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Adjusted Allocation 0.00

Remaining -263,056.00
Please respond to the prompts or questions in the areas listed below in a narrative form.

A) APPLICANT INFORMATION - General Information

1. Project Title:
C-STEM @ NWLSD

2. Project Tweet: Please limit your responses to 140 characters.
C-STEM is an engaging middle school program aimed at using computer programming and robotics to improve students achievement in mathematics. **This is an ultra-concise introduction to the project.**

3. Estimate of total students at each grade level to be directly impacted each year.
This is the number of students that will receive services or other benefits as a direct result of implementing this project. This does not include students that may be impacted if the project is replicated or scaled up in the future. It excludes students who have merely a tangential or indirect benefit (such as students having use of improved facilities, equipment etc. for other uses than those intended as a part of the project). The Grant Year is the year in which funds are received from the Ohio Department of Education. Years 1 through 5 are the sustainability years during which the project must be fiscally and programmatically sustained.

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<td>5 384 6 192 7 192 8</td>
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</table>
4. **Explanation of any additional students to be impacted throughout the life of the project.**

   *This includes any students impacted indirectly and estimates of students who might be impacted through replication or an increase in the scope of the original project.*

   Implementation of the C-STEM program at Northwest Local School District (NWLSD) will directly impact 768 middle school students. This intervention at the middle school level should also have an indirect impact on these student's success in future high school mathematics courses. If we find this intervention to be successful there is the possibility of adding other C-STEM courses such as Algebra 1 with Computing into our two high schools. In addition, our plan will provide professional development on core math instruction for up to 25 elementary and middle school math teachers. This PD has the potential to impact up to 750 elementary and middle school students each year in their core mathematics courses. Finally, the mathematics and science specialist along with reps from Xavier University and Hamilton County ESC will become certified as C-STEM trainers. This will allow teachers from other Ohio districts to be trained on the C-STEM program for potential expansion in the future.

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

   - First and last name of contact for lead applicant
     Leslie Silbernagel

   - Organizational name of lead applicant
     Northwest Local School District

   - Address of lead applicant
     3240 Banning Rd. Cincinnati Ohio 45239

   - Phone Number of lead applicant
     513 923-1000 x3934

   - Email Address of lead applicant
     lsilbernagel@nwlsd.org

   Community School Applicants: After your application has been submitted and is in Authorized Representative Approved status an email will be sent to your sponsoring entity automatically informing the sponsor of your application.

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

7. **Are you partnering with anyone to plan, implement, or evaluate your project? - Select one checkbox below**

   - Yes
   - No

   If you are partnering with anyone, please list all partners (vendors, service providers, sponsors, management companies, schools, districts, ESCs, IHEs) by name on the "Partnering Member" page by clicking on the link below.

   Add Partnering Members

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

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. The following questions will address specific outcomes and measures of success.*

   a. **The current state or problem to be solved; and**

      Middle school students in the NWLSD are struggling in mathematics, with state test scores consistently falling below state expectations and steadily declining. Less than 60% of NWLSD 6th graders scored proficient or higher on the 2014-15 state math assessment; while this number dipped below 40% for the 8th grade. 57.4% of students in grades 6-8 scored below the 50th percentile on fall NWEA MAP math assessments. Our middle school math deficiencies translate into a lack of readiness on tests of high school, college, and career readiness. In 2015, 60% of our 9th grade students were rated as substantially below the readiness level on the ACT Aspire. Our average ACT Math score is 19.93, well below Ohio’s college readiness benchmark of 22. We are also concerned about the demographic makeup of students entering STEM programs in our district. Student enrollment in our engineering program, for example, is currently 92.5% male and 80% white, which is not representative of our total enrollment.
Starting in the fall of 2016 NWLSD would like to adopt three C-STEM courses to replace our current intervention mathematics courses at grades 6, 7 and 8. The C-Stem program from UC Davis is an innovative approach to improve student achievement in mathematics through engaging lessons using computer programming and robotics. The C-STEM program has two goals: first, close the achievement gap in mathematics by broadening participation of students traditionally underrepresented in computing and STEM related careers. The second goal of the program is to develop 21st century problem solving skills to tackle real world concerns through integrated computing and STEM education. C-STEM is NSF funded and integrates project based computing and robotics activities that align with Ohio’s Learning Standards for Mathematics. Projects allow students to see real life applications of mathematics concepts as well as help students develop critical thinking and problems solving skills all while preparing students to be college and career ready. At the 6th grade level, students will take the C-STEM course titled Exploring Mathematics with Computing and Robotics. This course explores mathematical concepts in the Ohio’s Learning Standards for Math through practical applications with hands-on and fun computing and robotics activities. Students write C/C++ computer programs to control a single robot or multiple robots. Through both personalized and collaborative group computing and robotics activities, students learn and reinforce the algebraic thinking with arithmetic operations in whole and decimal numbers, fractions, measurement, variables, data conversion, lines, angles, ratios and proportions. The hands-on computing and experiments help students make meaningful connections between abstract math concepts and their relevance to real-life applications, as well as help develop students critical thinking and problem solving skills. This course will run as a semester long elective allowing up to 128 students at each middle school to experience this course. At the 7th and 8th grade level, students will take the C-STEM courses titled Math 7 with Computing and Math 8 with Computing. This year long course will be taken in addition to our current Math 7 and Math 8 courses. Students in need of math intervention will be placed into this course based on multiple data points such as OCBA and MAP math scores from the previous school year. Both courses use computing to develop and expand the students’ understanding of Math 7 or Math 8 topics. In both courses, students analyze real life situations, identify given information, formulate mathematics steps to find a solution, and analyze the results for accuracy, all within the context of computer programming. The logical process of computer programing allow students to organize their approach to problem solving and efficiently analyze and correct their work. Robotic extension activities allow students to reenact physically derived mathematical problems through robotics technologies to visualize situations, association graphs with physical phenomena, predict and identify key features of the graphs with the specific physical situation, and solve physical problems through algebraic means. In addition to implementing the C-STEM program, math and special education teachers from NWLSD will be provided the opportunity to participate in free professional development directly related to improving core math instruction. Through a partnership with Xavier University, three courses will be offered to up to 25 teachers from the district at no cost. These courses include Mathematics as a Second Language, Algebra and Functions, and Number Theory for teachers. These courses are part of Xavier's new Math Specialist Endorsement program and are proctored by a content specialist and pedagogy specialist. Each course will be taught after school at a central district location so teachers do not have to travel far to attend.

### a. Student achievement

#### i. List the desired outcomes.

**Examples: fewer students retained at 3rd grade, increase in graduation rate, increased proficiency rate in a content area, etc.**

As a result of implementing the C-STEM project we hope to provide engaging mathematics remediation to at risk or under performing middle school students. We also hope the professional development partnership with Xavier University will result in improved core mathematics instruction. As a result of implementing this program we hope to see a 10% increase in 7th and 8th grade state assessments scores over a 3 year period. An additional goal of the project is to increase underrepresented and economically disadvantaged students interest in STEM fields. If the C-STEM proves to be successful, long term goals of the project include expanding the C-STEM program to high school grades in the Northwest Local School District and expanding the C-STEM program to other districts in the state of Ohio.

#### ii. What assumptions must be true for this outcome to be realized?

**Examples: early diagnosis and intervention are needed to support all children learning to read on grade level; project-based learning results in higher levels of student engagement and learning, etc.**

Recognizing that significant systemic change takes time, our desired outcomes include: increased student achievement on state and local math assessments and tests of college and career readiness, increased student participation in STEM programs and courses, and the inclusion of higher numbers of underrepresented and economically disadvantaged students in this challenging and engaging coursework. Achieving these outcomes will require adequate training for teachers, timely access to instructional materials, implementation of the program with fidelity, on-going monitoring of implementation and student progress, and regular teacher collaboration between our C-STEM and Math teachers. Success will also require active recruitment and promotion of the program, with a specific focus on historically underrepresented student populations. Finally, for results to be realized we must have district teachers successfully complete the Xavier courses and implement what they learn in their classrooms.

#### iii. Describe any early efforts you have made to test these assumptions (pilot implementation, etc), or how these are well-supported by the literature.

The initial field testing of the Center's offerings demonstrated tremendous success at engaging students from diverse backgrounds in learning algebra, computing, and engineering. Providing students with skills needed to succeed in college and the workplace in the 21st century, the CSTEM program has profoundly changed the lives of young people who are traditionally underrepresented in STEM fields. Working with the C-STEM program for nearly five years, the robotics and engineering program in one of the C-STEM partner high schools grew from 20 mostly male students (with only two females out of 20 students) to two classes with more than 60 students, of which over one third are female. Engaged in various C-STEM programs, the grades for one of these students went from all F's before the the program three years ago to straight A's last semester. The student graduated in 2012 and entered college majoring in computer science. As another example, focusing on improving academic performance on STEM subjects and preparing for post?secondary studies and careers in STEM fields, most members of the Computing and Robotics Clubs of the C-STEM partner schools are from underrepresented groups including women. The C-STEM program aims to close the achievement gap. For example, the North Area Community School in the Sacramento County Office of Education (SCOE) is an alternative school. The school aims to address the needs of students who have not been
successful in traditional school settings with the C-STEM curriculum integrated with hands-on engaging computing and robotics activities. A team of students from the North Area Community School in the Sacramento County Office of Education (SCOE) won the 1st place in the 2012 RoboPlay Robot Dance Competition. The event has a profound impact on students and inspires them to pursue STEM related careers and post secondary studies. C-STEM program success cases In 2015, a team from Roosevelt Middle School in Oakland Unified School District participated for the first time in the CSTEM Day RoboPlay Challenge Competition. Nearly 90% of students in the school are in the free lunch or reduced lunch program and they have a large number of English Language Learners. As the RoboPlay Challenge is a level playing field robot competition, regardless of students’ social/economic status and background, any team has the possibility of success. The team won the 3rd place in the UC Davis Regional Competition. Susan Johnson, a C?STEM math teacher from Livermore High School, reported that all four female team members of last year’s RoboPlay Challenge Competition went on to college and majored in STEM fields. This was a huge shift in their educational trajectory, as none of them would have considered computer science majors, had they not participated in the C-STEM program. The C-STEM program has shown great promise in closing the math achievement gap for schools with a large percentage of underrepresented groups. Hillcrest High School in Alvord Unified School District is a suburban school located in the southern region of Riverside, CA. The student population of 1,788 students is comprised of 65% Hispanic/Latino, 17% White, 7% African American, 6% Asian, and 3% Filipino, with the remaining 2% unknown. Many of their students come from low income families and parents who have not completed a high school education. 63% of the students participate in a free or reduced fee lunch program and 16% are English language learners. C-STEM students regularly performed at a higher level on common formative assessments that were given throughout the site. 94% of students in C-STEM Integrated Math II were able to earn passing marks, compared to the site average of 61% passing rate in non C?STEM Integrated Math II courses. 92% of students who took the C-STEM Integrated Math II with Computing and Robotics last year continue on to take C-STEM Integrated Math III with Computing and Robotics this year.

iv. List the specific indicators that you will use to measure progress toward your desired outcome. 
*These should be measurable changes, not merely the accomplishment of tasks. Example: Teachers will each implement one new project using new collaborative instructional skills, (indicates a change in the classroom) NOT; teachers will be trained in collaborative instruction (which may or may not result in change).*

Implementation of the C-Stem program will be monitored for fidelity through a partnership with Xavier University using an implementation protocol and walkthroughs. We will use 3 administrations of district created benchmark assessments and the NWEA MAP assessment to monitor progress toward our desired outcomes related to student achievement. Surveys will be used continuously throughout implementation to monitor student and parent satisfaction and attitude toward STEM related fields. The college and career readiness of participants will be monitored over time using the ACT and Aspire as well as enrollment in STEM courses and programs in the high school.

v. List and describe pertinent data points that you will use to measure student achievement, providing baseline data to be used for future comparison.

We will use several data points to track and monitor student achievement. As a result of project implementation we are expecting a 5-10% increase in math achievement over a 3-year period. Baseline achievement data is as follows: OCBA (2014-15) - percent proficient 6th (59.6%), 7th (63.7%), 8th (39.7%); NWEA MAP (Fall 2015-16) - percent at or above the 50th percentile (42.6%); ACT Aspire (Fall 2015-16) - 60% In Need of Support; and ACT Math (2015-16) - average score 19.93. Using state and local math assessment data from multiple sources will allow us to track the achievement of students in the C-STEM program and to compare their results to those of other students in our district and across the state.

vi. How are you prepared to alter the course of your project if assumptions prove false or outcomes are not realized?

The initial field testing of the Center’s offerings has demonstrated tremendous success at engaging students from diverse backgrounds in learning algebra, computing, and engineering while providing students with the necessary 21st Century skills to succeed in college and the workplace. While this research shows that C?STEM programs profoundly change the lives of young men and women who are traditionally underrepresented in STEM fields, we are prepared to monitor and adjust our supports as needed. As with any new program, we expect a possible decline in success during our initial year of implementation due to staff changes, professional development for C-STEM teachers and evaluators, and utilizing current data to identify students to participate in the program. While monitoring the implementation, we also expect to engage various stakeholders (parents, community members and business partners) to provide additional input and support for our C-STEM staff and students. If outcomes are not realized we are prepared to offer additional training to C-STEM and mathematics teachers beyond the first year of implementation. Each building will also look at possible staffing changes to facilitate the best match of teaching styles of staff assigned to the remediation courses. Finally, we are prepared to reconsider the criteria used to identify students for the C-STEM program in the future if results do not meet our expectations.

b. Spending reductions in the 5 year forecast

i. List the desired outcomes.
*Examples: lowered facility cost as a result of transition to more efficient systems of heating and lighting, etc.; or cost savings due to transition from textbook to digital resources for teaching.*

ii. What assumptions must be true for this outcome to be realized?
*Example: transition to “green energy” solutions produce financial efficiencies, etc.; or available digital resources are equivalent to or better than previously purchased textbooks.*

iii. Describe any early efforts you have made to test these assumptions (pilot implementation, etc), or how these are well-supported by the literature.

iv. Please enter the Net Cost Savings from your FIT.

v. List and describe the budget line items where spending reductions will occur.
vi. How are you prepared to alter the course of your project if assumptions prove false or outcomes are not realized?

- c. Utilization of a greater share of resources in the classroom

   i. List the desired outcomes.
   Example: change the ratio of leadership time spent in response to discipline issues to the time available for curricular leadership.

   ii. What assumptions must be true for this outcome to be realized?
   Examples: improvements to school and classroom climate will result in fewer disciplinary instances allowing leadership to devote more time to curricular oversight.

   iii. Describe any early efforts you have made to test these assumptions (pilot implementation, etc), or how these are well-supported by the literature.

   iv. Please provide the most recent instructional spending percentage (from the annual Ohio School Report Card) and discuss any impact you anticipate as a result of this project.
   Note: this is the preferred indicator for this goal.

   v. List any additional indicators that you will use to monitor progress toward your desired outcome. Provide baseline data if available.
   These should be specific outcomes, not just the accomplishment of tasks. Example: fewer instances of playground fighting.

   vi. How are you prepared to alter the course of your project if assumptions prove false or outcomes are not realized?

- d. Implementing a shared services delivery model

   i. List the desired outcomes.
   Examples: increase in quality and quantity of employment applications to districts; greater efficiency in delivery of transportation services, etc.

   ii. What assumptions must be true for this outcome to be realized?
   Example: neighboring districts have overlapping needs in administrative areas that can be combined to create efficiencies.

   iii. Describe any early efforts you have made to test these assumptions (pilot implementation, data analysis etc), or how these are well-supported by the literature.

   iv. List the specific indicators that you will use to monitor progress toward your desired outcomes.
   These should be measurable changes, not the accomplishment of tasks.
   Example: consolidation of transportation services between two districts.

   v. List and describe pertinent data points that you will use to evaluate the success of your efforts, providing baseline data to be used for future comparison.
   Example: change in the number of school buses or miles travelled.

   vi. How are you prepared to alter the course of your project if assumptions prove false or outcomes are not realized?

10. Which of the following best describes the proposed project? - (Select one)
   - a. New - Never before implemented
   - b. Existing - Never implemented in your community school or school district but proven successful in other educational environments
   - c. Replication - Expansion or new implementation of a previous Straight A Project
   - d. Mixed Concept - Incorporates new and existing elements
C) BUDGET AND SUSTAINABILITY

11. Financial Information: - All applicants must enter or upload the following supporting information. The information in these documents must correspond to your responses in questions 12-19.
   a. Enter a project budget in CCIP (by clicking the link below)
   b. If applicable, upload the Consortium Budget Worksheet (by clicking the Upload Documents link below)
   c. Upload the Financial Impact Table (by clicking the Upload Documents link below)

   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 of the workbook. Applicants must submit one Financial Impact Table with each application. For consortium applications, please add additional sheets instead of submitting separate Financial Impact Tables.

263,056.00 12. What is the amount of this grant request?

13. Provide a brief narrative explanation of the overall budget. Responses should provide a 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.

$14,400 in Instruction/Purchased Services - $14,400 is budgeted for the C-STEM licensing fees ($800 per building per year with a six year contract.) $15,300 in Instruction/Supplies - $900.00 is budgeted for licenses to access the electronic C-STEM curriculum. $14,400 is budgeted for the required textbooks (96 books at each of 3 buildings $50 per book) $73,191.00 in Instruction/Capital Outlay - $50,400 is budgeted for computers ( 96 Thinkpads @ $525 each that include maintenance agreements). $22,971 is budgeted for robots and robot accessories. $7,500 in Governance/Admin/Purchased Services - $7,500 is budgeted for program evaluation through Xavier University (100 hours @ $75.00 per hour). $148,165 in Professional Development/Purchased Services - $16,000 is budgeted for initial and train the trainer C-STEM professional development through UC-Davis. $1665 is budgeted for subs for training. $130,500 is budgeted for Xavier tuition for math professional development. $4,500 in Professional Development Supplies - $4,500 is budgeted for textbooks required for Xavier courses.

14. Please provide an estimate of the total costs associated with maintaining this program through each of the five years following the initial grant implementation year (sustainability costs). This is the sum of expenditures from Section A of the Financial Impact Table.

   2,520.00 a. Sustainability Year 1
   2,520.00 b. Sustainability Year 2
   2,520.00 c. Sustainability Year 3
   2,520.00 d. Sustainability Year 4
   2,520.00 e. Sustainability Year 5

15. Please provide a narrative explanation of sustainability costs. Sustainability costs include any ongoing spending related to the grant project after June 30, 2017. Examples of sustainability costs include annual professional development, staffing costs, equipment maintenance, and software license agreements. To every extent possible, rationale for the specific amounts given should be outlined. The costs outlined in this 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.

   The curriculum provided by this grant is replacing the curriculum used in a current math intervention program. Current staff will be trained to implement the program. No additional instructional staff is required for implementation or sustainability. We anticipate the need for a 1-day professional development each year to provide continuous professional development to teachers on this curriculum. Because we are training several district employees and partners to be C-STEM trainers as part of the implementation, the costs will be limited to extra pay for teachers to attend the one-day professional development outside of work hours. Our district pays teachers $150.00 per day for professional development outside of regular contracted days/hours. Other participants would be under contract and would not require extra pay. We recognize that there may be additional costs each year to replace broken and damaged robots and have included funds for replacement parts as sustainability costs.

16. What percentage of these costs will be met through cost savings achieved through implementation of the program?

   Total cost savings from section B of the Financial Impact Table divided by total sustainability cost from section A of the Financial Impact Table. If the calculated amount is greater than 100, enter 100 here.

17. Please explain how these cost savings will be derived from the program.

   Applicants who selected spending reductions in the five-year forecast as a goal must identify those expected savings in questions 16 and 17. All spending reductions must be verifiable, permanent, and credible. Explanation of savings must be specific as to staff counts; salary/benefits; equipment costs; etc.

   We anticipate a reduction in the number of students who would require additional math intervention that is now provided through APEX on-line courses. We have included a reduction of 20 licenses at $100 per license per year that will need to be purchased as a result of the
Implementation of the C-STEM curriculum. We believe that this is a low estimate of the number of licenses that can be reduced as the implementation progresses and achievement increases. We also have included a savings of approximately $1.00 per child in copying and paper costs because of the one-to-one access to computers and on-line nature of the program. The actual savings on copying and paper has the potential to be much greater as the implementation of C-STEM continues. Our estimate of cost savings per year totals $2,700 which covers the sustainability costs that we believe will be incurred.

**0 18. What percentage of sustainability costs will be met through reallocation of savings from elsewhere in the general budget?**

Total reallocation from section C of the Financial Impact Table divided by total sustainability cost from section A of the Financial Impact Table

Note: the responses to questions 16 and 18 must total 100%

**19. Please explain the source of these reallocated funds.**

Reallocation of funds implies that a reduction has been made elsewhere in the budget. Straight A encourages projects to determine up front what can be replaced in order to ensure the life of the innovative project.

**D) IMPLEMENTATION**

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

This response should include a list of qualifications for the applicant and others associated with the grant. Please list key personnel only. 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 Key Personnel information by clicking the link below:

Add Implementation Team

For Questions 21-23 please describe each phase of your project including its timeline, and scope of work.

A complete response to these questions will demonstrate awareness of the context in which the project will be implemented and the time it will take to implement the project with fidelity. A strong plan for implementing, communicating and coordinating the project should be apparent, including coordination and communication in and amongst members of the consortium or partnership (if applicable). Not every specific action step need be included, but the outline of the major steps should demonstrate a thoughtful plan for achieving the goals of the project. The timeline should reflect significant and important milestones in an appropriate time frame.

**21. Planning**

a. Date Range July 2016 - October 2017

b. Scope of activities - include all specific completion benchmarks.

Notify all parties involved of the grant award - July 2016 Order materials (textbooks, computers, robotic equipment etc.) - August 2016 Plan C-STEM PD dates with C-STEM, Xavier, HCESC - August 2016 Finalize arrangements for Xavier PD and register teachers - August 2016 Create student and parent surveys - August 2016 Analysis of 7th and 8th grade OCBA and MAP Data for placement. - August 2016 Students scheduled into 6th grade elective - August 2016 Computers set up and installed at the 3 middle schools -August/September 2016

**22. Implementation (grant funded start-up activities)**

a. Date Range Sept 2016 - June 2017

b. Scope of activities - include all specific completion benchmarks.


**23. Programmatic Sustainability (years following implementation, including institutionalization of program, evaluation and communication of program outcomes)**

a. Date Range June 2017 - June 2022

b. Scope of activities - include all specific completion benchmarks.

New teachers trained on the C-STEM program as needed - Summers 2017-2021 Possible expansion into the Algebra I at the two high schools. SY 2018-2019 Possible program expansion into other districts in the state of Ohio. Summers 2017-2021 Ongoing monitoring on district common assessments, MAP and OCBA for student progress - June 2017 - June 2022 The courses are running at the 3 middle school buildings - August 2017 - June 2022 Teachers meet monthly to discuss progress and troubleshoot - August 2017 - June 2022 Monitoring of implementation by Xavier University- Sept 2016 -May 2017 Conduct student and parent survey- Sept 2016 & May 2017 Teachers from Xavier courses implement improved instruction - August 2017 - June 2022 Track high school math achievement and graduation status of students directly impacted by the program - August 2017 - June 2022 Track enrollment in Butler Tech STEM programs to monitor underrepresented
E) SUBSTANTIAL IMPACT AND LASTING VALUE

24. 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 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:

The instruction in our intervention classes is currently a traditional remediation and re-teaching of concepts in a way that mirrors the current classroom instruction. Teachers have worked to align the remediation to the current concepts being taught in the math classroom and promoted the use of shared data between the core and intervention teachers. Moving forward, the intervention class will continue to focus on the same content but allow students the ability to apply the concepts during the instruction. This problem based approach will promote critical thinking and problem solving around math concepts needing reinforcement and allow students a different way to learn. Instructionally we will begin to embed the concepts from 21st century learning into the intervention class. Students will be collaborating in groups, thinking critically, and communicating solutions to problems. The change in practices will align with some of the career technical programs at the high school and allow partnerships between the intervention class and the STEM career classes at the high school. Through the partnership with Xavier, we will be able to expose our teachers to new models of teaching and updated pedagogy. With the expertise of Xavier professors, our teachers will gain access to the most current research concerning math instruction and deepen their understanding of how to teach Ohio’s Math Learning Standards to the rigor intended in the model curriculum. Exposure to updated instructional techniques will allow our teachers to fully utilize the teacher based team model to respond appropriately to student data with intentional and strategic lessons for all level of learners. During weekly TBT meetings, teachers will be able to share key elements from their courses with fellow teachers to promote active learning and sharing of best practices. Through the C-STEM curriculum and the Xavier courses, we expect to see math instruction improve as evidenced through the implementa

25. Please provide the name and contact information for the person and/or organization who will oversee the evaluation of this project.

Projects may be evaluated either internally or externally. However, evaluation must be ongoing throughout the entire period of sustainability and have the capacity to provide the Ohio Department of Education with clear metrics related to each selected goal.

Please enter your response below:

Dr. Debora Kuchey Associate Professor Xavier University Department of Childhood Education and Literacy 3800 Victory Parkway Cincinnati, Ohio 45207-3231 Office: Hailstones 317; 513-745-3714 Cellular: 513-703-1806 Fax: 513-745-3504 kuchey@xavier.edu

26. Describe the overall plan for evaluation, including plans for data collection, underlying research rationale, measurement timelines and methods of analysis.

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 shortfall. The applicant should provide information on how the lessons learned from the project can and will be shared with other education providers in Ohio. Note: A complete and comprehensive version of the evaluation plan must be submitted to ODE by all selected projects.

In order to evaluate the effectiveness of the program, multiple data points will be collected and analyzed during the first year of implementation and in years beyond the implementation year. To address fidelity to the C-STEM program implementation we will use internal and external controls. In addition to training the teachers in the program, training will include district curriculum specialists, a representative from Hamilton County Educational Service Center, as well as a math faculty member from Xavier University. Once the training is complete, a walk through document will be created to articulate the teacher implementation indicators. This document will be completed prior to the end of the first quarter of the school year. During quarter two, three, and four, district personnel and the Xavier University faculty member will conduct two walkthroughs per class per quarter. The walkthrough data will be collated and specific feedback for areas of reinforcement and refinement given to each teacher to facilitate alignment and implementation fidelity. Quarterly reports of implementation fidelity will be utilized. At the end of the year, summative walkthrough data will be aggregated from the walkthroughs to determine level of fidelity of implementation for year one with suggestions for professional development to continue alignment in and implementation through year two. Students who experienced the intervention class during the 2015-16 school year will be considered a control group. Their NWEA MAP data, state assessment achievement data, and value added growth data will provide baseline scores for student achievement and growth. This cohort of students will be tracked into high school to determine how many students pursue course work in the STEM field as identified by specific math and science courses as well as STEM oriented career technical program choices. The same data points will be measured and monitored for students during the 2016-17 school year to determine the effect of the C-STEM program on achievement, growth, and course selections as students transition into high school. NWEA MAP scores will be analyzed for differences between the control group and the implementation group for the Fall, Winter, and Spring administration. Professional development is important for improving teacher pedagogy and the impact of teachers on student outcomes. Teachers who participate in the course offerings by Xavier University will be exposed to current theory and application of math instruction. Student growth data measuring the impact of teacher instruction will be used to determine the effectiveness of the professional development opportunity. Data will be analyzed in two different manners to establish reliability of the conclusions. Teachers who participate in the courses will be considered the experimental group and teachers who do not participate will be the control group. NWEA MAP data will be compared at the Fall, Winter, and Spring administration to determine if students exposed to the instruction by teachers in the professional development courses are growing at a significantly greater rate than teachers who do not participate. At the end of the year, state level teacher value added reports will be used to determine if the predictions drawn from the NWEA MAP data were reinforced. In addition, teacher level data from 2016-17 can be compared to teacher level data from 2015-16. This comparison will allow the district to analyze trends
over a two year period to determine if changes in teacher impact on student growth increases statistically from the control group to the experimental group based on their exposure to the professional development.

27. Please describe the likelihood that this project, if successful, can be scaled-up, expanded and/or replicated. Include a description of potential replications both within the district or collaborative group, as well as an estimation of the probability that this solution will prove useful to others. Discuss the possibility of publications, etc., to make others aware of what has been learned in this project.

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 outline how this project can become part of a model so that other districts across the state can take advantage of the learnings from this proposed innovative project. If there is a plan to increase the scale and scope of the project within the district or consortium, it should be noted here.

Based on the success of the implementation of the C-STEM curriculum, the potential to expand the project is inherent in the design of the grant. A network exists to promote success and inform other districts of the success of the program. All three middle schools are part of Making Middle Grades work and would be able to present at High Schools that Work conferences to showcase the successful implementation. In addition, all schools are members of the Association for Middle Level Education and could submit proposals to present at state and national conferences. The district math specialist is a member of OCTM and able to promote the C-STEM program through the math network and our Curriculum Supervisor is the SECO District XI Director and able to share information statewide. As a district, we are able to promote and education a large group of teachers, curriculum leaders, and district leaders about the C-STEM model. Since a professor at Xavier University will be trained in the C-STEM model, the university will be able to incorporate the program into the teacher preparation classes at the university as an instructional tool. Through the Higher Learning Commission, the university will be able to promote the C-STEM model. Hamilton County Educational Service Center, who will also have personnel trained as part of the grant, will be able to offer trainings to other districts to promote the use of the C-STEM model county wide. Through district, university, and county ESC resources, we have a robust network of professionals who can not only promote but train in the use of the C-STEM model.

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).

Todd Bowling, Superintendent
No consortium contacts added yet. Please add a new consortium contact using the form below.
<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>
</tr>
</thead>
<tbody>
<tr>
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<td>513 745-714</td>
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<td>11083 Hamilton Ave, Cincinnati, OH, 45231-1409</td>
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### Implementation Team

<table>
<thead>
<tr>
<th>First Name</th>
<th>Last Name</th>
<th>Title</th>
<th>Responsibilities</th>
<th>Qualifications</th>
<th>Prior Relevant Experience</th>
<th>Education</th>
<th>% FTE on Project</th>
<th>Delete Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heather</td>
<td>Kidd</td>
<td>Math Specialist</td>
<td>Heather Kidd will be responsible for directly monitoring the implementation of the C-STEM curriculum at the three missile schools. She will participate in the train the trainer training and be available to train others in the future. She will also analyze student progress in math on a regular basis to assist in ensuring the program goals are being met.</td>
<td>Heather is a former high school math teacher who now serves as the district Math Specialist. She has held this position for the past 4 years. She holds an Ohio Teaching License in 7-12 Math and an Ohio Principal's License for grades 5-12.</td>
<td>As the district Math Specialist, Heather works closely with Teacher Based Teams at the middle schools to analyze formative assessment data and recommend changes in instructional practice. She works collaboratively with teachers to develop assessments and provides on-going job-embedded professional development.</td>
<td>Bachelor's of Arts in Math</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Leslie</td>
<td>Silbernagel</td>
<td>Curriculum Supervisor</td>
<td>Leslie Silbernagel will be responsible for coordinating and monitoring the implementation of the C-STEM program. She will coordinate with the Treasurer's Office to purchase all services and materials. She will coordinate with the Technology Department to ensure that all software and hardware is operational. She will coordinate all training through UC-Davis and Xavier. She will be in charge of all communication with district teachers about the opportunities for professional development and college credit. She will be the first point of contact for Xavier university as they plan for the evaluation of the project. She will participate in all PD so that in future years she can serve a C-STEM trainer.</td>
<td>Leslie Silbernagel holds an Ohio Teaching License (7-12 Life Science) as well as an Ohio Principals License (4-12). She has worked as a Science Specialist for Northwest for 5 years. She is currently the Curriculum Supervisor.</td>
<td>Leslie Silbernagel is a former high school science teacher. She has experience working with the National Science Foundation on a STEM grant with Sinclair Community College. She is a member of the Network of Regional Leaders for the Ohio Department of Education and the District IX Director for the Science Education Council of Ohio.</td>
<td>Bachelor's of Science in Botany with an emphasis in Environmental Science</td>
<td>10</td>
<td></td>
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