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Adjusted Allocation | 0.00

Remaining | -2,226,679.00
Please respond to the prompts or questions in the areas listed below in a narrative form.

**A) APPLICANT INFORMATION - General Information**

1. **Project Title:**
   The STEM Mobile Learning Labs Project

2. **Executive summary:** Please limit your responses to no more than three sentences.
   The STEM Mobile Learning Labs Project will increase student achievement in seventeen (17) elementary and middle schools in southwest Ohio through the innovative use of technology-rich, mobile STEM learning laboratories designed to engage students in the hands-on STEM Learning Challenges curriculum customized for the project. Through a shared services agreement, participating teachers will be provided with the high-quality, job-embedded professional development necessary to insure effective implementation of the digital curriculum and STEM technology resources loaded on each of the mobile labs. The mobile STEM labs and all equipment purchased through a shared purchasing agreement are designed to be easily moved from classroom to classroom during the school day, or used to drive formal or informal STEM programs outside the traditional school day.

   *This is an ultra-concise description of the overall project. It should not include anything other than a brief description of the project and the goals it hopes to achieve.*

3. **Total Students Impacted:**
   30678

   *This is the number of students that will be directly impacted by implementation of the project. This does not include students that may be impacted if the project is replicated or scaled up in the future.*

4. **Please indicate which of the following grade levels will be impacted:**

   - [ ] Pre-K Special Education
   - [ ] Kindergarten
   - [ ] 1
   - [ ] 2
   - [ ] 3
   - [ ] 4
   - [ ] 5
   - [ ] 6
   - [ ] 7
   - [ ] 8
   - [ ] 9
   - [ ] 10
   - [ ] 11
   - [ ] 12

5. **Lead applicant primary contact:** - Provide the following information:

   **First Name, last Name of contact for lead applicant**
   Shannon Cox

   **Organizational name of lead applicant**
   Montgomery County Educational Service Center

   **Address of lead applicant**
   200 South Keowee Street, Dayton, OH 45402

   **Phone Number of lead applicant**
   937-225-4598

   **Email Address of lead applicant**
   shannon.cox@mcesc.org

6. **Are you submitting your application as a consortium?** - Select one checkbox below

   - [ ] Yes
   - [ ] No

   If you are applying as consortium, please list all consortium members by name on the "Consortium Member" page by clicking on the link below. If an educational service center is applying as the lead applicant for a consortium, the first consortium member entered must be a client district of the educational service center.

   Add Consortium Members
8. Describe the innovative project: - Provide the following information

The response should provide a clear and concise description of the project and its major components. Later questions will address specific outcomes and the measures of success.

The current state or problem to be solved; and

There is a dire and well-documented need in Ohio to produce a STEM literate workforce. Chief among the reasons for this need is the challenge of filling the STEM education and career pipeline with individuals who possess the academic backgrounds, problem-solving skills, and workplace dispositions so desperately needed in the STEM industries, laboratories, and research and development centers that play such a critical role in Ohio's current and future economies. Perhaps the most salient question relative to this problem is: How can we inspire young people to commit themselves to on-going STEM education and ultimately a STEM career field? This is an especially challenging question given the fact that many Ohio Schools and teachers are ill-equipped to provide students with the kinds of academically challenging, personally relevant, and highly engaging learning experiences that are the hallmark of quality STEM education. While we acknowledge the need for dedicated STEM Schools we believe that quality STEM education is for all students and that there is a critical need to develop, test, and scale up innovative and cost effective ways to provide STEM education to the vast majority of students who do not have the opportunity or interest in attending a dedicated STEM School. Unfortunately, many schools lack the relevant curriculum materials, technical equipment, and instructional resources necessary. Perhaps more importantly, many classroom teachers lack the knowledge and skills to design and deliver meaningful STEM learning experiences.

The proposed innovation and how it relates to solving the problem or improving on the current state.

The STEM Mobile Learning Labs Project is designed to attack the just described problem by focusing on student achievement as described in Goals 1.1 through 1.4. Specifically, it targets students at a critical stage of personal and academic development, those in the middle-years of schooling (Brickhouse & Potter, 2001; Carlone, 2002; Olitsky, 2006). In order for these students to begin thinking about a STEM career it is critical they have rigorous and highly engaging STEM learning experiences where they can develop the interest and commitment necessary to sustain them through the additional STEM education experiences necessary to securing a STEM career. This is an especially high need among female and minority students who have been historically underrepresented in STEM career fields. Consequently, these students must have the opportunity to experience STEM education by working with challenging curriculum and STEM technologies facilitated by teachers who possess a deep understanding of best-practices in STEM education. In addition, students must be provided with specific information about the range of STEM careers and exposed to models of people working in such careers, including the challenges they face and the satisfaction they find in their work (Painter, Jones, Tretter & Kubasko, 2006). In an intentional effort to help connect students to the STEM economic clusters that are critical in Ohio, the STEM Learning Challenges Curriculum and accompanying Inspiring STEM Careers Videos described below will provide students with learning experiences anchored to the following STEM career areas: Advanced Materials & Manufacturing, Agricultural Engineering, Air Vehicles, Environmental Engineering, Human Factors and Performance, Power and Propulsion, and Sensors Technology. What follows are brief descriptions of the major components of the STEM Mobile Learning Labs project. First, the project will equip each school with a STEM Mobile Learning Lab for each grade level, grades 5 to 8. Each mobile lab will consist of a 3 foot wide x 6 foot long x 3 foot deep rolling cabinet which will house the STEM tools, resources, and technologies aligned with the companion STEM Learning Challenges digital curriculum developed for this project. Each mobile STEM Lab will be equipped with the following technology tools and scientific equipment: soil moisture probes, photo gates, temperature sensors, acceleration sensors, pH sensors, sensor graphical display components, micro/macro microscopes, electronic scales, hot plates, electronic calipers, laptops, tablets, digital cameras, a projector, and a class set of graphing calculators. Second, the project will provide train-the-trainer professional development for nine lead teachers, one from each consortium member district. The lead teacher training will not only focus on how to effectively facilitate the STEM Learning Challenges Digital Curriculum, but how to train their colleagues in using the mobile learning lab equipment and curriculum materials in their classrooms as well. Third, the project will equip each STEM mobile lab cart with a set of Inspiring STEM Career Exploration Videos to engage middle-year students in acquiring a vision of the kinds of work being done in the STEM career fields identified above. The videos will provide students with an understanding of the range of STEM careers and their respective educational requirements ranging from technical certifications to associate degrees to college diplomas and advanced graduate degree. All instructional design work will be grounded in the STEM Education Quality Framework. The framework is research-based and has been nationally validated by Battelle's STEMx network. It provides a clear articulation of a vision for quality STEM Education that provides school administrators and teachers with the shared understandings and language necessary to begin and sustain high-quality STEM education programming.

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

Applicants should select any and all goals the proposal aims to achieve. The description of how the goals will be met should provide the reader with a clear understanding of what the project will look like when implemented, with a clear connection between the components of the project and the stated goals of the fund. If partnerships/consortia are part of the project, this section should describe briefly how the various entities will work together in the project. More detailed descriptions of the roles and activities will be addressed in Question 16.

- Student achievement (Describe the specific changes in student achievement you anticipate as a result of this innovation (include grade levels,
Goal Category 1. Student Achievement Goal 1.1. Students in grades 5 to 8 who engage in the STEM Learning Challenges digital curriculum and employ the STEM Mobile Learning Labs will show significant gain scores on pre-test and post-test measures of specific content knowledge and skill in mathematics and science that are the foci of the STEM Learning Challenges. Rationale: Goal 1.1 is a short-term student achievement goal important to the project as it provides a mechanism for measuring the immediate impact of the mobile labs and associated curriculum. Goal 1.2. Students in grades 5 to 8 who engage in the STEM Learning Challenges digital curriculum will show significant gain scores on pre-test and post-test measures of their dispositions toward pursuing a STEM career. Rationale: Goal 1.2 is designed to measure the long-term effects of the project on student achievement as measured by state level measures of math and science knowledge and skills. OAA test scores for the relevant grade levels will be tracked over the six year period from 2015 to 2020. Rationale: Goal 1.3. Students in grades 5 to 8 who engage in the STEM Learning Challenges digital curriculum, employ the STEM Mobile Learning Labs, and are facilitated in watching and reflecting on the Inspiring STEM Careers Videos will show significant gain scores on pre-test and post-test measures of their dispositions toward pursuing additional STEM education and possible STEM careers. Rationale: Goal 1.4. If the ultimate goal of the STEM education movement is the creation of a STEM literate workforce it is critical that the project design and administer assessment measures to help document shifts in participating students’ dispositions toward pursuing a STEM education and possible STEM careers. Other approved fiscal measures include a reduction in spending over a five-year period in the operating budget approved by your organization's executive board or its equivalent. Other approved fiscal measures include a reduction in spending over a five-year period in the operating budget approved by your organization's executive board or its equivalent.

Spending reductions in the five-year fiscal forecast or positive performance on other approved fiscal measures (Describe how your shared services delivery model will demonstrate increased efficiency and effectiveness, long-term sustainability, and scalability in the box below.)

Utilization of a greater share of resources in the classroom (Describe specific resources (Personnel, Time, Course offerings, etc.) that will be enhanced in the classroom as a result of this innovation in the box below.)

Implementing a shared services delivery model (Describe how your shared services delivery model will demonstrate increased efficiency and effectiveness, long-term sustainability, and scalability in the box below.)

The STEM Mobile Learning Labs Project will pursue the following specific goals with regard to implementing a shared services model. Goal 4.1 Through the shared adoption of a standardized set of STEM education technology, instructional materials, curriculum and professional development protocols the consortium will create a common STEM education infrastructure to promote communication and collaboration between and among the consortium's participating teachers and administrators. Rationale: One of the chief aims of this project is to develop a STEM teaching and learning community in which all participating members have the state-of-the art STEM tools, technologies and resources they need to create engaging hands-on learning experiences. Assessment measures for Goal 4.1 will document the project's progress toward building that STEM education infrastructure. Goal 4.2 By adopting a shared and collaborative model of professional development the Montgomery County ESC’s Dayton Regional STEM Center will increase its capacity to deliver cost-effective and targeted professional development intentionally aimed at helping the consortium member schools grow the STEM teacher leaders they need to sustain and scale up their STEM education programming for middle years students. Rationale: This project cannot make an impact on student achievement as articulated above without insuring that the participating schools are providing students with STEM confident and competent teachers who are personally motivated to utilize the equipment and curriculum the project will provide.

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

- New - never before implemented
- Existing: Never implemented in your community school or school district but proven successful in other educational environments
- Mixed Concept: Incorporates new and existing elements
- Established: Elevating or expanding an effective program that is already implemented in your district, school or consortia partnership

11. Financial Documentation: - All applicants must enter or upload the following supporting information. The information in these documents must correspond to your responses in questions 11-14.

* Enter a project budget in CCIP (by clicking the link below)

Enter Budget

* If applicable, upload the Consortium Budget Worksheet (by clicking the link below)

* Upload the Financial Impact Table (by clicking the link below)

* Upload the Supplemental Financial Reporting Metrics (by clicking the link below)

Upload Documents
For applicants without an ODE Report Card for 2012-2013, provide a brief narrative explanation of the impact of your grant project on per pupil expenditures or why this metric does not apply to your grant project instead of uploading the Supplemental Financial Reporting Metric.

The project budget is entered directly in CCIP. For consortia, this project budget must reflect the information provided by the applicant in the Consortium Budget Worksheet. Directions for the Financial Impact Table are located on the first tab. Applicants must submit one Financial Impact Table with each application. For consortium applications, each consortium member must add an additional tab on the Financial Impact Tables. Partners are not required to submit a Financial Impact Table.

Applicants with an "Ohio School Report Card" for the 2012-2013 school year must upload the Supplemental Financial Reporting Metrics to provide additional information about cost savings and sustainability. Directions for the Supplemental Financial Reporting Metrics are located on the first tab of the document. If your organization does not have an "Ohio School Report Card" for the 2012-2013 school year, please provide an explanation in the text box about how your grant project will impact expenditures per pupil or why expenditure per pupil data does not apply to your grant project.

Educational service center, county boards of developmental disabilities, and institutions of higher education seeking to achieve positive performance on other approved fiscal measures should submit the budget information approved by an executive board or its equivalent on the appropriate tabs of the Financial Impact Table. Educational service centers should use the "ESC" tab and county boards of developmental disabilities and institutions of higher education should use the "non-traditional" tab.

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

Responses should provide rationale and evidence for each of the budget items and associated costs outlined in the project budget. In no case should the total projected expenses in the budget narrative exceed the total project costs in the budget grid.

2,226,679.00 State the total project cost.

* Provide a brief narrative explanation of the overall budget.

Salaries: $37,000 Dr. James Rowley will devote .25 of his full-time equivalent at a cost of $22,500. Marti Baker will provide 500 hours of administrative support at $29.00 per hour for $14,500. Retirement/Fringe Benefits: $9,562 Benefits on Rowley's project salary at 32% will be $7,200. Ms. Baker's benefits at 16.29% will be $2,362. Purchased Services: $597,161 Sandi Preiss will serve as Project Director and coordinate day-to-day operations. Her cost, calculated at .75 FTE as an ESC contractor will be $60,000. Dr. Margaret Pinnell, Professor of Engineering will serve as engineering design consultant assisting with curriculum development. Her cost as an ESC consultant and contractor will be $36,900. Dr. Suzanne Franco, Professor of Research and Statistics will be conduct project evaluation as a consultant for $41,521 payable to Wright State University. Think TV/Dayton's Gloria Skurski will provide video production services to create the Inspiring STEM Careers videos at cost of $52,500 payable to Think/TV Dayton. Mopi16.com's Gina Anderson will develop the digital curriculum STEM Learning Challenges. The development and hosting of the digital curriculum will be provided at a cost of $150,040 payable to Mopi16. Mr. Thomas Jenkins, STEM teacher from the Greenon Local schools will serve as a co-trainer of lead teachers. He will also be responsible for Website management. His contracted services will be $7,000. Mr. Ben McCombs, a STEM teacher from the Kettering City Schools will serve as a co-trainer of lead teachers. His contracted services will be $5,000. Nine Lead Teachers contracted by the ESC. These teachers will be selected by the consortium members in collaboration with the leadership team from the ESC. $24,000 has been budgeted for each lead teacher for a total cost of $216,000. One Teacher Assessment Specialist will work to assist in the design of the pre and post assessment measures for the STEM Learning Challenges curriculum for a total of $7,500. One Materials Management Technician employed in Year One as a part-time contractor to support lead teachers in configuring and troubleshooting the Mobile Labs technology equipment at a cost of $15,000. Substitute Teacher Costs. Fifty-seven substitute days will be provided to the consortium member schools to support teacher training. At $100.00 per sub day the project cost is $5,700. 500 Supplies: $799,180 Nine sets of STEM consumable materials at $3,000 per set will provide lead teachers with the instructional materials necessary to support the STEM Learning Challenges curriculum. Total cost will be $27,000. Lead Teacher training materials to support the professional development of lead teachers will be $1,000. STEM equipment for 46 Mobile STEM Lab carts from Wards Science. Per cart: moisture probes, photo gates, temperature sensors. Acceleration sensors, pH sensors, sensor graphical display components, micro/macromicroscopes, electronic scales, hot plates, electronic calipers, and a class set of graphing calculators. Cost of this equipment per cart will be $12,839 for a total cost of $590,630. 322 tablet computers (HP Omni) from Southern Computer Warehouse@ $481 for a total cost of $154,882. Laptop and tablet accessories from Southern Computer Warehouse include laptop and tablet sleeves to protect those technology, as well as speakers and digital cameras for each mobile lab cart. The cost per cart is $558 for a total of $25,668 Capital Outlay: $783,776 322 laptop computers (7 per Mobile Lab) with six-year extended warranty @ $1,561 for a total cost of 502,964. 46 projector packages (including projector, warranty and additional lamp) purchased through Southern Computer Warehouse for each mobile lab $728.00 for a total cost of $33,488. 46 mobile media cabinets (72”W x 28”D x 36”H) will be purchased through Wards Science to house and transport technology equipment. Carts pricing is $5377 for a total cost of

13. Will there be any costs incurred as a result of maintaining and sustaining the project after June 30th of your grant year?

Sustainability costs include any ongoing spending related to the grant project after June 30th of your grant year. Examples of sustainability costs include annual professional development, equipment maintenance, and software license agreements. To every extent possible, rationale for the specific amounts given should be outlined. The costs outlined in the narrative section should be consistent and verified by the financial documentation submitted and explained in the Financial Impact Table. If the project does not have sustainability costs, applicants should explain why.

Yes - If yes, provide a narrative explanation of your sustainability costs as detailed in the Financial Impact Table in the box below.

Yes, it is anticipated that each consortium member will likely incur on-going costs as they sustain the project through the 2020 fiscal year. Each consortium member has made independent decisions on where to find the funds to cover the projected on-going costs as calculated by the applicant organization. The STEM Mobile Learning Labs Project will provide each consortium member school with durable technology hardware, peripheral equipment, and STEM instructional equipment and supplies with normal use lifetimes of approximately six-years. We understand that "normal use" is not a guaranteed proposition with even well managed middle school classrooms. Consequently, consortium members have been advised to anticipate expenditures for repair and replacement costs not covered by manufacturer warranties. Because of
the volume purchasing associated with our project, we were able to negotiate robust extended warranties for some of the mobile lab's component parts. However, we recognize that such extended warranties will not fully protect the participating schools from some on-going costs. The value of the various mobile lab components is approximately $28,000. This does not include the mobile cart itself which has a lifetime well beyond the six-year time period. The specific level of repair and replacement costs for the mobile labs is difficult to predict and will vary from school to school depending on any number of factors beyond our control. In an effort to protect the schools we recommended the following budgetary considerations in forecasting their possible on-going costs in the period of Fiscal Year 2016 to Fiscal Year 2020. These forecasts were based on an increasing percentage of original equipment cost for repair and replacement each year, and a gradually increasing cost for consumable materials associated with the mobile labs based on the assumption that each succeeding fiscal year will see increased use of the mobile labs and their associated consumable supplies. We calculated the ongoing costs based on warranty expirations and time and use variables for a single mobile lab. These calculations yielded the following projected costs for a single mobile lab for each of the five years from Fiscal Year 2016 through Fiscal Year 2020. The projected costs are as follows: FY 2016 $450.00, FY 2017 $500, FY 2018 $550, FY 2019 $800, and FY 2020 $1,000. Since consortium members will receive different numbers of mobile labs based on their school(s) grade level configurations, the total projected costs for maintaining a single mobile lab must be multiplied by the total number of labs the consortium member has in service. For example a school with four (4) mobile labs would need to budget 4 times the amounts listed for each fiscal year. These projections were shared with the consortium members along with a request that they make local decisions as to how to offset these projected costs by reducing other areas of their budgets in each fiscal year through 2020. These budgetary adjustments are reported in the Financial Impact Tables of the consortium members.

14. Will there be any expected savings as a result of implementing the project?

Yes

No

Applicants with sustainability costs in question 13 or seeking to achieve significant advancement in spending reductions in the five-year forecast must address this response. Expected savings should match the information provided by the applicant in the Financial Impact Table. All spending reductions must be verifiable, permanent, and credible. Applicants may only respond "No" if the project will not incur any increased costs as a result of maintaining and sustaining the project after June 30th of your grant year. The Governing Board will use the cost savings as a tiebreaker between applications with similar scores during its final selection process. Cost savings will be calculated as the amount of expected cost savings less sustainability costs relative to the project budget.

677,911.00 If yes, specify the amount of annual expected savings. If no, enter 0.

If yes, provide details on the expected savings (i.e. staff counts and salary/benefits, equipment to be purchased and cost, etc.). If no, please explain why (i.e. maintenance plan included in purchase price of equipment) in the box below.

While this grant proposal did not single out Goal 2, Reduced Spending, as a focus of the project, significant savings will be captured. First because of volume purchasing discounts on the STEM equipment housed on the mobile lab carts, we were able to save $6,753 per mobile lab for a total savings of $310,655. In addition, while four of the nine consortium members showed the project to have zero net costs through 2020, five of the districts' Financial Impact Tables indicate that they will capture savings due to reduced spending for technology and/or professional development. The savings for those five consortium members totals $339,148 during the fiscal year period of 2016 to 2020. In similar Fashion, the ESC was able to capture savings on capital outlay in the amount of $28,108 due to not having to replace one of its laptop carts in 2018 and by being able to reduce its STEM instructional resources budget. Consequently, the total savings for this project is $677,911.

15. Provide a brief explanation of how the project is self-sustaining.

All Straight A Fund grant projects must be expenditure neutral. For applications with increased ongoing spending as documented in question 11-14, this spending must be offset by expected savings or reallocation of existing resources. These spending reductions must be verifiable, permanent, and credible. This information must match the information provided in your Financial Impact Table. Projected additional income may not be used to offset increased ongoing spending because additional income is not allowed by statute. Please consider inflationary costs like salaries and maintenance fees when considering whether increased ongoing spending has been offset for at least five years after June 30th of your grant year. For applications without increased ongoing spending as documented in questions 11-14, please demonstrate how you can sustain the project without incurring any increased ongoing costs.

For educational service centers and county boards of developmental disabilities that are members of a consortium, any increased ongoing spending at the educational service center or county board of developmental disabilities may also be offset with the verifiable, permanent, and credible spending reductions of other members of the consortium. This increased ongoing spending must be less than or equal to the sum of the spending reductions for the entire consortium.

Explain in detail how this project will sustain itself for at least five years after June 30th of your grant year.

The STEM Mobile Learning Labs Project will be self-sustaining for a minimum of five-years following the initial funding year. What follows is an explanation of the specific reasons why the project will be self-sustaining for all participating consortium members without them incurring on-going costs for the five year period following the conclusion of the grant funding period on June 30, 2015. The first reason why this project will be self-sustaining is grounded in its commitment to a high quality lead teacher, train-the-trainer approach to professional development. In Fiscal Year 2015, the Montgomery Educational Service Center using it's Dayton Regional STEM Center department, will plan and deliver intensive STEM education and teacher leadership training for the nine lead teachers representing the consortium member schools. This training will involve both initial and on-going professional development. Initial training will occur in the early fall of 2015. On-going training will conclude in June, 2020. Initial training will be tightly focused on helping the lead teachers become familiar with the curricular and technical resources that make up the STEM mobile Labs. The teacher will receive hands-on training with all equipment and how it has been designed to support the grade level appropriate STEM Learning Challenges curriculum. The training will also help the lead teachers fully understand the roles and responsibilities as well as some of the possible barriers they may encounter as they endeavor to engage their colleagues in...
D) IMPLEMENTATION - Timeline, scope of work and contingency planning

16. Please provide a brief description of the team or individuals responsible for the implementation of this project, including other consortium members and/or partners.

This response should include a list of qualifications for the applicant and others associated with the grant. If the application is for a consortium or a partnership, the lead should provide information on its ability to manage the grant in an effective and efficient manner. Include the partner/consortium members’ qualifications, skills and experience with innovative project implementation and projects of similar scope.

Enter Implementation Team information by clicking the link below:

Add Implementation Team

For Questions 17-19 please describe each phase of your project, including its timeline, scope of work, and anticipated barriers to success.

A complete response to these questions will demonstrate specific awareness of the context in which the project will be implemented, the major barriers that need to be overcome and the time it will take to implement the project with fidelity. A strong plan for implementing, communicating and coordinating the project should be outlined, including coordination and communication in and amongst members of the consortium or partnership (if applicable). It is recognized that specific action steps may not be included, but the outline of the major implementation steps should demonstrate a thoughtful plan for achieving the goals of the project. The time line should reflect significant and important milestones in an appropriate and reasonable time frame.

17. Planning - Activities prior to the grant implementation

* Date Range May 2013 - March 2014

* List of scope of work (activities and/or events including project evaluation discussions, communication and coordination among entities).

In May of 2013, the MCESC conducted a needs assessment of sixty-two classroom teachers from southwest Ohio with regard to STEM education. Three specific needs were identified. The needs were: First, the need for appropriate equipment, technology and instructional resources to facilitate hands-on STEM learning experiences. Second, the need for high quality curriculum materials, and third, the need for high quality professional development conducted by veteran teacher who have successfully implemented STEM education. - In September of 2013, we queried local curriculum coordinators from client and local city districts as to their thoughts about what grade levels they would target for improvements in STEM education. - In October of 2013, we identified local middle schools with a history of commitment to improving STEM education. Three public schools and one parochial school were subsequently invited to join the consortium to serve as models of schools making an effort to improve STEM education. - From November to December 2014 we worked to create a project abstract that could be used to provide a quick overview of the project to potential consortium members and partners. - In February, 2015 the project abstract was crafted into a consortium agreement and distributed to potential consortium members. - In February of 2014, MCESC formally invited 10 schools to join this proposal. - In March of 2014 conversations began with representatives from the following organizations: Think TV Dayton, Ward Scientific, Dell Computers, The University of Dayton School of Engineering, The Wright State School of Education and Human Services, and Mopi16.com. - In March, 2014 as agreements were returned from prospective consortium members conversations were initiated with treasurers explaining the Financial Impact Table requirement. Nine of the ten invited districts signed the consortium agreement and returned their completed requirements.

* Anticipated barriers to successful completion of the planning phase

Barriers encountered during the planning stage included a lack of a shared understanding of STEM education among prospective consortium members. While all parties had a felt need to improve STEM education the challenge was arriving at a shared vision. Clearly our proposed project helped us arrive at such a vision.

18. Implementation - Process to achieve project goals

* Date Range July 2013 - September 2020

* List of scope of work (activities and/or events, including deliverables, project milestones, interim measurements, communication, and coordination).

This project will occur across four phases. Phase I (July-November, 2014). The MCESC team with consortium members and vendors acquire, deliver, configure and alpha-test the mobile STEM labs. The ESC team and Margaret Pinnell and Gina Anderson prepare the digital STEM Challenges curriculum. Lead teachers are recruited and trained. The project evaluator completes evaluation activities and reports as described in Questions 19 and 22. Phase II (November-December, 2014). The MCESC team working with lead teachers deploys the mobile STEM labs. Lead teachers beta-test one of the STEM Learning Challenge in their classes. To introduce other grade level teachers to the
20. Describe the expected changes to the instructional and/or organizational practices in your institution.

The response should illustrate the critical instructional and/or organizational changes that will result from implementation of the grant and the impact of these changes. These changes can include permanent changes to current district processes, new processes that will be incorporated or the removal of redundant or duplicative processes. The response may also outline the expected change in behaviors of individuals (changes to classroom practice, collaboration across district boundaries, changes to a typical work day for specific staff members, etc.). The expected changes should be realistic and significant in moving the institution forward.

Please enter your response below:

We have built a robust STEM education outreach program over the past seven years. That effort has been focused on helping all schools improve STEM education to increase student achievement. Those efforts have impacted over 500 teachers and over 100,000 students. During that time many lessons have been learned, new tools and instructional resources were built, tested, and applied. There are however a number of expected changes, both instructional and organizational, that we anticipate. Instructional Changes As a result of this project, over 600 teachers will be challenged and supported to turn their middle years’ classroom into dynamic, 21st century learning environments. While the infusion of the STEM mobile learning labs will play an integral role in that change process the most significant change will occur in the new knowledge and skills the teachers will attain through the professional development they will receive and the consequent effect it will have on their practices. Consider the following example: Many middle school teachers use composting to help students explore Order and Organization Science Standards. This is often done in a traditional manner with the teacher providing explanations of the composting process. Imagine instead the following digitally provided STEM Learning Challenge in which students design and build a table-top composting bin using common household materials. Student teams then modify the physical environment to accelerate the decomposition of recyclable materials such as Sunchip bags, newspaper, and banana peels based on research and subsequent design brainstorming. Imagine students employing the engineering design process as they develop a systematic plan, document results, compare findings, and modify their design while exploring environmental and agricultural engineering through the companion Inspiring STEM Careers Video. Imagine these students monitoring and recording their findings addressing math and language arts standards as they employ STEM tools from the mobile STEM labs including soil and moisture probes, temperature and pH sensors, digital cameras, and graphing calculators. These authentic learning experiences will promote assessments that focus not only on measuring students’ content knowledge but their acquisition of 21st Century skills as well. Instead of student understanding being assessed via a multiple choice, short answer, paper and pencil exam, it will be assessed via performance rubrics measuring the attainment, synthesis, application, and evaluation of academic concepts as evidenced in student generated artifacts. Engineering design challenges will reflect a variety of career fields promoting diverse understanding of STEM. Organizational Changes Funding of this project will stimulate a number of organizational changes for both the ESC and for the consortium members. First, a new and well-resourced network of schools dedicated to enhancing STEM education will be created. This network of public and private schools will be characterized by a shared commitment to STEM education. Importantly, these schools will stand as examples of what elementary and middle schools can do to provide high quality STEM learning experiences without becoming dedicated STEM schools. The MCESC’s capacity to effect meaningful change will be dramatically increased because of the creation of a new cadre of teacher leaders who can provide on-going job embedded professional development in the years ahead. Finally, from an organizational perspective, the ability to offer teacher professional development on STEM education knowing that teachers will have access to all of the STEM technology and resources necessary to implement new instructional strategies is an exciting proposition.
E) SUBSTANTIAL IMPACT AND LASTING VALUE - Impact, evaluation, and replication

The responses in this section are focused on the ability to design a method for evaluating the project’s capacity for long-term sustainable results. Therefore, the questions focus on the method of defining the problem(s) the project hopes to solve and the measures that will determine if the problem(s) have been solved.

21. 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.

The response should provide a concise explanation of items which provide rationale that will support the probability of successfully achieving the goals of the project. Answers may differ based on the various levels of development that are possible. If the proposal is for a new, never before implemented project, the response should provide logical, coherent explanations of the anticipated results based on some past experience or rationale. For projects that have been implemented on a smaller scale or successfully in other organizations, the response should provide the quantifiable results of the other projects. If available, relevant research in support of this particular proposal should also be included.

Please enter your response below.

The Dayton Regional STEM Center is a division of the Montgomery County Educational Service Center. It has a seven year history of working closely with K-12 schools and teachers across fifty-six school districts to impact student achievement in the STEM disciplines. It is committed to the belief that STEM education can and should be made available to all students. Founded in 2007 with the support of a grant from the National Governor's Association, the state of Ohio and the Montgomery County Educational Service Center, the Dayton Regional STEM Center (DRSC) through its STEM Fellows Program provides yearlong, intensive professional development experiences for K-12 educators. The K-12 STEM Fellows work side-by-side with higher education professionals from local universities and STEM industry research scientists and engineers to develop STEM units of instruction. These problem-based learning experiences are anchored to STEM Industry Clusters critical to the region's economic history and future. All of the instructional design work is grounded in the STEM Education Quality Framework developed for the MCESC in collaboration with the University of Dayton. Over the past five years the MCESC STEM professional development model has served well over 1,000 educators across the nation; had 250 educators participate in the intensive STEM Fellows program; served over 100 Ohio school districts; and developed over 80 units of STEM instruction that are mapped to the Common Core State Standards. For more information, go to http://daytonregionalstemcenter.org/ Here are a collection of facts regarding the capacity of the DRSC and the MCESC to carry-out this proposed Straight A Fund Project. - A past recipient of funding from the National Defense Education Program (NDEP) and the Air Force Research Laboratories (AFRL). - Recognized by the National Defense Education Program as a model STEM Center Program. - Developed the STEM Education Quality Framework which has been endorsed by STEMx, a fourteen state coalition dedicated to promoting STEM education across the United States. - Played a critical role in the establishment of Air Camp USA, a summer residential camp for middle school students. - Provided consultation services on STEM Education in over eight states. - Generated over eight STEM units of instruction. - Supported external evaluations of STEM curriculum deployment verifying positive effects on student achievement based on the usage of the STEM Center’s curriculum. - Collaborated with the University of Dayton’s School of Engineering and School of Education and Allied Professions in implementing a National Science Foundation (NSF) Research Experiences for Teachers (RET) grant.

22. Describe the overall plan to evaluate the impact of the concept, strategy or approaches used in the project.

This plan should include the methodology for measuring all of the project outcomes. Applicants should make sure to outline quantitative approaches to assess progress and measure the overall impact of the project proposal. The response should provide a clear outline of the methods, process, timelines and data requirements for the final analysis of the project's progress, success or failure. The applicant should provide information on how the lessons learned from the project can and will be shared with other education providers in Ohio.

* Include the name and contact information of the person who will be responsible for conducting the evaluation and whether this will be an internal or external evaluation.

Suzanne Franco, EdD, Program Evaluator Wright State University 455 Allyn Hall, Educational Leadership, 3640 Colonel Glenn Hwy., Dayton, Ohio 45435 Phone: 937-775-3673 Email: Suzanne.franc@wright.edu

* 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 project's progress).

Dr. Franco is Professor of Research and Statistics at Wright State University and a Researcher in Residence for the Ohio Research Center at Ohio State University. A former STEM, public school teacher she recently served as the Director of Research and Evaluation at the Dayton Regional STEM School. She is currently engaged in externally funded research related to the following: 1) innovation and engineering for teachers, 2) improving teacher effectiveness, 3) professional development for the Veterans Administration, and 4) Ohio’s Race to the Top school improvement efforts in leadership and performance evaluation. We will employ an external evaluation for the first 2 years. Dr. Franco will be contracted in Year One to deliver two years of evaluation services. We employ internal evaluation for the last 4 years. Evaluation Methods The evaluation methods described below are presented in direct relation to the project goal they were designed to track. Student Achievement (SA) Goal 1.1: Design pre/post measures for students (July-November, 2014); Design data system to track gain scores from pre/post assessments (October-November, 2014). Administer initial pre/post assessments (January, 2014-May, 2015). SA Goal 1.2: Collect baseline OAA data (2013, 2014) for consortia schools and for non-participating schools. Construct statistical summaries of past performance and store in the project data base (October-November, 2014). SA Goal 1.3: Design pre/post measures of STEM career dispositions (July-November, 2014); Administer initial pre/post STEM Career Disposition assessments (January, 2015-May, 2015). Track shifts in career dispositions (October-November, 2014). SA Goal 1.4: Design student observation protocols to collect data related to 21st Century skills (July-November, 2014); Conduct student observations (January, 2014-May, 2015). Analyze data to identify trends in student behaviors as they relate to: Critical thinking and Problem solving, Creativity a

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

Quality program evaluation is frequently a dynamic and recursive process as programs rarely play out in the exact ways they were planned. Dr. Franco as an experienced program evaluator is prepared to make evaluation program adjustments as warranted by unanticipated events, or simply because it becomes clear that an alternate evaluation methodology would be more effective in measuring one or more of the
23. Describe the substantial value and lasting impact which the project hopes to achieve.

The response should provide specific quantifiable measures of the grant outcomes and how the project will lead to successful attainment of the project goals. Applicants should describe how the program or project will continue after the grant period has expired.

Please enter your response below.

In addition to positively impacting student achievement as described in our student achievement goals, this project will foster school cultures where teachers share ideas and experiences as they work together to implement research-based instructional strategies in the STEM disciplines and beyond. Through our teacher-led professional development program we will help form communities of teachers who share a common knowledge base of best practices in STEM education. Finally, by pursuing our shared resources goals we can efficiently establish the technology-enhanced learning environments that students need and deserve. And, we will provide students with teachers who possess the knowledge and skills necessary to interact effectively with those technology-enhanced learning resources. This project is dedicated to helping schools find and sustain the momentum to move away from many traditional school and classroom realities and toward more desired states. We hope that participating in this project can helps schools and teachers... Move away from limited ideas of STEM education toward robust, research based conceptions that can inform teacher practice and student understanding. Move away from learning experiences not enriched by appropriate technologies and STEM equipment toward ones that make such resources readily available and central to the learning process. Move away from a reliance on teacher centered instructional practices and toward more student centered approaches to learning. Move away from a conception of learning as an individual enterprise toward a conception of learning as being enhanced by collaboration and social interaction. Move away from math and science instruction based solely on the acquisition of knowledge and toward instruction that embeds conceptual knowledge in engaging problems and projects. Move away from old notions of schooling with high school graduation as a goal and toward school as preparation for college and career readiness.

24. Describe the specific benchmarks, by goal as answered in question 9, which 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 applicant should provide details on the quantifiable measures of short- and long-term objectives that will be tracked and the source of benchmark comparative data points. Responses should include specified measurement periods and preliminary success points that will be used to validate successful implementation of the project. If a similar project has been successfully implemented in other districts or schools, identification of these comparable benchmarks should be included.

**Student Achievement**

<table>
<thead>
<tr>
<th>Goal 1.1</th>
<th>Design pre/post data measures by 11/30/14. - Design the data management system to track gain scores from pre/post assessments by 11/30/14. - Administer initial pre/post assessments by 5/15/15. - Verify gain scores on pre/post assessments by 11/30/15.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal 1.2</td>
<td>Collect baseline OAA data (13, 14) for grades 5-8 consortium schools by 10/30/14. - Construct statistical summaries of past performance and store in the project data base by 12/30/14. - Track OAA math and science scores for 2016 to 2020 to verify statistically significant gains over time.</td>
</tr>
<tr>
<td>Goal 1.3</td>
<td>Design pre/post measures of STEM career dispositions by 11/30/14. - Administer pre/post STEM Career Disposition assessments by 5/30/15. - Design the data system to track shifts in career dispositions by 12/30/14. - Track shifts in STEM careers dispositions annually through 5/30/16.</td>
</tr>
</tbody>
</table>

* Spending Reduction in the five-year fiscal forecast

* Utilization of a greater share of resources in the classroom

* Implementation of a shared services delivery model

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<tr>
<th>Goal 4.1</th>
<th>Monitor efforts to configure and deploy the 44 STEM Mobile Learning Labs by 1/30/15. - Document activities and dates and prepare quarterly report to program leadership. - Configure and deploy 44 Mobile STEM Learning Labs with accompanying video resources and curriculum by 1/30/2015.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal 4.2</td>
<td>Monitor efforts to deliver training for lead teachers by 12/30/14 - Observe lead teachers implementing the initial STEM Learning Challenges by 3/15/2015. - Verify the efficacy of the lead teacher training in promoting change in teachers' instructional behaviors by 5/30/2015.</td>
</tr>
</tbody>
</table>

* Other Anticipated Outcomes

Other hard to measure goals: Increase in numbers of students pursuing STEM coursework in high school. Increase in numbers of students choosing post-secondary education programs in STEM fields

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

[ ] Yes

[ ] No

If the applicant selects "Yes" to the first part of the question, the response should provide an explanation of the time and effort it would take to implement the project in another district, as well as any plans to share lessons learned with other districts. To every extent possible, applicants should
Yes, one of the strengths of this project is that it has been intentionally designed for ease of replication. As an ESC, service is our business. We have a long history of success in providing the kinds of services necessary to help other districts implement this project. Ohio schools who desire to establish a quality STEM education program for middle grades’ students without having to become dedicated STEM School will find all of the resources and ideas necessary to replicate this program. What will be required of such schools is a willingness to commit the time and to reallocate the resources necessary. Here is how replication will be facilitated: First, all of the technical specifications for the STEM Mobile Learning Labs will be made available allowing districts to purchase identical equipment. Like some of the schools participating in this project they may be easily able to acquire mobile STEM labs by simply reallocating some of the monies already dedicated to traditional technology and science equipment. Second, all of the STEM Learning Challenges curriculum will be available on the Web allowing districts across Ohio to access it for use in their own classrooms. This will be true as well for all seven of the Inspiring STEM Careers videos designed to complement the STEM Learning Challenges. Third, all of the professional development protocols for lead teachers will be documented in terms of workshop objectives, activities, and resources allowing other Ohio districts to conduct the training in their districts. Finally, the Montgomery County ESC through its Dayton Regional STEM Center department of course stands ready to provide technical consultation and professional development for any schools interested in replicating one or more aspects of the project. Additional Requested Information For applicants without an ODE Report Card for 2012­2013, provide a brief narrative explanation of the impact of your grant project on per pupil expenditures or why this metric does not apply to your grant project instead of uploading the Supplemental Financial Reporting Metric. As an educational service center we do not receive an ODE Report Card. However, we believe that our grant will make a substantive impact on per pupil expenditures for a couple of reasons. First, as was stated in answer to Question 14, the project will save the participating schools $677,911. Much of this savings will come in the form of reductions in technology spending and reductions in professional development costs. Importantly, both of these savings represent impacts that can affect per pupil expenditures beyond Fiscal Year 2020. For example, the trainer-the-trainer model of teacher-lead professional development is akin to the “fish a man to fish and he can feed himself forever” idea. We will be providing the consortium member schools with highly trained lead teachers who will possess the knowledge and skills to lead their districts forward in the STEM education arena for years and years to come. Each year they do so will mean another year where the school will not have to rely on external experts or trainers. Second, the introduction of digital curriculum to the schools and the fact that the participating teachers will gain confidence and competence in employing digital resources may also impact per pupil expenditure beyond Fiscal Year 2020 as teachers learn to rely less on traditional textbooks.

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 time frame. The Governing Board of the Straight A Fund reserves the right to conduct an evaluation of the project and request additional information in the form of data, surveys, interviews, focus groups and other related data on behalf of the General Assembly, Governor and other interested parties for an overall evaluation of the Straight A Fund.

PROGRAM ASSURANCES: I agree, on behalf of this applicant, and any or all identified consortium members or partners, that all supporting documents contain information approved by a relevant executive board or its equivalent and to abide by all assurances outlined in the Straight A Assurances (available in the document library section of the CCIP).

I agree, on behalf of this applicant, and any or all identified consortium members or partners, that all supporting documents contain information approved by a relevant executive board or its equivalent and to abide by all assurances outlined in the Straight A Assurances (available in the document library section of the CCIP). Shannon M. Cox Executive Director Montgomery County ESC
## Consortium Contacts

<table>
<thead>
<tr>
<th>First Name</th>
<th>Last Name</th>
<th>Telephone Number</th>
<th>Email Address</th>
<th>Organization Name</th>
<th>IRN</th>
<th>Address</th>
<th>Delete Contact</th>
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</thead>
<tbody>
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<td>Suzanne</td>
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<td>Margaret</td>
<td>Pinnell</td>
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<td>University of Dayton</td>
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<td>Gloria</td>
<td>Shurski</td>
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<td>Mopi16</td>
<td></td>
<td>1400 E Angela Blvd., #132, South Bend, Indiana, 46617</td>
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<tr>
<td>First Name</td>
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<td>Title</td>
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<tr>
<td>Dr. Margaret</td>
<td>Pinnell</td>
<td>Professor of Engineering, University of Dayton</td>
<td>Engineering Design Consultant. Dr. Pinnell will provide technical oversight in the design and development of the engineering design challenges which will be central to each STEM Learning Challenge.</td>
<td>Extensive involvement in K-12 STEM education programming and principal investigator for multiple state and federal grants focused on the professional development of pre-service and in-service teachers for STEM education.</td>
<td>Dr. Pinnell has been actively involved in supporting the Montgomery County ESC's STEM education programs as a STEM Higher Education Senior Fellow. She is actively involved in outreach programs with K-12 schools and has facilitated service-learning courses for teachers and engineering students that promote interest in STEM among 7th and 8th grade students in the Dayton Public Schools.</td>
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<tr>
<td>Gina</td>
<td>Anderson</td>
<td>Chief Executive Officer, Mopi16</td>
<td>Digital Curriculum Developer Gina will provide leadership for the development of the digital STEM Learning Challenges curriculum.</td>
<td>Gina has extensive experience in the design and development of digital curriculum and assessment tools. She is CEO of Mopi16 a digital media development firm. Gina has over 15 years of experience in instructional design, instructional technology, leadership and mentoring of teachers in best practices in the design and use of digital media. She was honored with a Chancellor’s fellowship to study Instructional Systems Technology at Indiana University, where she has completed her doctoral coursework and expects to earn her doctorate in 2015 with a minor in Learning Science.</td>
<td>Gina has worked as a director of online learning, instructional designer, instructional technologist, researcher, online facilitator, and subject matter expert. Gina's special education background and K-12 teaching experience gives her a diverse perspective on how to design instruction for all learners.</td>
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<tr>
<td>Becky</td>
<td>Hagan</td>
<td>Curriculum Supervisor, Brookville Local Schools</td>
<td>Brookville LSD Liaison-ensure use of curriculum and overall grant participation, data management and collection, trained to be trainer at district level for all PD associated</td>
<td>11 years of Educational Administrative Experience, Curriculum Specialist and Supervisor</td>
<td>Former Building Principal, ODE trainer</td>
<td></td>
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</tr>
<tr>
<td>Dena</td>
<td>Shepard</td>
<td>Curriculum Supervisor, New Lebanon Local Schools</td>
<td>New Lebanon LSD Liaison- ensure use of curriculum and overall grant participation, data management and collection, trained to be trainer at district level for all PD associated</td>
<td>Current RttT Grant Award Manager, Curriculum Specialist and Supervisor</td>
<td>Former State Support Team Consultant for Region 10, ODE trainer</td>
<td></td>
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</tr>
<tr>
<td>Gloria</td>
<td>Skurski</td>
<td>Chief Content</td>
<td>Video Production</td>
<td>Since joining PBS in 1995</td>
<td>Gloria began her broadcast</td>
<td></td>
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<tr>
<td>Name</td>
<td>Title (School District)</td>
<td>Responsibilities</td>
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<tr>
<td>Gloria</td>
<td>Specialist, Officer for Public Media Connect and its stations, CET in Cincinnati and ThinkTV</td>
<td>She will oversee the video-production team responsible for developing the Inspiring STEM Careers video series that will complement and enhance the STEM Learning Challenges digital curriculum. She has been responsible for the development of both broadcast and non-broadcast initiatives, including documentaries, cultural programming, public affairs programming and multimedia educational projects, and is the winner of three Midwest Regional Emmy Awards. Educational media credits include Engineering Your Future; STEM Career Lab, and Designing Your Future. She also oversees CET's and ThinkTV's services to K-12 schools, in addition to early childhood programs and digital educational services.</td>
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<tr>
<td>Tom</td>
<td>STEM Teacher, Greenon Local Schools</td>
<td>Lead Teacher Trainer. Tom will be a co-trainer of the project's lead teachers.</td>
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<tr>
<td>Ben</td>
<td>STEM Teacher, Kettering City Schools</td>
<td>Lead Teacher Co-Trainer. Ben will be a co-trainer of the project's lead teachers.</td>
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<td>Susan</td>
<td>Curriculum Supervisor, Northridge Local Schools</td>
<td>Northridge LSD Liaison- ensure use of curriculum and overall grant participation, data management and collection, trained to be trainer at district level for all PD associated. 5 years of ESC Educational Administrative Experience, Battelle For Kids Value Added Regional Specialist.</td>
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<tr>
<td>Susan</td>
<td>Curriculum Supervisor, Valley View Local Schools</td>
<td>Valley View LSD Liaison- ensure use of curriculum and overall grant participation, data management and collection, trained to be trainer at district. Curriculum Specialist and Supervisor. Former classroom teacher.</td>
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Prior to his current teaching position at Indian Valley Middle School in the Greenon Local Schools, Tom taught math and science at Schaefer Middle School in the Springfield City School District. Prior to working in his current science teaching position at Van Buren Middle School in the Kettering City Schools Ben also worked at Van Buren in other teaching capacities including special education, language arts, and math.
<p>| Chrissy Buschur | Principal, St. Helens School | St Helens Liaison - ensure use of curriculum and overall grant participation, data management and collection, trained to be trainer at district level for all PD associated | Holds a Bachelor of Science in Education from Bowling Green State University. She has a license in Elementary Education (grades 1-8) and Education of the Handicapped (K-12). She will graduate from the University of Dayton with her Masters in Educational Leadership. | Has served the Archdiocese of Cincinnati for 13 years, the past seven as a fourth grade teacher at St. Helen School. She was instrumental in the success of the Math Professional Learning Community involving Dayton area Catholic School Teachers. |
| Beth Allaire | 8th Grade STEM Teacher, Bishop Leibold School | Bishop Leibold Liaison - ensure use of curriculum and overall grant participation, data management and collection, trained to be trainer at district level for all PD associated | STEM Coordinator for grades K-8 with over 250 hours of training on elementary science education through workshops and college courses in addition to 75 hours of training from NASA and Civil Air Patrol on aerospace education. | 8 years full time as a Middle School Math and Science Teacher. Part-time teaching for 15 years through BLS Quest Math and Science After-School Enrichment Program and NASA's Science, Engineering, Mathematics, and Aerospace Academy. Camp Director and Teacher for the BLS Summer Science Camp and BLS Summer Robotics Camp. |
| Dr. James Rowley | Dayton Regional STEM Center Director | Principal Investigator. Dr. Rowley will assume responsibility for oversight and management of the project. | Dr. Rowley has extensive experience in managing state and federal program grants in excess of 2 million dollars. He is the author of the nationally validated STEM Education Quality Framework. He has worked with STEM education programs across the United States. | Following a twenty year career as a high school teacher of Environmental Science, Dr. Rowley served for twenty-three years as a Professor Education at the University of Dayton. In that role, he designed and taught graduate courses on Problem Based Learning and served as the Executive Director of the Institute for Technology-Enhanced Learning. |
| Sandra Preiss | Sayton Regional STEM Center Coordinator | Contracted Project Director. Sandi will be responsible for day-to-day project operations. In that role she will be the primary liaison with the consortium member lead contacts and lead teachers. | Sandi holds an interdisciplinary Master's Degree in Engineering Innovation and Professional Leadership from the University of Dayton. She has led innovative, educational initiatives across several organizations at the state, private, and federal levels. She has expertise in STEM education methods, STEM teacher training, and STEM educator assessments. Her role as Coordinator includes project management, industry and collegiate collaboration, grant writing, innovation methods, and curriculum generation. | For the past four years she has worked for the Montgomery County Educational Service Center as the Coordinator for the Dayton Regional STEM Center. Previously she was a Life Sciences and Outdoor Education teacher for the Trotwood Madison Schools. |
| Dr. Suzanne Franco | Professor of Research and Statistics, WSU | Project Evaluator. Dr. Franco will provide program evaluation services through fiscal year 2016. She will be responsible for the design of all evaluation instruments and projects. | Dr. Franco is Professor of Research and Statistics at Wright State University and a Researcher in Residence for the Ohio Research Center at Ohio State University. She is currently engaged in externally funded research related to the following: 1) innovation and 2) evaluation. | A former STEM, public school teacher she recently served as the Director of Research and Evaluation at the Dayton Regional STEM School. |</p>
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<tr>
<th>Tony Thomas</th>
<th>Assistant Superintendent, Northmont City Schools</th>
<th>Northmont LSD Liaison- ensure use of curriculum and overall grant participation, data management and collection, trained to be trainer at district level for all PD associated</th>
<th>16 years of Educational Administrative Experience</th>
<th>Former Building Principal, Curriculum Specialist and Supervisor, Former Superintendent of a district with STEM Education Focus</th>
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<tr>
<td>Krista Wagner</td>
<td>Curriculum Supervisor, Mad River Local Schools</td>
<td>Mad River LSD Liaison- ensure use of curriculum and overall grant participation, data management and collection, trained to be trainer at district level for all PD associated</td>
<td>3 years of Educational Administrative Experience, Curriculum Specialist and Supervisor</td>
<td>Former Building Principal</td>
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