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Adjusted Allocation 0.00
Remaining 3,258,862.00
3000 3. Total Students Impacted:

4. Lead applicant primary contact: - Provide the following information:
First Name, last Name of contact for lead applicant: Margaret Lynch, Superintendent
Organizational name of lead applicant: Auburn Vocational School District
Unique Identifier (RN/Fed Tax ID): 051169
Address of lead applicant: 8140 Auburn Road-Concord Township, OH 440077
Phone Number of lead applicant: 440-358-8011
Email Address of lead applicant: mlynch@auburncc.org

5. Secondary applicant contact: - Provide the following information, if applicable:
First Name, last Name of contact for secondary applicant: Steve Barrett, Superintendent
Organizational name of secondary applicant: Kirtland Local School District
Unique Identifier (RN/Fed Tax ID): #047878
Address of secondary applicant: 9252 Chillicothe Road-Kirtland, OH 44094
Phone number of secondary applicant: 440-256-3360
Email address of secondary applicant: steve.barrett@kirtlandschools.org

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

7. Partnership and consortia agreements and letters of support: - (Click on the link below to upload necessary documents).
* Letters of support for districts in academic or fiscal distressed only if school district is in academic or fiscal distress and has a commission assigned, please include a resolution from the commission in support of the project.

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

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

Our five star consortium/partnership team consists of all of our superintendents from the 9 Lake County School districts as well as our joint vocational school superintendent, both higher education institutions, the Teaching Institute for Excellence in STEM, our Lake County Ohio Port and Economic Development Authority, Alliance for Working Together, LakeHealth Systems, our business and industry partners, and other supporting entities. Our partners were carefully selected for their ability to give us guidance and direction for effective and efficient planning in this venture. In 2012, the Lake County ESC brought districts together to work on a STEM blueprint for all of Lake County by investing in the work of Jan Morrison, Senior STEM advisor to The White House and the U.S. Department of Education, and other supporting entities. Their collaboration with the TIES Teaching Institute for Excellence in STEM (TIES). Our partnership with the TIES Teaching Institute for Excellence in STEM responds to the growing needs of educational institutions for innovative and engaging learning spaces. Our collaboration with TIES also brings us a collaboration with FabEd which is a global outreach project anchored by digital fabrication and the Fab Labs.

Lake County is home to one of the nation’s most advanced technology systems, teaching the Lake County ESC on digital fabrication and the Fab Lab network. This proposal will help us design and implement the Lake County Fab Lab Network. Our JVS superintendent worked with local manufacturers to determine the need for a manufacturing building and that building is under construction. The Aurora Career Center will serve as the design hub for our Fab Lab network and staff will work as liaisons between our students and the business community. And the Aurora Career Center will serve as the design hub for our Fab Lab network and staff will work as liaisons between our students and the business community.

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

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

- Student achievement
- Spending reductions in the five-year fiscal forecast
- Utilization of a greater share of resources in the classroom
11. Describe the innovative project.

the purpose of our proposal is to design and implement the Lake County Fab Lab, Medical Sciences Education Suites, and Coding Network to increase achievement for all students by increasing their access to resources in the classroom. In addition to our students, all our schools, businesses, and higher education institutions will benefit by putting digital fabrication, hands-on anatomy materials, and 3D printers into the hands of our students. Our students today will be the architects of the next generation of manufacturing and technology, and we will ensure that they are prepared for success in that future. Our proposal includes the following key elements.

- **Lake County Fab Lab**: A state-of-the-art, digital fabrication facility located in the heart of Lake County, providing access to 3D printing, laser cutting, and other cutting-edge technologies.
- **Medical Sciences Education Suites**: A series of modules to be developed in collaboration with medical professionals and educators, focusing on anatomy, physiology, and medical ethics.
- **Coding Network**: A comprehensive program that integrates coding education into the high school curriculum, preparing students for careers in technology.

We will use the grant to create a Catalyst Hub, a center for innovation and entrepreneurship, which will serve as a hub for local businesses and entrepreneurs. The hub will facilitate collaboration between local businesses, educators, and students, creating a pipeline for innovation and economic growth.

12. Describe how it will meet the criteria selected above, if school/district receives school improvement funds/support, include a brief explanation of how this project will advance the improvement plan.

- **Mathematics Instruction**: According to the Common Core State Standards, effective mathematics instruction should foster students' mathematical thinking and reasoning. The proposed project aligns with these standards by providing hands-on, project-based learning opportunities that encourage students to apply mathematical concepts to real-world problems. This approach not only enhances students' understanding of mathematical concepts but also develops their critical thinking and problem-solving skills.

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

- **a. Enter a project budget**
- **b. Upload the Straight A Financial Impact Template forecasting the expected changes to the five-year forecast resulting from implementation of this project.** If applying as a consortia or partnership, please include the five-year forecast of each school, community school or STEM school member for review.
- **c. If subsection (b) is not applicable, please explain why, in addition to how the project will demonstrate sustainability and impact.**

Most of the monies in this project are for start-up equipment, training, and materials. The salaries for this first year are needed to get the paperwork and pathways consistent, develop the database of businesses, set up communication plan, etc. Once set up there will be small places needing tweaked and those will be the responsibility of our P-16 sub-committee. Because we are using open source curriculum items for e-portfolios, etc, there will be no recurring costs for this once original pathways and frameworks are written by our pathways consultant. After the first year, any materials for making the products (e.g. plastic for prototypes) will be provided by the local business and industry. In the ranks of our business partners are committed retired chemists, machinists, etc, who will contribute to our students. Lakehead Community College and Lake Erie College will train our teachers to provide dual enrollment opportunities and any changes to the pathways will go on the website. The entire project is the first step of an initiative to develop Lake County's Economic Growth Opportunities. We are working with our higher education partners, small businesses, entrepreneurial start-ups, manufacturers, and corporations, all systems, and our Lake County Ohio Port and Economic Growth Authority to identify gaps in our STEM plus Code pipeline and developing systems that will educate our students for the jobs Lake County has to provide. We spent the last year developing this with consultant group TIES, a blueprint for STEM (economic) success and this year we are mobilizing it. Currently we do not have the funds to connect our schools with the kind of student needs to help entrepreneurs and innovators. The Straight A Fund is going to give Lake County Advanced sciences and computer languages in all of our high school curriculums making Lake County schools one of the best recruiting tools for Lake County businesses. And, this grant will give EVERY school district access to this equipment, training, and network support. Current teachers will learn the equipment that will help our students develop their hands-on and minds-on talents. When competing for talent, Lake County businesses will be able to offer families the best possible STEAM plus Code high schools. This in turn will attract talent at the highest levels. As we attract these talents, their families will become members of our community and we will be growing the Lake County Economic Community for generations to come. Students in Lake County will experience high levels of education and science with the support of our community. As these businesses come into the fold, students have new opportunities to intern and share their skills. Our business partners have committed to at least five years of internship opportunities as they build their workforce. Our partnerships are sustainable and our businesses will continue to need our help. Retired chemists, engineers, entrepreneurs, and machinists have offered to help us at the high school level as students and teachers investigate the many possibilities for the Fab Lab. After the first year, teachers and students will be trained as interns. The curriculum from Fab Ed can be used every year and expanded upon as necessary in business demands increase. The consortium would then work out specifics for charging back the costs.
present efforts with Lakeland Community College to align courses and teacher assignments. ($125,000.00) Auburn Career Center and Lakeshore Compact career based staff will work with district teachers and students on project based learning lessons and units through a series of online "hub interaction" from their innovation and entrepreneurial zone to the high schools’ innovation and entrepreneurial zone ($50,000.00/hour for up to 3,000 hours - $150,000.00) This work will help students match their strengths with the parts of a successful project based learning task. A third party evaluator will provide ongoing and summative evaluation data for the grant. ($30,000.00) and the Educational Service Center will arrange, facilitate, and manage an executive council that will bring representatives from all the entities together to review data gathered in surveys, identify issues related to the functions of the grant, communicate with the three hubs, oversee the development of the system also allows for security and privacy. As teachers and students become more familiar and more flexible with STEM, the need for these supports lessens. Each of our schools has identified some course that is out dated. By reworking those courses we will not see added costs for teaching the engineering-Fab Lab courses. The majority of our costs are one-time costs. Our businesses will help our students maintain the Fab Lab. Part of the training for Fab Lab equipment includes students understanding how to repair and maintain the equipment. Training on the Fab Lab equipment is done through the Fab Ed curriculum. We already have many computers in the classrooms and each district is planning for technology to handle the next generation assessments. We will introduce the initial outlay of money is to set up Innovation and Entrepreneurial Zones and to outfit labs in our schools to do 21st century work. The majority of our costs are one-time costs. Our businesses will help our students maintain the Fab Lab. Part of the training for Fab Lab equipment includes students understanding how to repair and maintain the equipment. Training on the Fab Lab equipment is done through the Fab Ed curriculum. We already have many computers in the classrooms and each district is planning for technology to handle the next generation assessments. We will introduce the lab early in our collaboration and sharing of courses among districts and after setting up the accounts, they are free. Our businesses will help our students maintain the Fab Lab. Part of the training for Fab Lab equipment includes students understanding how to repair and maintain the equipment. Training on the Fab Lab equipment is done through the Fab Ed curriculum. We already have many computers in the classrooms and each district is planning for technology to handle the next generation assessments. We will introduce the lab early in our collaboration and sharing of courses among districts and after setting up the accounts, they are free.

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

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

No new recurring costs. The initial outlay of money is to set up Innovation and Entrepreneurial Zones and to outfit labs in our schools to do 21st century work. The majority of our costs are one-time costs. Our businesses will help our students maintain the Fab Lab. Part of the training for Fab Lab equipment includes students understanding how to repair and maintain the equipment. Training on the Fab Lab equipment is done through the Fab Ed curriculum. We already have many computers in the classrooms and each district is planning for technology to handle the next generation assessments. We will introduce the lab early in our collaboration and sharing of courses among districts and after setting up the accounts, they are free. Our businesses will help our students maintain the Fab Lab. Part of the training for Fab Lab equipment includes students understanding how to repair and maintain the equipment. Training on the Fab Lab equipment is done through the Fab Ed curriculum. We already have many computers in the classrooms and each district is planning for technology to handle the next generation assessments. We will introduce the lab early in our collaboration and sharing of courses among districts and after setting up the accounts, they are free.

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

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

Each of our schools has identified some course that is out dated. By reworking those courses we will not see added costs for teaching the engineering-Fab Lab courses. The majority of our costs are one-time costs. Our businesses will help our students maintain the Fab Lab. Part of the training for Fab Lab equipment includes students understanding how to repair and maintain the equipment. Training on the Fab Lab equipment is done through the Fab Ed curriculum. We already have many computers in the classrooms and each district is planning for technology to handle the next generation assessments. We will introduce the lab early in our collaboration and sharing of courses among districts and after setting up the accounts, they are free. Our businesses will help our students maintain the Fab Lab. Part of the training for Fab Lab equipment includes students understanding how to repair and maintain the equipment. Training on the Fab Lab equipment is done through the Fab Ed curriculum. We already have many computers in the classrooms and each district is planning for technology to handle the next generation assessments. We will introduce the lab early in our collaboration and sharing of courses among districts and after setting up the accounts, they are free. Our businesses will help our students maintain the Fab Lab. Part of the training for Fab Lab equipment includes students understanding how to repair and maintain the equipment. Training on the Fab Lab equipment is done through the Fab Ed curriculum. We already have many computers in the classrooms and each district is planning for technology to handle the next generation assessments. We will introduce the lab early in our collaboration and sharing of courses among districts and after setting up the accounts, they are free.

17. Provide a brief explanation of how the project is self-sustaining. If there are ongoing costs associated with the project after the term of the grant, this explanation should provide details on the cost reductions that will be made that are at least equal to the amount of new/recurring costs detailed in the narrative. If the grant will sustain itself beyond the life of the grant, explain in detail how this will be accomplished.

This grant is built to be self-sustaining because the initial outlay for equipment and associated training will not need to be expended in future years. This is a part of a bigger countywide initiative called E.G.G., Economic Growth for Generations Incubator. Students will continue to have direct contact with entrepreneurs in ensuing years as the incubator grows. This is a train the trainer model both from the teacher and student perspective and students will be training other students as well as teachers for training other teachers. To set up a change in the environment such as this with anything anywhere virtual internships is time consuming, but the deliverable will be a clear-cut, STEM pipeline for working with business and industry in medical sciences, technology, and manufacturing. The use of Google Apps as both a tracker of student work and as a communication vehicle for all stakeholders allows schools to access the free applications to do work anytime, anywhere. The system also allows for security and privacy. As teachers and students become more familiar and more flexible with STEM, the need for these supports lessens. Each of our schools has identified some course that is out dated. By reworking those courses we will not see added costs for teaching the engineering-Fab Lab courses. The majority of our costs are one-time costs. Our businesses will help our students maintain the Fab Lab. Part of the training for Fab Lab equipment includes students understanding how to repair and maintain the equipment. Training on the Fab Lab equipment is done through the Fab Ed curriculum. We already have many computers in the classrooms and each district is planning for technology to handle the next generation assessments. We will introduce the lab early in our collaboration and sharing of courses among districts and after setting up the accounts, they are free. Our businesses will help our students maintain the Fab Lab. Part of the training for Fab Lab equipment includes students understanding how to repair and maintain the equipment. Training on the Fab Lab equipment is done through the Fab Ed curriculum. We already have many computers in the classrooms and each district is planning for technology to handle the next generation assessments. We will introduce the lab early in our collaboration and sharing of courses among districts and after setting up the accounts, they are free.

D) IMPLEMENTATION - Timeline, communication and contingency planning

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

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

* Narrative explanation

Plan (MM/DD/YYYY): 02/28/2014

Implementation (MM/DD/YYYY): 05/01/2014

* Narrative explanation

Lake County Schools will respond to the economic needs of our community. Our partnership with the Port Authority and our Alliance for Working Together guarantees our ongoing internships for at least the next five years. We anticipate that our students will have access to STEM education in ways they have never even dreamed. They will connect to an experiential education environment, develop partnerships with industry, and collaborate with local businesses. We believe that our students will be prepared for the jobs that are here and encourage them to build their skills to meet these jobs. With three identified career pathways - computers, medical sciences, and manufacturing - we know that more of our students will receive the training needed to fill these jobs. We are charged with college and career readiness for all students and yet many of our practices are outdated, do not access current technologies, or are irrelevant in today’s economic development. With the help of our business partners,
23. Describe the substantial impact and lasting value - Impact, evaluation and replication

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

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

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

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

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

22. If so, how?

This proposal puts the resources into the classroom and directly into the hands of students. Teachers learn side by side with students. Although the initial expense is substantial to put Fab Labs into all schools, it does not require that much retrofitting in the schools. Many schools already have underused, outdated machine shops or chemistry labs. These are ideal places to put an innovation and entrepreneurial zone. With onsite training, teachers and students learn how to keep the labs running and there are many retired business and trades people interested in working with budding entrepreneurs. The opportunities for all students and teachers using Fab Labs are limitless. Fab Labs share common tools and processes, which help make them a global networking opportunity. Fab Labs presently span 23 countries and 24 time zones. Turning our old keyboarding classes into coding classrooms can be done using existing equipment and Ohio law provides for dual enrollment so teachers can offer these courses for dual credit, high school and college credit given simultaneously. Most of the professional development in this proposal is in the classroom or blended learning and is real time. You get the professional development, as you need it. Teachers receive PD in 2D design and fabrication then 3D design and fabrication. It is a renewable resource as well since students and teachers use a recursive practice of training. As new teachers and student enter the labs, a trainer model is invoked. A network of global Fab Labs is accessible to all for information, growth prospects, etc. and allows the end users (teachers and students) to connect. With all of our high schools having the same equipment, our teachers and students can develop a common practice among one another and globally.

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

The value of this project is to the economic growth of our community as well as to our schools. STEM professionals account for nine of the top ten salaries among recent graduates in the US. This is the first step of a journey with the Lake County Ohio Port and Economic Growth Authority as well as our other business partners to make sure our students are ready for the jobs available today and tomorrow. This proposal gives some of our best students some hands-on, inquiry-based opportunities to drive their career decisions. As we move forward we plan to offer more advanced science and technology courses and to connect high school students through open source basis. This curriculum will offer Lake County industries a recruiting tool for talent at all levels and provide job growth opportunities for the corporate level by providing top of class educational opportunities for children of senior level scientists, engineers, business management, doctors, and other professionals. The incubator provides ongoing opportunities for our students to work with professional entrepreneurs and start-ups in real world work. It gives real world experience to high school students as an introduction to the sciences and technology necessary for entry to advanced manufacturing, medical careers, and entrepreneurial ventures. Using our joint vocational school as a hub for the Fab Labs allows us to tap into the expertise of these vocational teachers. JVS teachers can share their project based learning successes with classroom teachers and collaborate with them to develop innovative and exciting project based learning in the regular classroom. The hubs also give our students opportunity to work with our college and career liaisons early in their education to help them choose or eliminate possible careers.

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

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

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

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

1. January - Conduct Pre-lab use evaluations of teachers, student, and community users are conducted and compared to post-lab use evaluations in June, 2014. 2. Tracked each year with baseline Fall, 2013: Numbers of dual enrollment programs in Lake County in Computer Science increased and charted. 3. Quarterly STEM Design Team meetings consisting of business, community, higher ed, and K-12 partners receive data on use of Fab Labs, coding, and pathways development by consultant as noted in minutes of meeting. 4. Completed Pathways for students doing internships and moving from high school to community college to 4-year college, with on and off ramps, published to the P-16 ESC website for college and career readiness. 5. Ongoing evaluation of programs and impacts conducted by TIES and communicated to all stakeholders through Lake County STEM Design Team 6. Outside evaluator retained and all reports published to ESC website and linked to high school websites and shared at executive council meeting. 7. Lake County STEM Blueprint for Success completed with frameworks for internships for students and externships for teachers developed in partnership with business and industry (including our health care network).

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

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

Accept Margaret J. Lynch, Superintendent Auburn Vocational School District October 25, 2013