the Delaware Astronomical Society. Dr. Groski has provided materials and repairs to both facilities free of charge. Red Clay is grateful for Dr. Groski's time and input to our schools.

References:

D'Acquisto, L. (2013) "Museums at School" retrieved from *Educational Leadership,* volume 70, number 5, February 2013. Alexandria, VA, Association for Supervision and Curriculum Development.

D'Acquisto, L. (2006) *Learning On Display: Student-Created Museums that Build Understanding*. Alexandria, VA, ASCD Press.

Hartley, S.S. (1977) *Meta-analysis of the Effects of Individually Paced Instruction in Mathematics*. University of Colorado at Boulder, CO

Hattie, J. (2009). *Visible Learning*. London, England, Routledge, Taylor & Francis Group.

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2013 Specific and Innovative Improvement Practices Grant Information

Goals and purposes of the grant:

1) To provide funding to teachers to create and sustain an after-school astronomy program at two neighboring schools that will include high school/middle school collaboration of students on a series of public presentation opportunities at both institutions. This collaboration model will be targeted to students at both schools who generally do not participate in after-school activities and to students identified as low performing by standardized test scores (DCAS reading and math. For A.I. DuPont High, DCAS science).

2) To provide funding for transportation between the two schools after school for effective high school/middle school collaboration.

3) To replace the dome on the A.I. DuPont High School observatory and make other necessary repairs on the dome so that the observatory can be used by students to prepare presentations.

4) To purchase a service agreement for the recently repaired A.I. DuPont Middle School planetarium to ensure that students will be able to use it to prepare public presentations.

Narrative Overview of the Program:

Needs:

1) Students at A.I. DuPont Middle School demonstrate much lower performance on DCAS reading, math, and science tests than comparable students at other district schools. Demands of Common Core State Standards will require students to prepare presentations using research strategies and a variety of digital media. Low scores on standardized tests and discussions with building leadership suggests that students will have difficulty meeting this demand without targeted extra-curricular interventions.

2) A large percentage of students at A.I. DuPont Middle School come from low income households. Many of these students live in the city of Wilmington, and have limited opportunities for outside academic enrichment experiences (e.g. museum visits, exhibitions) due to monetary constraints, transportation constraints, and other obstacles.

3) A.I. DuPont High School has a powerful reflecting telescope that has been used over the years to allow students to study many celestial phenomena. However, the dome which houses the scope is in such poor condition, the telescope cannot be used routinely for the purpose it was designed.

Objectives:

1) Selected students at A.I. DuPont Middle (chosen by student interest and identification by staff as potentially benefitting from the program) will meet weekly after school to research and prepare public presentations with the planetarium at the middle school.

2) Selected students at A.I. DuPont High (chosen by student interest and staff recommendation) will meet weekly after school to prepare public presentations with the reflecting telescope at the high school.

3) At least once per month, the two schools will combine their after-school programs so that high school students will assist middle school students with their presentations, and middle school students will be able to use the resources at the high school.

4) Each school will hold one public presentation throughout the school year using either the A.I. DuPont Middle School planetarium or the A.I. High School observatory. Students from both schools will plan the presentations. Internal accounts at both schools will be set up so that a small admission fee can be charged to guests.
5) Throughout the program, students at each school will create a school display for their own student body.
6) Students and advisors at each school will meet after each public presentation and at the end of the program to assess the success of the program and determine ways to improve.

Rationale:

- Higgins et al (2005) summarized from a review of creativity programs such as this one are correlated with positive cognitive outcomes (effect size of d=0.74). D'Acquisto (2006) states that student-created museums (such as these) "…are catalysts for student learning. These motivating classroom projects encourage students to learn new knowledge and use that knowledge creatively."

- Karcher (2005) has found that cross-age peer mentoring (high school age mentors paired with middle school age mentees) provides many social, emotional, and academic benefits for both mentors and mentees. These effects are more pronounced with low achieving mentees than with higher achieving mentees.

Purchases:

1) New dome and motors for A.I. DuPont High school observatory
2) Video equipment to allow remote viewing through telescope at A.I. DuPont High school telescope to allow access to images by students and community members with limited access to the telescope and for student creation of presentations.
3) Service plan for A.I. DuPont Middle school planetarium
4) EPER pay for teachers at both schools to run Astronomy clubs
5) Buses to transport students to the host schools for the combined meetings of Astronomy clubs.
6) Attendance at National Science Teachers Association conference in Boston MA April 3-6
7) Refreshments and advertising for public presentations.
8) Possible visits to Mt. Cuba observatory or Franklin Institute (Philadelphia PA) planetarium

Proposed Timeline: All dates (except August 30) are Mondays—assume that any day of that week may be the target date

August 30, 2013:	Funding received.
September 16, 2013:	Form Astronomy club at A.I. DuPont Middle School Order new dome for A.I. DuPont High observatory Purchase Service Agreement for A.I. DuPont Middle planetarium District holds a public reception to launch the newly renovated A.I. DuPont Middle Planetarium.
September 30, 2013	Install new dome to A.I. DuPont High Form Astronomy club at A.I. DuPont High School. Both schools hold weekly meetings.
October 21, 2013	First combined meeting of Astronomy Clubs at A.I. DuPont Middle and High. Create goals for first planetarium presentation.
November 18, 2013	Second combined meeting of Astronomy Clubs to be held at A.I. DuPont Middle. Both groups use the planetarium to create program for first public presentation.
December 16, 2013	First public presentation at A.I. DuPont Middle School planetarium.
January 20, 2014	Combined meeting of Astronomy Clubs at A.I. DuPont High. Reflections on first public presentation, planning for second public presentation.
February 17, 2014	Combined meeting of Astronomy Clubs at A.I. DuPont High. Both groups use observatory to create program for second public presentation.
April 3-6, 2014	National Science Teacher Association conference in Boston for faculty sponsors at both schools. Teachers will attend to gain professional development in using these types of facilities to foster collaborative learning opportunities.
May 12, 2014	Second public presentation at A.I. DuPont High school observatory.
After May 12, 2014	Combined meeting of Astronomy Clubs. Reflections on second public presentation. Plans for 2014-2015 activities.

Long term plans for 2014-2015:

- Increase participation in after school clubs at the schools
- Create exploratory courses and electives at the respective secondary schools to reinforce these projects.
- Create a career pathway in Earth Science/Astronomy at A.I. DuPont High School.
- Replicate the mentoring model at other district middle schools and high schools to use district resources that have traditionally not been used to engage students in low performing or disadvantaged categories. (for example: use planetarium at H.B. DuPont Middle, central courtyard for school garden at Stanton Middle, or other programs).

Deliverables:

Presentations at A.I. DuPont Middle School planetarium (December 2013) and at A.I. DuPont High School observatory (April 2014)

Measurement of successful outcomes:

- Record of student attendance at Astronomy club meetings
- Rubric of individual participation of students in presentations. Rubric will include role each student played.
- Attendance at public presentations.
- DCAS scores of participating students (A.I. DuPont Middle) fall to spring.
- Survey of students throughout the program. Survey of guests to the public presentations at the planetarium and the observatory.

Long term measurement of successful outcome:

- Monitoring success of A.I. DuPont Middle students in high school (Smarter Balanced scores, graduation rate)
- Continued participation of high school mentors.

Professional development of teachers:

- Training of use of the planetarium was provided by Spitz in 2012 when the apparatus was repaired. The service agreement will include ongoing training.

- Attendance at National Science Teacher Association conference in Boston for both teachers. Goal is to network with teachers from around the country who use these facilities and to gain expertise in collaborative presentation strategies.

- Ongoing collaboration with Delaware Astronomical Society.

References:

D'Acquisto, L. (2006) *Learning On Display: Student-Created Museums that Build Understanding*. Alexandria, VA, ASCD Press.

Higgins, S., E. Hall, V. Baumfield, & D. Mosely (2005). *A Meta-analysis of the Impact of the Implementation of thinking Skills Approaches on Pupils*. London: Social Science Research Unit, Institute of Education, University of London.

Karcher, M. J. (2005). "Cross-age Peer Mentoring." In D. L. DuBois, & M. J. Karcher (Eds.*), Handbook of youth mentoring* (pp. 266-285). Thousand Oaks, CA: Sage Publications.

Four page limit for this part of this section **24 points**

Section IV – Description of Advisory Committee Involvement **4 points**

Program Leader: Edward McGrath, Science Supervisor, Red Clay Consolidated School District

Mr. McGrath has worked with both schools to assess the state of the planetarium and the observatory. In 2012, Mr. McGrath worked with Mr. Jerome Hill and other staff at A.I. DuPont Middle School to repair the planetarium. Through funding from the district, the facility was repaired, cleaned, and made ADA compliant by installing a handicap accessible ramp. Mr. McGrath also worked with Mr. Victor Leonard Sr. and other staff at A.I. DuPont High School to assess the state of the observatory. The Red Clay Consolidated School District Department of facilities assessed the needs of the observatory in terms of repairs and sent a detailed list to Dr. Ted Ammann and Mr. McGrath. Through researching various options, Mr. McGrath and Mr. Leonard concluded that replacing the dome would be most cost effective. Mr. McGrath will coordinate the efforts of both schools.

A.I. Middle Faculty advisor: Jerome Hill, 8th grade science teacher at A.I. DuPont Middle School

Mr. Hill contacted Spitz to repair the planetarium at his school through generous funding through Dr. Ted Ammann's office. Mr. Hill worked with the custodial staff at his school to clean the room and prepare the seating for using the planetarium for public presentation. Mr. Hill has spent the 2012-2013 school year learning how to use the facility and to generate student interest in an astronomy club. Mr. Hill will be assisting in forming a Science Olympiad team which will use the planetarium to prepare for the main event in March 2014.

A.I. High Faculty advisor: Victor Leonard Sr., Earth Science/Environmental Science teacher at A.I. DuPont High School

Mr. Leonard has sponsored an informal astronomy club at A.I. High School for at least nine years, using the observatory as possible to enable students to view astronomical phenomena. Mr. Leonard has initiated many environmental initiatives at the school over the year, resulting in his being named Outstanding Environmental Educator of the Year from the Delaware Nature Society. Mr. Leonard has also assisted in coaching the school's Science Olympiad team, and will incorporate the observatory into the training for the Science Olympiad team.

Consultant from Mt. Cuba Astronomical Foundation: David Groski, Director of Mt. Cuba Astronomical Observatory Inc.

Dr. Groski has provided many hours of consultant work to both Mr. Hill and to Mr. Leonard over the years as well as providing materials to repair both the telescope and the planetarium. We invite Dr. Groski to speak to the combined groups and possibly speak at the public presentations as well as assist on an advisory basis.

A.I. High Science Department Chair: Michael Page

Mr. Page has been the science department chair of A.I. DuPont High School since 2012. Mr. Page has been involved with assessing the state of the observatory at A.I. DuPont High. In addition, Mr. Page has actively sought out community resources for the science department and supported Mr. Leonard's efforts to renovate the observatory, the greenhouse, and to build a pond on the school grounds. Mr. Page will review this application and assist with the planning of this project.

Academic Dean at A.I. DuPont Middle: Katherine Wallace

Ms. Wallace has supported all content areas at A.I. DuPont Middle for the past two years. Most recently, she reached out to Mr. McGrath and the staff at the school to create a Science Olympiad team at A.I. DuPont Middle. Ms. Wallace will review this application and assist with the planning of this project.

One page limit for this section

Section V – Description of Local Education Agency Supports **4 points**

- Planetarium at A.I. DuPont Middle School has already been fully renovated by Red Clay Consolidated School District, including installation of an ADA compatible ramp.

- Staffing: Edward McGrath, Science Supervisor, will oversee the creation of this program and these two clubs. Mr. McGrath will also collect data on the success of the program (described below).

  Faculty sponsors of the two Astronomy Clubs: Jerome Hill (A.I. DuPont Middle), Victor Leonard (A.I. DuPont High)

- Professional Development: Red Clay Consolidated School District will arrange for Mr. Hill to receive professional development on planetarium presentation from Hank Bouchelle, former planetarium director of McCullough planetarium (Mr. Hill has already begun this process with Dr. Bouchelle). Red Clay will pay for Mr. McGrath to attend the NSTA conference in Boston.

- Local funding: Red Clay department of Facilities will install the new dome on A.I. DuPont High and remove the old dome. The school district has already paid to renovate the planetarium.

One page limit for this section

Section VI: Evaluation Methods

Logic model for evaluating the effectiveness of the A.I. DuPont Astronomy Cooperative Initiative:

1) Immediate measures of success (end of 2013-2014 school year):

   - attendance at each meeting
   - success at meeting deadlines for public presentations
   - attendance at public presentations
   - survey of attendees at public presentations
   - survey of participating students at the end of the year

2) Short term measures of success (next three years after 2013-2014):

   - continued student interest in the program
   - additional public presentations
   - increased test performance of participating students on state assessments in math, ELA, and science
   - participation of middle school students in the same program at high school

3) Long term measures of success (same time period as above, and later)

   - increased graduation rate of participants
   - increased enrollment in rigorous science/math coursework (e.g. Advanced Placement courses)
   - creation of a career pathway in Earth Science/Astronomy at A.I. DuPont High
   - replication of the mentoring model at other high schools and middle schools.

Evaluation method of Project Plan:

1) Student attendance at each scheduled meeting of the Astronomy club will be submitted to Mr. McGrath bi-weekly. We hope to recruit 20 students per club by November 30 2013.

2) DCAS scores (2013-2014 year only) of A.I. DuPont Middle School students will be monitored (fall and spring) to see if preparing a public presentation geared toward astronomy has an effect on DCAS scores.

3) After each collaborative session, students will complete a survey to determine the effectiveness of a collaborative model and to inform improvements to the collaboration.

4) Both public presentations will include a survey of students and guests to determine improvements and the success of each.

5) Participating students in each program will complete a final survey to determine if the program was successful enough to repeat next year, to determine if students will participate again, and to determine what improvements will be needed.

Reporting level of attainment of objectives:

As each evaluation method above is completed, a report will be made to the Building Leadership teams of each building (by Ms. Wallace and Mr. Page).

A report will also be made to the Science Curriculum Council (Mr. McGrath) and to the Director of Curriculum and Instruction.

A final report will be made to Sam Golder, Director of Secondary Schools as a possible activity to meet Goal 4 of the Red Clay Consolidated School District Strategic Plan (Every Student Will Graduate College and Career Ready).

Reporting outcomes of professional development:

Messrs. Hill and Leonard will meet with Mr. McGrath after the NSTA conference to share resources learned and to identify outside experts that can assist with continuance of this program, possibly identifying guest speakers.

Providing information on the outcome of the initiative to other LEAs and schools:

Mr. McGrath is a member of the Delaware Science Coalition Steering Committee. This committee meets monthly. He will report on the success of the program and announce the presentations to other LEAs at these executive meetings during 2013-2014. In addition, Mr. McGrath will provide a report and photographs of the public presentations to the Governor's STEM Council during the 2013-2014 school year.

Two page limit for this section **20 points**

Section VII: Budget and Justification **16 points**

2013 Specific and Innovative Improvement Practices Grant Information

- List budget items, with sufficient detail and itemization, using the following categories as budget classifications:
    - Salaries/Employee Costs, including OECs

EPER costs: $38/hr X 2 hour sessions = $76 X 20 weeks = $1520 per teacher X 2 teachers = **$ 2921.86**

Contracted Services: To install the new dome at A.I. DuPont High School. To be paid by district.

Travel: For Mr. Leonard and Mr. Hill to attend NSTA conference in Boston:

Round trip air fare to Boston (for two adults):		$ 250
Shuttle		$70
Hotel (4 nights)	(approx. $180/night)	$1440
Conference registration		$500
Meals (April 3-5)	($46/day)	$ 276

Total: **$ 2536.00**

Supplies and Materials

Replacement of dome at A.I. DuPont High observatory:

Per Price Quote from Technical Innovations, 7851 Cessna Avenue, Gaithersburg, MD on July 10, 2013:

$ 26,025.00

Service agreement with Spitz Incorporated for Model A3P planetarium for one year:
Per quote from March 2013-February 2014 **$ 4790.00**

DSLR camera with adapters (for A.I. DuPont High telescope) **$1527.14**

Bus transportation from A.I. Dupont High to A.I. Dupont Middle (and vice-versa):

Five combined meetings: $120 per bus (one bus per meeting required) **$ 600.00**

Refreshments for public presentations: (approximately $300 per event) **$600.00**

Total amount requested: **$39,000.00**

Justification of expenditures:

EPER costs: These costs are based on the Extra Pay for Extra Responsibilities (EPER) rate budgeted in Red Clay for the 2013-2014 school year. This rate also includes Other Expense Costs (OEC). The amount assumes two teachers (Mr. Hill and Mr. Leonard) meeting for two hours a week for 20 weeks. There may be fewer weeks depending on inclement weather, scheduling issues, or other unforeseen matters.

Travel costs: This project includes travel expenses for both Mr. Hill and Mr. Leonard to attend the National Science Teacher Association national conference in Boston MA from April 3-6. This conference will focus on science and literacy as well as the relationship between engineering and science (in connection with the Next Generation Science Standards). The teachers will attend workshops by national experts on how to teach science in terms of public presentation and strategic use of equipment. In addition, they will network with planetarium directors and observatory directors from around the United States.

Costs were determined by

1) Cost of NSTA conference registration

2) average cost of two economy airline tickets between Philadelphia International Airport and Logan Airport,
3) average cost of shuttle service (includes parking at PHL),
4) meal reimbursement for three days, and
5) average cost of lodging for four nights at conference rates.

Cost of Dome replacement:

Bid obtained from Technical Innovations. The current dome above the A.I. DuPont High School observatory has rust damage to the housing. Wear on the moving parts of the motor that rotates the dome (so that various objects in the sky can be viewed) and the opening of the dome have worn to the point where metal scrapes on metal. The opening of the dome is littered with birds' nests, animal droppings, and twigs. This opening is in a location that cannot be reached without some sort of scaffolding. The shape of the dome makes clearing the debris out a safety hazard. Various other repairs need to be done on the base, but these can be done by the custodial staff at A.I. DuPont High. The state of the dome was assessed in October of 2013, and the repairs needed exceed the budget allocated for routine repairs. In addition, the scaffolding needed to effect these repairs would create a safety hazard to the workers. Finally, repairing the existing structure would only bring it to the state of operation acceptable for 1973.

The more cost-effective solution would be to remove the old dome and replace it with a modern fiberglass dome that has features to minimize environmental wear and tear.

Cost of Service agreement on planetarium:

The A.I. DuPont Middle School planetarium had sustained water damage and had fallen into a state of disrepair after twenty-five years of not being used. Red Clay spent $14,000 in 2012 to repair the unit and bring it to like-new condition. In addition, a ramp to ensure handicap accessibility was installed in 2013. This task proved difficult, since some of the replacement parts (e.g. light bulbs) are no longer made. The company that repaired the unit (Spitz, Incorporated, which was also the company from which the unit was originally purchased), quoted the district a price on a service agreement which includes a preventative service maintenance call. The quote expires in February 2014, so it makes sense for Red Clay to purchase this agreement during the first year of full operation so that any defects or problems that arose during the renovation can be corrected in a cost-effective manner. In addition, Spitz has provided Mr. Hill with training and preventive maintenance advice every time they have visited.

Cost of DSLR camera and adapter:

The access to the observatory at A.I. DuPont High school is not handicap accessible by nature of its design. In order to make sure that the information gained from the telescope can be accessed by all, a way of collecting data from the scope remotely will be necessary. The best way to collect this data and share it with those who may not be able to actually use the physical telescope would be to affix a digital single lens reflex (DSLR) camera to the scope and either take photographs of the images or to transmit images to a monitor in another location. Public presentations at A.I. DuPont High will include use of an auditorium or audion to receive these remote images as well as the telescope itself.

Cost of bus transportation:

Cost of buses is quoted from Office of transportation. The timeline features five collaborative meetings between students from A.I. DuPont High School and A.I. DuPont Middle School. The bus fees are used to transport students from one of these schools to the other. On non-collaboration days, students will take the activity buses that run at each school.

Four page limit for this section

Section VIII: Budget Summary **4 points**

2013 Specific and Innovative Improvement Practices Grant Information

Complete the Budget Summary below completely and accurately.

Delaware Department Of Education
Administrative Services Branch
Budget Summary Report Of State Funds

Business Mgr. initials when submitted as an Application Budget: -

Grant Award
Application Budget Summary

Agency:

For subgrants of State funds, no annual or final expenditure report is required. Prior notification of intent to amend is required when exceeding approved budget amounts by $1,000 or 5% whichever is greater. This budget form is required for planning purposes only and is to accompany a subgrant application for State funds when application for such funds is required

Project Title:

Grant Number:

Fund & Line:

Project Budget Period:
Beginning:
Ending:

Expenditure Accounts		Expense Classification					
Classification	Acct No	Salaries/ Employee Costs	Contracted Services	Travel	Supplies And Materials	Capital Outlay	Total Budget
1	2	3	4	5	6	7	8
Administration	100						0
Instruction	200	2240		2536	32,342.14		37118.14
Attendance Services	300						0
Health Services	400						0
Pupil Transportation Services	500		600				600
Operation Of Plant	600						0
Maintenance of Plant	700						0
Fixed Charges	800	681.86					681.86
Food Services	900				600		600
Student Body Activities	1000						0
Community Service	1100						0
Capital Outlay	1200						0
Total Budget		2921.86	600	2536	32,942.14	0	39,000
Person Completing Report:	Edward J. McGrath				Date:	July 19, 2013	

One page limit for this section

Section IX: Grant Sustainability **4 points**

After the first year, the advisory committee will review the successes and challenges of the collaborative program. Expenses for later years will involve EPER for teachers and buses. The costs of these can be maintained either by building funds or by local district funds.

Since most of the funds provided by the grant will go to replacing the dome at A.I. DuPont High School, this will be a one-time expense. Continuing the expense of the service plan for the A.I. DuPont Middle School planetarium will be decided after the first year, based on whether the use of the planetarium causes enough wear and tear in a year to warrant continuing.

The travel of the teachers to NSTA conferences is also a one-time need to provide initial training and networking.

Questions to be considered by the advisory committee:

- Was the program manageable for the number of students? Should the number be increased or decreased?
- Did the public presentations bring enough visitors to be worth continuing? Would there be a desire for more?
- What kind of maintenance do the planetarium and observatory require? Is there a need to continue the preventative maintenance plan for the planetarium?

One page limit for this section

Section X: Assurances and Certifications of Compliance *(not included in the 19 page limit)*
Below are the assurances that must be signed and dated by the Superintendent or Charter School Director. Please read all assurances carefully. These assurances dictate financial requirements that must be adhered to by the grantee. Funds will not be disbursed until and unless a signed copy of these assurances are received by DDOE. Please check the following 11 assurances, indicating your agreement:

The Applicant assures that:

☒ 1. The project or services will be administered in accordance with all applicable statutes, regulations, program plans, and applications.

☒ 2. The LEA will administer those funds and property to the extent required by the Delaware Department of Education. Grantee will retain records of its financial transactions (including receipts), accounts, project operation, and evaluation relating to this grant for a period consistent with the State's retention record. The grantee will make such records (including receipts) available for inspection and audit by authorized representatives of DDOE, or Auditor of Accounts, or Auditor of Accounts official designee.

☒ 3. The applicant will use such fiscal control and fund accounting procedures as will ensure proper disbursement of, and accounting for, funds paid to the grantee.

☒ 4. The project and services will take place in a safe and easily accessible facility.

☒ 5. The project and services provided under this subgrant will be operated so as not to discriminate on the basis of race, color, religion, national origin, sex, sexual orientation, disability, age, or genetic information.

☒ 6. Projects and services funded in total or in part through this grant will operate in compliance with current state laws and regulations.

☒ 7. All project and services staff who work with children will have undergone the requirements outlined in the Delaware Criminal Background Check for Public Schools Related Employment and Office of Child Care Licensing Regulations.

☒ 8. Grantee will receive prior written approval from the DDOE program manager before implementing any programmatic changes with respect to the purpose for which the grant was awarded. Amendment requests will be made using DDOE amendment forms submitted to the DDOE Coordinator for approval.

2013 Specific and Innovative Improvement Practices Grant Information

☒ 9. If budgeted expenditures within any reporting category of approved grant change by 5% or $1,000, or if expenditures of $1,000 or more are made within a reporting category for which no expenditures were budgeted, the subgrantee must submit an amendment for approval that briefly explains the reasons for the change(s).

☒ 10. Grantee will repay any funds that have been finally determined through the state audit process to have been misspent, unspent, misapplied, or otherwise not properly accounted for, and further agrees to pay any collection fees that may be subsequently be imposed by the state.

☒ 11. The grantee will submit an Evaluation Report by August 30, 2014. The **Evaluation Report**, which must at a minimum include the number of students served, the number of students planning to continue to use the grant initiative, a report of the level of attainment of each of the project's objectives, a description of the outcomes of any provided professional development, and the plan to sustain the project, must be submitted to the DDOE Coordinator.

We, the undersigned, certify that the information contained in this grant application is complete and accurate to the best of our knowledge; that the necessary assurances of compliance with applicable state and federal statues, rules, regulations will be met; and, that the indicated agency designated in this grant application is authorized to administer this subgrant.

We further certify that the 11 assurances listed above have been satisfied and will be adhered to, and that all facts, figures, and representation in this grant application are correct to the best of our knowledge.

Signature of:
LEA Superintendent/Charter School Director

Local Education Agency Name

Mervin B. Daugherty

Red Clay Consolidated School District

Printed Name: _Mervin B. Daugherty_____

Date: 7/19/2013

Signature of:
School Administrator

School Name

Edward J. McGrath

District Office

Printed Name: _Edward J. McGrath_____

Date: 7/19/2013