Budget

Bethel-Tate Local (046318) - Clermont County - 2014 - Straight A Fund - Rev 0 - Straight A Fund - Application Number (399)

U.S.A.S. Fund #:
Plus/Minus Sheet (opens new window)

Object Code / Purpose Code	Salaries 100	Retirement Fringe Benefits 200	Purchased Services 400	Supplies 500	Capital Outlay 600	Other 800	Total
Instruction	0.00	0.00	0.00	147,800.00	1,276,200.00	0.00	1,424,000.00
Support Services	145,518.00	22,482.00	0.00	0.00	0.00	0.00	168,000.00
Governance/Admin	0.00	0.00	262,700.00	0.00	0.00	0.00	262,700.00
Prof Development	206,388.00	41,822.00	229,765.00	0.00	0.00	0.00	477,975.00
Family/Community	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Safety	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Facilities	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Transportation	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	351,906.00	64,304.00	492,465.00	147,800.00	1,276,200.00	0.00	2,332,675.00
						Adjusted Allocation	0.00
						Remaining	-2,332,675.00

Application

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Applicants shall respond to the prompts or questions in the areas listed below in a narrative form.

A) APPLICANT INFORMATION - General Information, Experience and Capacity

1. Project Title:Building Leaders in STEM

2.Executive summary: Provide an executive summary of your project proposal and which goal(s) in question 9 you seek to achieve. Please limit your responses to no more than three sentences.

The STEM Center in Bethel, Ohio delivers a blended learning curriculum that challenges gifted students and has demonstrated success in raising achievement in fifth grade math and science. This program has received local, state, and national accolades and many schools desire to replicate this program in their districts. This grant funds the purchase of STEM equipment, the training of teachers and administrators, and development of curriculum units to replicate this program in 14 additional schools located in 6 different counties, including schools with Appalachian students, schools with rural populations, affluent schools , and schools with a high percentage of low socio-economic students.

916 3. Total Students Impacted:

4. Lead applicant primary contact: - Provide the following information:

First Name, last Name of contact for lead applicant: Melissa Kircher

Organizational name of lead applicant: Bethel-Tate Local Schools

Unique Identifier (IRN/Fed Tax ID): 046318

Address of lead applicant: 675 W. Plane St., Bethel, OH 45106

Phone Number of lead applicant: 513-734-2261

Email Address of lead applicant: kircher_m@betheltate.org

5. Secondary applicant contact: - Provide the following information, if applicable:

First Name, last Name of contact for secondary applicant: Matthew Earley

Organizational name of secondary applicant: Williamsburg Local Schools

Unique Identifier (IRN/Fed Tax ID): 046367

Address of secondary applicant: 549 W. Main Street Williamsburg, Ohio 45176

Phone number of secondary applicant: 513-724-3077

Email address of secondary applicant: earley_m@burgschools.org

6. List all other participating entities by name: Provide the following information for each additional participating entity, if applicable: Mention First Name, Last Name, Organizational Name, Unique Identifier (IRN/Fed Tax ID), Address, Phone Number, Email Address of Contact for All Secondary Applicants in the box below.

1. Doug Lantz, Edgewood Local Schools, 046094, 3440 Busenbark Road, Trenton, Ohio 45067, 513-594-1467 doug.lantz@edgewoodschools.net 2. Gail Kist-Kline, Mason Local Schools, 050450, 211 North East Street, Mason, Ohio 45040 513-229-4118 kistklineg@mason.k12.oh.us 3. Patrick O'Donnell, Indian Lake Schools, 048082, 6210 SR 235 N, Lewistown, Ohio 43337, 937-686-8601 odonnellp@ils-k12.org 4. Connie Schneider, Botkins Local Schools, 049767, PO Box 550, Botkins, Ohio 45306, 937-693-4241, schneiderc@botkins.k12.oh.us 5. Dan Holland, Fort. Loramie Schools, 049783, 575 Greenback Road, Fort Loramie, Ohio, 45845, 937-295-3931, dan.holland@loramie.k12.oh.us 6. Steve Rose, Russia Local Schools, 049817, 100 School Street, Russia, Ohio 937-526-3156, srose@russiaschool.org 7. Larry Claypool, Hardin-Houston Local Schools, 049791, 5300 Houston Road, Houston, Ohio, 45333, 937-295-3010, lclaypool@houston.k12.oh.us 8. Scott Mann, Riverside Local Schools, 048090, 2096 Co. Rd. 24 S., DeGraff, Ohio, 43318, 937-585-5981, smann@riverside.k12.oh.us 9. Jeff Langdon, Deer Park Local Schools, 043851, 4131 Matson Avenue, Cincinnati, Ohio, 45236, 513-891-0222, langdon.j@dpccsd.org 10. Glenn Moore, Felicity-Franklin Local Schools, 046334, 415 Washington Street, Felicity, Ohio 45120, 513-876-2113 mooreg@felicityschools.org 11. Ralph Shell, Clermont Northeastern Schools, 046326, 2792 US 50, Batavia, Ohio, 45103, 513-625-1211, shell_r@cneschools.org 12. Lori Lytle, Benjamin Logan Schools, 048074 4740 CR 26, Bellefontaine, Ohio 43311, 937-593-9211, lytlel@benjaminlogan.org 13. Todd Petrey, Springboro Local Schools, 050427, 1685 S. Main St., Springboro, Ohio 45066, 937-748-3960, tpetrey@springboro.org

7. Partnership and consortia agreements and letters of support: - (Click on the link below to upload necessary documents).

* Letters of support are for districts in academic or fiscal distress only. If school or district is in academic or fiscal distress and has a commission assigned, please include a resolution from the commission in support of the project.

* If a partnership or consortium will be established, please include the signed Straight A Description of Nature of Partnership or Description of Nature of Consortium Agreement.

UploadGrantApplicationAttachment.aspx

8. Please provide a brief description of the team or individuals responsible for the implementation of this project including relevant experience in other innovative projects. You should also include descriptions and experiences of partnering entities.

This project resulted from a collaboration of a team of five gifted coordinators, a math curriculum specialist and a science curriculum specialist (the "Planning Team"). The Planning Team members possess strong backgrounds in science, critical thinking, math, and STEM and bring a diverse array of expertise to the project that will be needed to support a successful STEM program. The project director, Amy Bain, is the gifted coordinator for the successful Bethel-Tate STEM program that is being replicated in the other schools. In addition, Mrs. Bain coordinates the Clermont County High School Gifted Program, which involves gifted students from six districts and developed Academic Adventures, an afterschool STEM program for students in grades 2-6, again involving multiple districts. Establishing these programs involved the procurement of several grants and the implementation of innovative projects to several districts at once. Mrs. Bain has presented her work in blended learning and gifted services at the national, state, and local levels and serves as the Region V representative of the Ohio Association for Gifted Children and a president for the Southwest Ohio Coordinators of Gifted. Mrs. Bain is heavily involved in the development of STEM curriculum through the creating of units taught at the STEM Center and served as the Sixth Grade Team Leader for developing curriculum and science lessons for the Southwest Ohio Science Institute. The science and math consultants bring a wealth of expertise. Meri Johnson, the science consultant and site coordinator for the South region, has been involved in several state and regional programs. Mrs. Johnson was the local chairman for the Regional NSTA Conference recently held in Cincinnati and coordinated eleven committees such as registration, volunteers, facilities, and hospitality. Mrs. Johnson was the SECO Conference chairman for 2013 and is serving in that role again in 2014. Mrs. Johnson was the co-director or the Southwest Ohio Science Institute which impacted 800 teachers during its five summers. The new STEMstitute, offered in June 2013, involved professional development for 80 math and science teachers and was created by Mrs. Bain and Mrs. Johnson. Both Mrs. Johnson and Mrs. Barb Weidus, the math consultant, have been involved on multiple state level programs including standards writing teams, advisory teams, and range finding committees. Mrs. Weidus has developed numerous workshops such as Fraction Bootcamp that are delivered to area schools as well as serving as a math coach. Other member of the team include: Deborah Glynn, gifted coordinator for Springboro Schools, Karen Qualls, retired gifted coordinator for Hamilton Schools, Laurie Frank, retired gifted coordinator for Sycamore Schools, and Cathy Reed, gifted coordinator for Hamilton County ESC. These gifted coordinators have implemented numerous projects such as "Destination Imagination", the "Ohio Summit", "Battle of the Brains", and "Research Expos" while coordinating services in their respective schools. In addition to these student programs, team members have extensive experience as leaders in professional development, including OTES, Diagnostic Math Assessment , Project Impact I and II, iDiscovery, Brain-Based Learning, Differentiation, and numerous math and science content workshops. These mentors, along with purchased services from curriculum and technology consultants, provide the professional development and coaching in the content areas.

B) PROJECT DESCRIPTION - Overall description of project and alignment with Outcomes

9. Which of the stated Straight A Fund goals does the proposal aim to achieve? - (Check all that apply)

- [x] Student achievement
- [x] Spending reductions in the five-year fiscal forecast
- [ ] Utilization of a greater share of resources in the classroom

10. Which of the following best describes the proposed project? - (Select one:)

- [ ] New - never before implemented
- [ ] Existing and researched-based - never implemented in your district or community school but proven successful in other educational environments
- [ ] Mixed Concept - incorporates new and existing elements

☑ Enhancing/Scale Up - elevating or expanding an effective program that is already implemented in your district, school, or consortia partnership

11. Describe the innovative project.

In fall 2010, the "Bethel-Tate STEM Center" opened its doors to serve students identified as gifted in math, reading and/or superior cognitive ability. Students in fifth grade visit the STEM Center one day each week for instruction that focuses around math challenges and STEM projects with a strong emphasis on problem-solving skills. When students leave the STEM Center, the learning continues through a blended learning model. Students have access to Moodle where they find additional resources, assignments, and discussion groups. This model of "flipping" instruction engages students in learning during the week. Results from the program have shown a significant academic improvement in science and math achievement as well as fostered a passion for STEM. The success of this program has gained local, state, and national attention and many schools have visited the site only to lament that they lacked the resources or trained staff to implement the program at their schools. The Building Leaders in STEM ("BLIS") project provides the resources and staff training necessary for districts to replicate this program. The BLIS project addresses three needs: (1) provide the technology to implement a blended learning program, (2) provide the curriculum and on-line courses for the gifted students, and (3) provide the professional development for teachers in both technology and curriculum. When each STEM Center is physically created and the gifted teachers are skilled in STEM strategies, the program will be implemented to impact the gifted students in fifteen participating districts. The fifteen participating districts from six different counties have been grouped into two regions: a South region (Butler, Warren, Hamilton and Clermont counties) and a North region (Logan and Shelby counties) and mentors have been assigned to different schools. Each region has a site manager who works with the project director to coordinate the professional development, acquisition of technology, and purchasing of materials. Beginning in January 2014, five days of professional development involving STEM strategies and technology applications will be delivered to the gifted teachers. This extensive professional development increases the likelihood of success for building the skills and content knowledge necessary to become STEM teachers. An on-line professional learning community provides on-going collaboration between the schools as teachers discuss the training and try strategies with current students. To build a broader understanding of STEM education, participants attend either the national math or science conference. In June 2014, these gifted teachers and mentors meet for two weeks of intensive training. During this time, teachers are provided with the resources (including written curriculum, science materials, and on-line courses) necessary to begin STEM instruction in the fall of 2014 for gifted fifth grade students. Gifted teachers that already teach at the Bethel-Tate STEM Center participate at an expanded capacity as they collaborate with the fifth grade math and science teachers at their schools. These math and science teachers will have training in blended learning units that compliments the gifted curriculum and incorporates the New Ohio Learning Standards. Coaches specializing in math and science will collaborate with these teachers every other week to reinforce the strategies. By working together in this multi-county, multi-school collaboration, gifted teachers will be prepared to begin a gifted program that emulates the successful STEM program currently in place in order to raise student achievement in math and science at their own schools. The learning that takes place from January through June will provide a deep sustained learning, build a network of knowledgeable colleagues, and create a professional learning community that will continue in future years.

12. Describe how it will meet the goal(s) selected above. - If school/district receives school improvement funds/support, include a brief explanation of how this project will advance the improvement plan.

The gifted program at Bethel-Tate Schools has demonstrated success in raising student achievement. This has been attributed to the creation of a "STEM Center", the establishment of a rigorous, challenging curriculum, and the professional development and experience of the gifted teachers. The goal of this project is to raise student achievement by replicating this program at 14 additional school districts throughout Ohio. This project provides an avenue for these districts to meet that goal. It was deemed more powerful to do this project as a consortia rather than a single district as much of the project depends on the professional development of the teachers and building a professional learning community to sustain support in future years. By including 15 districts, these gifted teachers, who are the sole gifted teacher in their district, now can be part of a professional learning community that together is transforming how gifted education is delivered at their schools. These teachers will begin intensive training in January 2014, attend national programs to expand their understanding of STEM education, hold on-line discussions, and learn new curriculum as colleagues. These relationships will continue long after the project ends, enhancing the sustainability of the program. The teachers in this project will be mentored by a team of gifted coordinators and curriculum specialists who bring expertise in areas necessary for implementing the STEM program. These mentors have presented workshops and trainings in a variety of instructional topics and together will deliver professional development on critical thinking strategies, content area material, and STEM strategies. Mentors will contribute to the on-line learning community as teachers discuss challenges they face or look for new ideas. As a consortia, teachers will have access to a team of mentors with a range of expertise and have opportunities that would not be available if a single district wanted to accomplish this for their teacher. Another benefit of creating a consortia is the reduction in spending. Districts benefit from the increased purchasing power as equipment and supplies are purchased in greater quantities and vendors offer discounts for larger orders. As gifted teachers become educated in successful STEM strategies and implement proved curriculum, they can share these strategies and resources to the fifth grade math and science teachers, saving money for future professional development. The on-line classes developed will belong to the districts without subscription fees or yearly renewals. Equipment in the STEM Center can be shared with other science teachers in the building and computers can be shared during testing times, saving the districts money.

C) SUSTAINABILITY - Planning for ongoing funding of the project, cost breakdown

13. Financial Documentation - All applicants must enter or upload the following supporting information. Responses should refer to specific information in the financial documents when applicable:

a. Enter a project budget

b. Upload the Straight A Financial Impact Template forecasting the expected changes to the five-year forecast resulting from implementation of this project. If applying as a consortia or partnership, please include the five-year forecasts of each school district, community school or STEM school member for review.

c. If subsection (b) is not applicable, please explain why, in addition to how the project will demonstrate sustainability and impact.

Templates have been uploaded.

14. What is the total cost for implementing the innovative project?

2,332,675.00 * Total project cost

* Provide a brief narrative explanation of the overall budget. The narrative should include the source and amount of other funds that may be used to support this concept (e.g., Title I funding, RttT money, local funding, foundation support, etc.), and provide details on the cost of items included in the budget (i.e. staff counts and salary/benefits, equipment to be purchased and cost, etc).

Fifteen districts will receive equipment and technology to establish a STEM Center. This equipment (per school) includes: $4500 for Furniture: 6 tables, 20 chairs, storage unit for student work, storage unit for science materials, and tubs for materials. $20000 for 20 laptop computers and a charging cart , $1000 for a printer and computer accessories. $1000 for computer configuration (to be done by the vendor), $7500 for a smart touch TV, $36000 for 40 Surface Pro tablets. $16400 for tablet accessories (pen, screen protector, Microsoft Office, and two years of insurance.) $1000 for an overhead microscope and document camera. Total Equipment: $87,400 Supplies: Four kits of materials that correspond to the four units for gifted teachers = $500 x 4 units x 15 districts. Four kits of materials that correspond to the fifth grade math and science units. = $500 x 4 units x 4 districts. Schools who are training gifted teachers receive $7000 for materials. Schools who are training math, science, and gifted teachers receive $9000 for materials. Unit Development: $24,000 is allocated for creating the face-to-face units and teacher guides (60 hours x 8 units x $50/hour) and $24,000 is allocated for creating the on-line courses (60 hours x 8 units x $50 All lessons will be reviewed for content accuracy by local university experts. (Four experts @$500 each). Staff Training: Training for technology support personnel (for new equipment and hardware specifications required for the tablets, computers, and smart touch TVs): $2500 per person x 15 districts Compensation for technology support to set up and configure new equipment: 10 days @ $400 x 15 districts Training for gifted teachers : (15 teachers) Registration fees for 10 days of training = $2200, STEMstitute and NSTA/NCTM (registration, travel, lodging) = $2900 University Registration Fees = $1025 for 7 credits ($875 Ashland, $150 Miami) Stipends/fringe benefits for June trainings = $1000/week = $2000 On-Line professional learning @ 4 hrs / 18 weeks @ $30 = $2160 Sub fees 5 days @ $100 = $500 For teachers at the north site (7 districts), lodging, mileage, and food allowances for June workshop and STEMstitute = $2320 Training for Math/Science Teachers: (12) STEMstitute & NSTA/NCTM (registration, travel, lodging) = $2900, Stipend /fringe benefits for June Training = $1000/week = $1000 On-Line professional learning = 4 hours / 18 weeks @ $30 = $2160 University Registration Fees = $850 /6 credits ($700 Ashland, $150 Miami) Sub fees 5 days@ $100 = $500 Mentoring Training Workshop to establish expectations for the coaching, professional development, on-line professional development community = $200/mentor Administration: Project Director (salary/benefits) - 90 days @ $450/day, Conference Fees (NSTA, NCTM, STEM) $7500, Mileage to districts = $2000, Tablet $900 South Site Director (salary/benefits) - 36 days @ $400/day to monitor the acquisition and delivery and equipment, coordinate math and science coaching and determine professional development needs; Conference Fees (NSTA, NCTM, STEM) $7500; Mileage to districts - $2000, Tablet $900 North Site Co-Directors(2) (salary/benefits) 36 days @ $400 to monitor the acquisition and delivery and equipment, support gifted teacher learning and determine professional development needs; Conference Fees (NSTA or NCTM, STEM) $5000; Mileage to districts - $3000; Tablet- $900 - Curriculum Development Leader - 32 days @ $400/ day - Mentors (4 people) - Training workshops / site visits 15 days @ $350, Conference Fees = $5400, On-Line Collaboration 2 hrs / week x 18 weeks @ $50 = $1800, Tablet $900 Technology Coordinator - 10 days @ $400, Program Evaluator - 5% of services, $84,700 Grant Writer - 1% of Grant, $22,500, Fiscal Agent - 3% of Grant $67,500 Math and Science coaches - 18 days @ $350 x 2 coaches

15. What **new/recurring costs** of your innovative project will continue once the grant has expired? If there are no new/recurring costs, please explain why.

0.00 * Specific amount of new/recurring cost (annual cost after project is implemented)

* Narrative explanation/rationale: Provide details on the cost of items included in the budget (i.e. staff counts and salary/benefits, equipment to be purchased and cost, etc.). If there are no new/recurring costs, please explain why.

The focus of this project is to raise students achievement by replicating the successful program at Bethel-Tate STEM Center. In order to implement this program in 14 additional districts, each district needs the equipment necessary to create a STEM classroom, challenging curriculum in a blended format that includes both instruction for face-to-face classes and on-line learning, and teachers who are trained in both the technology and curriculum. The professional learning community will provide support as the program is implemented and be vital in the future to provide sustainability. Funding of the BLIS project gives schools the opportunity to meet these start-up needs so that the gifted STEM program can be fully implemented in Fall 2014. After the completion of the project in Spring 2014, schools will have no new recurring costs. The teachers implementing the new program are already on staff and in the budget. Technology set-up costs will have been covered by the grant and any follow-up maintenance will be delivered by the technology staff employed by the districts already. On-line courses will be owned by the districts with no subscription fees or recurring costs. Professional development costs will be incurred by the end of June and each district will continue to have access through their school gifted coordinator for continued mentoring along with the established professional community. The STEM classroom will be set up and armed with the materials, supplies, equipment and curriculum units needed to implement the program in Fall 2014. The STEM classroom and trained teachers will be able to function in the following years with no additional costs to the districts.

16. Are there **expected savings** that may result from the implementation of the innovative project?

1,311,000.00 * Specific amount of expected savings (annual)

* Narrative explanation/rationale: Provide details on the anticipated savings (i.e. staff counts and salary/benefits, equipment to be purchased and cost, etc.)

- Districts save money as the project is implemented. As a consortia, money will be saved as technology and equipment is purchased. (An estimated savings of at least 10% on purchased equipment would equate to $8,700 per district) - Professional development costs are shared as teachers are trained as a cohort which saves the district money as these teachers learn strategies to raise student

achievement. These teachers participate in professional learning communities after the grant ends, which saves money as teachers receive professional development without additional costs into the 2014 school year. (One day of professional development = $200 per teacher + sub fee of $100 = $300/teacher) - These trained gifted teachers can provide professional development in upcoming years for the math and science teachers in their districts with the STEM classroom lessons being modeled. Based on a rate of $200/day for professional development, schools could save between $400 - $2000 for math and/or science teachers in fifth grade. Many of these strategies can be used for other grade levels, making the possible savings even greater. - Computers can also be used for state testing, saving the districts the need to purchase additional computers. ($20,000) - Each district receives curriculum that introduces blended learning and on-line courses that will be perpetual with no licensing fees. Based on the estimated cost of $10,000 - $50,000 for an on-line course (times 4 courses) a district saves $40,000 - $200,000 for the gifted courses. - With a blended learning curriculum, students continue to learn without direct instruction of a teacher. If every instructional hour that occurs without a teacher is valued at $50/hour, students participating 2 hours per week on-line for 36 weeks would save districts $3600 per student. For small districts with five students, this amounts to $18,000. Larger districts would save even more.

17. Provide a brief explanation of how the project is self-sustaining. If there are ongoing costs associated with the project after the term of the grant, this explanation should provide details on the cost reductions that will be made that are at least equal to the amount of new/recurring costs detailed above. If there are no new/recurring costs, explain in detail how this project will sustain itself beyond the life of the grant.

To begin implementation of the STEM program, schools need an equipped classroom and trained staff. Funding for the BLIS project provides districts the resources necessary to obtain these components and be sustainable. This BLIS project provides the equipment necessary with no new or recurring costs after the grant. The trained staff is already employed by the schools so there is no additional staff added to the school salary budget. The on-line courses are downloaded to the schools with no subscription fees or yearly costs. The curriculum will be sustainable as it will already be aligned to the Ohio New Learning Standards and will not need to be revisited or edited. Not only will this program be sustainable, some of the components (especially instructional strategies for math, science, and critical thinking) can be shared with typical classroom teachers and could become a critical component of school wide curriculum in the future.

D) IMPLEMENTATION - Timeline, communication and contingency planning

18. Fill in the appropriate dates and an explanation of the timeline for the successful implementation of this project. In each explanation, be sure to briefly describe the largest barriers that could derail your concept or timeline for implementation and your plan to proactively mitigate such barriers. In addition, the narrative should list the stakeholders that will be engaged during that stage of the project and describe the communication that occurred as the application was developed.

Describe the ongoing communication plan with the stakeholders as the project is implemented. (Stakeholders can include parents, community leaders, foundation support and businesses, as well as educational personnel in the affected entities.)

* Proposal Timeline Dates

Plan (MM/DD/YYYY): 10/05/2013 - 12/31/2013

* Narrative explanation

- Planning for this project began on October 5, when the seven members of the Planning Team met to discuss the BLIS grant and how it would impact student achievement in different districts around Ohio. Participating districts have been matched with a mentor who oversees the implementation of the program in their district(s). The mentors are primarily the gifted coordinators who are already familiar with the operations of the districts and the gifted teachers. During this period, mentors establish the STEM classroom at their district(s) and work collaboratively to coordinate the professional development for the gifted teachers. Rooms have been reserved for the professional development and for storage of purchased materials. Services for professional development, program evaluation, unit development will be contracted. Bids from vendors will be collected in preparation of the equipment acquisitions.

Implement (MM/DD/YYYY): 12/18/2013 - 6/30/2014

* Narrative explanation

December 2013 - Self-evaluation of participants in teaching students critical thinking, STEM strategies, inquiry, engineering design, and math and science content. January 2014 - Mentor workshop to learn protocols for observing teachers, specifically in the use of critical thinking, STEM strategies, inquiry, engineering design, and math and science content. Mentors and the math/science coaches will use rubrics and observation tools to determine participant understanding which will be used to make adjustments in later professional development if necessary. - Day one training involves teachers in the project expectations and establishes the STEM professional learning community. Moodle will be used as an avenue for communication for the professional learning community. Experience with Moodle as a user prepares teachers for instructing their students. Mentors will meet at the end of each training day to discuss any challenges, successes, or questions arising as the project progresses. - Weekly on-line discussions build on the monthly training focus and include participating gifted teachers, mentors, science and math consultants, building relationships as strategies and learning is implemented. The January focus will be on technology. - In districts with gifted teachers already teaching at the STEM Center, weekly coaching for math and science teachers will begin. Math and science coaches collaborate on a weekly basis. - Teams for unit development will be formed and unit one development begins. February 2014 - Day Two and Day Three of the teacher professional development is delivered focusing on STEM strategies. Weekly on-line discussions on STEM strategies. -Mentors collaborate with individual districts to ascertain specific technology needs and preferences in preparation of tablet and computer purchasing. - Unit two development begins. March 2014 - Day Four of the teacher professional development is delivered focusing on critical thinking. Weekly on-line discussions on critical thinking. - Equipment will be purchased. - Unit three development begins. - Mentors meet to evaluate progress of the project and discuss any barriers such as technology issues, teacher progress or unit development. Modification will be made for upcoming professional development to address teacher needs, additional support for unit can be ascertained, and technology support will be determined to address those issues. April 2014 - Development of a broader understanding of a STEM program will occur through the attendance of either the NSTA or NCTM conferences. Teams of mentors will coordinate debriefing sessions and discussions with the teachers. Weekly on-line discussions on STEM programs. - Unit Four development begins. - Professional development for the technology staff for the newly purchased devices occurs in April 2014. As equipment arrives, technology staff configure devices and upload appropriate software. - Information collected from the mentors will be used to determine specific training session and unit instruction for both face-to-face lessons and on-line lessons. May 2014 - Day Five of the teacher professional development is delivered focusing on science and engineering practices . Weekly on-line focus on science and engineering practices. - Materials for units one-four are purchased and kits assembled. - Developed units are reviewed by university content specialists. - Mentors and site directors evaluate progress in the establishment of the physical STEM center and technology installments. Site directors will work with individual districts to facilitate the solutions on case by case basis. - Final preparation meeting are made for June trainings. June 2014 - Teachers participate in two weeks of training. Week one centers on technology and the STEM units. The second week builds content in math and science.

Summative evaluation (MM/DD/YYYY): 06/01/2014 - 06/30/2014

* Narrative explanation

The program evaluation will be conducted by the University of Cincinnati Evaluation Services Center (UCESC). This summative evaluation design was developed jointly by UCESC staff and the project team. The primary objective of this evaluation is to determine progress made toward attainment of the four project goals. UCESC is qualified to conduct this evaluation. The Center employs a collaborative model of evaluation and has provided comprehensive evaluation and assessment services to schools and school districts, state departments of education and health, professional development providers, early care and education providers, social service organizations, college and university programs, and various city, county, state, and community agencies and departments. Staff members have planned, coordinated, and conducted dozens evaluations of STEM education projects and programs funded by national organizations, state organizations and foundations. UCESC is a research and evaluation center that has been in operation since 1996 and currently has eight evaluators with various educational and industrial experiences. The BLIS summative evaluation will focus on the gifted student achievement in mathematics and science in the Bethel-Tate school district (2013-2014 academic year) and followed by the achievement of students in all participating school districts at the end of the first STEM Center implementation year (2014-2015). The analysis of these scores will compare the OAA science scores for students in the fifth quintiles. These students represent the highest ability students in the districts and many are gifted in math, reading, or science, but do not attend classes at the STEM Center. Data from each school year will compare the observed mathematics and science scores to the predicted science scores for individual students in the fifth quintile. These differences will be analyzed by the following grouping variables: whether or not the students received gifted STEM Center instruction, grade level, gifted instructor and regular classroom instructor. All student-level data will be provided by the school districts for analysis purposes without any individual students being identified by name and all results will be reported in aggregate. For the Bethel STEM Center gifted teachers and students, the evaluation will focus on documenting the gifted and classroom teachers' promising practices that enhance STEM instruction. These will include data collected from all constituents: teachers, mentors, administrators and these teachers' students. Since the currently trained gifted teachers will be working with their coordinating STEM classroom teachers to support student learning in their classrooms, we will also interview or survey these teachers to see what practices and behaviors best support these curricular materials being integrated into all classrooms so that they benefit all students. Since these student outcomes are longer term in the other 14 districts, the summative evaluation will document the program's impact on their participating teachers' knowledge and skills after completing the professional development provided by the grant. Interview and survey data will be collected from the participating teachers, their mentors, and administrators. Additionally, the curricular materials created will be reviewed by content experts. These expert assessments are an external quality check of the program products and a reflection of the level of teachers' knowledge and skills. Another assessment of teacher's knowledge and skills will occur when these materials are implemented in the STEM Centers or classrooms. Finally, the STEM Centers need to exist and be ready for teachers and students to use by June 2014. The evaluation will document the creation of each STEM Center, highlighting the decisions made, resources requested, resources received and timing.

19. Describe the expected changes to the instructional and/or organizational practices in your institution.

Students in Ohio are expected to be college and career ready when they graduate from high school. This requires the mastery of a curriculum that is more rigorous and also incorporates skills in communication, collaboration, critical thinking, and creativity. Many gifted programs have focused on these skills in the past and now these skills are expected in all content areas for all students. When coupled by the changes in technology and the demands of the 21st century workplace, schools are charged to re-evaluate traditional curriculum and how students are educated. The application of knowledge is just as important as the knowledge itself. Through extensive professional development and professional learning communities, the gifted teachers will learn and implement instructional strategies that challenge students to reach higher achievement levels and utilize problem-solving skills. The gifted teacher, through coursework, has been introduced to strategies that promote this type of learning. Professional development through the BLIS project hones in on these basic skills and instructs gifted teachers how to integrate these higher order thinking skills into math and science. The STEM classroom incorporates best practices in teaching math and science and becomes the model for other math and science classrooms in the district. The development of a professional learning community in spring 2014 that continues into the 2014-2015 when lessons are introduced provide an avenue for teachers to discuss lessons and instruction practices as the STEM strategies are implemented.

E) SUBSTANTIAL IMPACT AND LASTING VALUE - Impact, evaluation and replication

20. Describe the rationale, research or past success that supports the innovative project and its impact on student achievement, spending reduction in the five-year fiscal forecast or utilization of a greater share of resources in the classroom.

Ohio has recognized the need for innovation and STEM skills in order to build a workforce for the 21st century. However, current trends in Ohio show our students are well below the expectations of the marketplace. Research by the Greater Cincinnati STEM Collaborative reports that 80% of jobs created in the next decade will require math and science skills, 52% of high-school seniors taking the ACT exam were ready for college level science, and 84% of U.S. middle-school students say they would rather clean their room, eat their vegetables, or take out the garbage than learn math or science. Areas such as Appalachian Ohio are without local museums to visit, local companies that involve STEM, and most importantly a school that introduces STEM at an early age. Students in small schools and rural areas lack the opportunity to learn about STEM careers and the skills necessary for building tomorrow's leaders. This project addresses the need for introducing STEM to students at an early age and challenging them to use math and science in a problem-solving format. In September 2010, a new program was created for serving gifted students. Before developing the program, best practices on gifted programs were researched. Research by Dr. Karen Rogers was pivotal when developing the program. (Dr. Rogers is a professor of Gifted Studies in the Department of Special Education and Gifted Education at the University of St. Thomas in Minneapolis, Minnesota.) Results of her studies showed that (1) Gifted students served in a resource room demonstrated an effect size of .49 years in math and science standards and .44 years when measuring critical thinking. (The "effect size" is the additional growth students made above the expected one year's growth.) (2) If students are provided a daily challenge in their area of talent, the effect is 1/3 to ? year's additional growth. (3) The elimination of excess drill and review showed a greater accuracy in retained information and a greater focus on new learning. (4) Exposure to content beyond grade level showed 1.9 to 5.7 additional grade equivalent months growth. Based on this research, a blended learning program was created that included resource room time, an on-line learning community, and a curriculum that exceeded grade level expectations. The new curriculum resulted in significant increases in student achievement in math and science. When the scores of students at Bethel-Tate were analyzed, students who visited the STEM Center had substantial increases over their peers. For this comparison, the OAA science scores for students in the fifth quintiles were compared. These students represented the highest ability students in the districts and many were gifted in math, reading, or science who do not attend classes at the STEM Center. Data from the 2011-2012 school year compared the observed science score to the predicted science score for students in the fifth quintile and found students served averaged a score 12.04 points above their predicted score as compared to a difference of -3.61 for students who did not receive STEM instruction. Data from the 2012-2013 school year showed repeated success as students served scored 8.69 points above the predicted scores while students not served had scores that averaged -21.2 points. (These students have the same teachers for science the other four days each week.) Last year, it was decided to increase the time spent on math at the STEM Center and join an on-line math program to complement the face-to-face lessons at the STEM Center and regular classroom instruction. When the NCE data from the fifth quintile was analyzed for math, students in the STEM Center increased 3.55 places and those not served decreased 8.00 places. These exciting results from serving gifted students through STEM served as the inspiration of this project in order to share this program with other districts.

21. Is this project able to be replicated in other districts in Ohio?

☑ Yes ☐ No

22. If so, how?

The BLIS Project centers around replicating a high quality in other locations. The practices that have been development for the participants of this grant can be used to initiate similar programs schools in rural, city, or suburban locations. After this project is evaluated, revisions can be incorporated to fine tune the implementation process for other districts.

23. Describe the substantial value and lasting impact that the project hopes to achieve.

The impact that the STEM Center has had at Bethel-Tate Schools is substantial. Students are demonstrating higher achievement scores in math and science, they are building thinking skills, and they are setting higher goals for themselves. Students have developed a "growth mindset" that challenges them to tackle problems that they might not be able to solve initially or that have more than one answer. For gifted students, it is crucial that they experience these types of problems at a young age. Gifted students who are first challenged at the college level often become discouraged and change majors or even quit college. One example of this can be seen by the number of students who enter college to study engineering compared to those that complete the engineering program. According to research by Dr. Mitchell J. Chang at UCLA "Studies have found that roughly 40 percent of students planning engineering and science majors end up switching to other subjects or failing to get any degree. That increases to as much as 60 percent when pre-medical students, who typically have the strongest SAT scores and high school science preparation, are included. That is twice the combined attrition rate of all other majors. Students currently served at the STEM Center engage in lessons at the elementary grade level that are challenging and build an intrinsic desire for learning. Students learn how to solve challenging problems at an early age so that future challenges do not overwhelm the students. The exploration of STEM strategies, STEM careers, and lessons that involve higher order thinking skills work best when gifted students can complete them with other gifted students. Just like athletes who strive to improve by playing others who are higher-ranked, gifted students are motivated when they learn with peers at their intellectual level. This project will replicate this effective and motivating program to other schools.

24. What are the specific benchmarks related to the fund goals identified in question 9 that the project aims to achieve in five years? Include any other anticipated outcomes of the project that you hope to achieve that may not be easily benchmarked.

The primary goal of this project is to increase student achievement in math and science for fifth grade gifted students in 15 districts as evidenced in exceeding their expected scores. Beginning in January, teachers will complete a self-evaluation of their skills in teaching critical thinking, STEM strategies, science and engineering practices and comfort level of science and math content. Mentors will monitor teacher implementation of the STEM strategies learned through the professional development and the incorporation of technology. This will be completed through the establishment of a STEM Center, the professional development of gifted teachers, and the generation of face-to-face and on-line STEM curriculum. This goal will be monitored with the results of the year-end science assessments and the new science performance indicators. Evaluators of the project will create focus groups of teachers and students to assess baseline data and to determine progress. The secondary goal of this project is for the new STEM Centers to serve as a model for math and science teachers in the building, and ultimately incorporate STEM strategies that will increase science achievement in those classes. Experienced teachers from the Bethel-Tate STEM Center will present at STEMstitute to share successes, lessons, and strategies from their program. Another anticipated outcome from the project is the reduction of school "dropouts". In areas where high school students have options for what schools they attend, gifted students often leave their school districts to be challenged through post-secondary education options at universities or transfer to schools that have courses that are more appealing. In many of our elementary schools, gifted students can drop out in favor of being home-schooled. These parents report that their children are bored in the traditional school setting or don't fit it. Even though it's only one day per week, gifted students who attend the STEM Center experience a love of learning with other gifted students and are encouraged to stay in school. The final outcome not easily benchmarked is mastering the social skills that gifted students often lack. As part of the STEM program, students have discussions led by Child Focus as they eat lunch together to talk about issues facing gifted students such as: not showing off, fitting in, procrastination, organizational skills, and other issues students bring to the discussion. This will also be used as a model for planned discussions in the new STEM Centers. In addition to these discussions, lessons and activities are planned that require gifted students to collaborate and to share leadership roles. When working on communication skills, gifted students practice the listening part of communication and experience learning from others. Mastering these social skills is a goal that is incorporated into the STEM program. A survey will be developed based on focus groups at the Bethel-Tate STEM Center that will be administered to other students to plan similar sessions on social skills at the new schools.

25. Describe the plan to evaluate the impact of the concept, strategy or approaches used.

* Include the method by which progress toward short- and long-term objectives will be measured. (This section should include the types of data to be collected, the formative outputs and outcomes and the systems in place to track the program's progress).

* Include the method, process and/or procedure by which the program will modify or change the program plan if measured progress is insufficient to meet program objectives.

Using a Rapid Response framework, the evaluation will provide timely feedback to the BLIS project team and participants, promoting continuous improvement for the teachers regarding identified knowledge and skills, and for the project regarding attainment of project goals and overall impacts discussed earlier in this proposal. Multiple measures evaluate project activities' effectiveness, overall success of professional development and teacher-mentor relationships and ultimately how these changes in teacher practices impact students' STEM achievement as described in section 18. Theory suggests that as teachers see student results they will desire PD that supports these gains. Therefore, the evaluation will provide the project team and participants with data indicating the extent to which project goals are met on a regular basis. This includes pre-surveys prior to any activities, survey and interview data collected after the PD leading to adjustments being made in the spring activities, late spring data that will help inform STEMstitute activities, and an end of the summer evaluation that will help define the academic year implementation details. Teachers and students using the Bethel STEM Center will be evaluated using case study methodology to identify promising practices. At the end of the 2013-2014 academic year, Bethel teachers and mentors can present to others participating in the project what worked and how to get the most out of the teacher-mentor relationships. The content from these presentations will be used triangulate other data collected from the teachers and mentors. The students using the Bethel STEM Center will be interviewed, via a discussion group, and their responses will be used to create a survey that can be administered to students as other STEM Centers are implemented. Additionally, the mentors who are providing development and implementation support will supply the evaluation team with written summaries of their assessments of the teachers' curricular materials and their implementation. The following project identified constituencies will be involved in the evaluation: teachers, mentors, project team members, the teachers' students, and STEM classroom teachers who work with the BLIS participating teachers. The evaluation questions and activities are outlined below: ? Evaluation Question 1: 1a) To what extent does the BLIS trained teachers acquire and demonstrate new STEM strategies and technology applications? Evaluation Activities: 1a) Pre-post Teacher surveys and focus groups related to knowledge and skills; 1b) Expert assessment of units developed; 1c) "How's it going?" group discussions; 1d) "How'd the year go?" focus group and survey - late Spring; 1e) Review of feedback given by mentors to teachers; and 1f) Evaluation and reflection surveys completed by teachers after implementation of curricular materials. ? Evaluation Question 2) How does the BLIS project impact learning in STEM classrooms? Evaluation Activities: 2a) "How'd the year go?" focus groups and surveys - late Spring; 2b) Student feedback forms completed after materials used; 2c) Analysis of mathematics and science state achievement tests as described in section 18; 2d) Tracking of gifted student school retention. ? Evaluation Question 3: To what extent do the teachers share knowledge and skills learned in BLIS project with colleagues? Evaluation Activities: 3a) "How'd the year go?" focus group and survey - late Spring; 3b) STEMstitute evaluation; 3d) Surveys with coordinating classroom teachers at the end of academic year. Is In summary, the BLIS evaluation is two pronged. The Bethel STEM Center will be evaluated as a case study to identify promising practices that can be utilized as the other 16 STEM Centers are planned and implemented. Parallel evaluation activities will focus on the professional development and mentoring given to the BLIS participating teachers as they create and implement these STEM materials.

By virtue of applying for the Straight A Fund, all applicants agree to participate in the overall evaluation of the Straight A Fund for the duration of the evaluation timeframe. The Governing Board of the Straight A Fund reserves the right to conduct evaluation of the plan and request additional information in the form of data, surveys, interviews, focus groups, and any other related data to the legislature, governor, and other interested parties for an overall evaluation of the Straight A Fund.

PROGRAM ASSURANCES: I agree, on behalf of this applicant agency and/or all identified partners to abide by all assurances outlined in the Assurance section of the CCIP. In the box below, enter "I Accept" and indicate your name, title, agency/organization and today's date.

I Accept Melissa Kircher, Superintendent Bethel-Tate Local Schools October 25, 2013