## Budget

**Cuyahoga County - 2014 - Straight A Fund - Rev 0 - Straight A Fund - Application Number (496)**

**U.S.A.S. Fund #:** [Plus/Minus Sheet](#)

### Cuyahoga Valley Career Center (050922)

**Straight A Fund**

**Application Number (496)**

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### Adjusted Allocation

| Remaining | -3,124,589.00 |

### Notes
Application

Cuyahoga Valley Career Center (205922) - Cuyahoga County - 2014 - Straight A Fund - Rev 0 - Straight A Fund - Application Number (496)

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

A) APPLICANT INFORMATION - General Information, Experience and Capacity

1. Project Title: Cuyahoga Valley STEM Center

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

3. CVCC will build a STEM Center that responds to the need for a better equipped, STEM-focused workforce of the future by improving student achievement in two ways: - To increase the interest level of K-12 students in STEM careers, the center would provide high-tech, interactive stations for elementary schools/after-school clubs that are tied directly to national technology standards, middle school STEM career exploration, and high school contextualized science/math lessons. - To promote a learning environment in which career-tech high school students will be better prepared for a demanding post-secondary continued education, the center would provide a hands-on laboratory focused on blended personalized learning with state-of-the-art equipment to solve real-world problems in areas such as advanced manufacturing, engineering and industrial processes.

4. List all additional participating entities by name: Provide the following information for each additional participating entity, if applicable:

First Name, Last Name, Organizational Name, Unique Identifier (IRN/Fed Tax ID): Cuyahoga Valley Career Center

Address of lead applicant: 8001 Brecksville Road, Brecksville, OH 44141

Phone Number of lead applicant: 440.746.8320

Email Address of lead applicant: jdannemiller@cvccworks.edu

5. List all other participating entities by name: Provide the following information for each additional participating entity, if applicable:

First Name, Last Name, Organizational Name, Unique Identifier (IRN/Fed Tax ID): NA

Address of secondary applicant: NA

Phone number of secondary applicant: NA

Email address of secondary applicant: NA

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

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

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

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

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.

CVCC was established in 1972 by eight public school districts. With technologically advanced programs and equipment, CVCC provides a strong technical foundation for today's employers. Each year, CVCC was established in 1972 by eight public school districts. With technologically advanced programs and equipment, CVCC provides a strong technical foundation for today's employers. Each year, CVCC provides education for approximately 1,000 high school students with 30 career-technical programs and offers adults and area employers year-round options for daytime, evening and weekend classes. The Adult Education Department provides ongoing registration with new classes starting monthly. Affordable, customized business training is available on-site or at CVCC for skill upgrades or career changes. Principals on the design and implementation team include Joseph Dannemiller, Executive Director, and Patricia Coyne, Community Partnerships Coordinator. As a former Special Projects Coordinator and science instructor, Mr. Dannemiller has several years of experience in curriculum design, innovative instructional practice, and management of state and federal grants. He has served on numerous regional and statewide boards and committees to further the work of career technical education, including work with the Ohio Tech Prep, the Ohio Board of Regents, and the Ohio Department of Education Office of CTE, and a past president of the Ohio Association for Career Technical Education (OACTE). Patricia Coyne has over 20 years of experience and a vast background in education and career development. Ms. Coyne has worked as an Academic Dean of a business college, a Career Specialist, a Program Developer, and currently the Community Partnerships Coordinator at CVCC. In these roles, she has worked with businesses, civic and community leaders, and education administrators to help provide innovative and meaningful solutions to employment and education concerns. She has created, developed and implemented career-related programs for adults, teachers, and students in the CVCC consortium. Patricia has built relationships with business and community partners; developed marketing materials and evaluation surveys; and developed several community outreach programs. She has obtained numerous grants and developed advisory groups for high school leadership programs.

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

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

- New - never before implemented
- Existing and researched-based - never implemented in your district or community school but proven successful in other educational environments
- Mixed Concept - incorporates new and existing elements
- Enhancing/Scale Up - elevating or expanding an effective program that is already implemented in your district, school, or consortia partnership

11. Describe the innovative project

STEM education, through project-based learning strategies, can stir the curiosity of how things work in learners' minds and enhance their creativity, innovation, and learning experiences. To promote STEM education, not only within the confines of the high school career-technical programs at CVCC, but throughout the consortium that CVCC serves, a STEM Center would be the "hub" of consortium-wide, STEM-related programs, academic lessons, and career development activities. The STEM Center would provide an "enabling environment that allows innovation to take root and thrive" (Gates Foundation), and would include the following components: - 3 CTE (career-technical education) classrooms for CAD, Machine Technology, and Engineering Technology programs, which would be equipped with industry standard 3D modeling software and state-of-the-art 3D printers using digital technology; advanced manufacturing technology that would teach the coordination of information, automation, computation, software, sensing, and networking, and make use of cutting edge materials and emerging capabilities; and VEX Robotics Design System software and equipment for project-based robotics lessons (in conjunction with Project Lead the Way, which has already been implemented at CVCC). All students would have the opportunity to experience aspects of all three CTE programs, from problem-solving, to design and creation of prototype, to the manufacture of final product. A capstone project will engage students on multiple levels, exposing them to subjects that they typically would not pursue, providing...
D) IMPLEMENTATION

C) SUSTAINABILITY

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

The emerging consensus regarding what knowledge and skills students will need in order to be prepared for a complex and fast-evolving future, according to 2Revolutions focuses around the need for students to: - Master core academic content - Think critically and solve complex problems - Work collaboratively - Communicate effectively - Learn how to learn Academic studies in STEM-related areas are becoming increasingly important in today’s society. The use of interactive learning methods, teaching by manipulating and analyzing data, thereby becoming active learners who participate in building their own understanding. The classrooms' location in the STEM Center would allow for contextualized learning, whereby students would learn about science and math in real-world applications, using the Math-in-CTE and Science-in-CTE models. Academic teachers would participate in extensive professional development through Career and Technical Education using Data-Driven Improvement (CTEDDI) to develop curriculum maps, from which teachers then create math-enhanced CTE lessons using a seven-element pedagogical framework and a plan for integrating those lessons naturally into their courses. Based upon the National Research Center for Career and Technical Education (NRCTE)’s research-driven philosophy of fully contextually integrated curriculum integration, Math-in-CTE is a process through which the math that naturally occurs in the CTE curriculum is enhanced. - A career exploration lab on the second floor, equipped with a viewing area and wired for video and sound, for middle school students to learn about and experience a variety of STEM-related careers. Students will have the opportunity to experience various careers at modular-style learning units with interactive learning stations. Additionally, they will observe the design and manufacturing process and tour the three CTE classrooms to see firsthand what careers in engineering, advanced manufacturing, and architecture look like. They will then select and research three careers that they find interesting. Making an early connection to a STEM-focused career cluster will encourage students to develop the skills and take the high-level STEM-related high school courses that will help them be successful in their post-secondary studies and chosen career.

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

a. Enter a project budget

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

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

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

3,070,589.00 ** Total project cost

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

The primary costs associated with the project are for the building construction, purchase of equipment and software, and professional development. The staffing associated with the project will not be an addition to the employment budget, and therefore there is no employment of existing personnel. Funding for the initial expenditures will be provided by the Straight A grant fund. Expenditures and approximate costs include:

- Additional manufacturing equipment $740,000.00
- Middle school Career Exploration Lab (Depos) $95,289.00
- Software $2,400.00/VEK IQ Classroom Starter Kit $3,500.00
- Professional Development Costs: -Explore,learning $3,000.00 -Career and Technical Educators using Data-Driven Improvement 24,000.00 -Depos $2,400.00
- Annual licensing fees $3,200.00

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

2,400.00 ** Specific amount of new/recurring costs (annual cost after project is implemented)

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

Annual software licensing fees.

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

0.00 ** Specific amount of expected savings (annual)

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

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

The majority of the costs are upfront, one-time costs to create and equip the center. Once the STEM Center is built, equipment has been purchased, and initial professional development has taken place, the ongoing costs associated with sustaining the Center will be paid by the general fund. Additional expenses to upkeep facility will be offset by increase in revenue from adult education programming (evening classes in Machine Technology, Engineering, and CAD), as well as tuition from technology camps/clubs/workshops.

D) IMPLEMENTATION - Timeline, communication and contingency planning

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

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

* Proposal Timeline Dates

Plan (MM/DD/YYYY): 01/31/2014

* Narrative explanation

Meet with architects to design STEM Center. Include CTE/academic instructors and industry experts to ensure maximum collaboration. Develop STEM Advisory Team: solicit input to ensure industry

Implement (MM/DD/YYYY): 08/25/2014
21. Is this project able to be replicated in other districts in Ohio?

Yes

22. How, if so?

Here are 49 career center technologies in each of which could build a STEM Center for the school district they serve. Each career center does not necessarily currently offer the three CTE programs that would be housed in the CVCC STEM Center, but each of the programs provides promising occupational outlooks for graduates and meets workforce needs in Ohio. The most innovative part of this proposal is the technology and professional development components. This is based on project-based instruction which is what will increase student achievement. This environment can be replicated in any facility that provides sufficient room and structure to accommodate the concept.

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

The unique aspect of the STEM Center will be its ability to create a STEM pipeline in several age groups simultaneously, by providing high-level CTE training to high school students, career exploration for middle school students, and innovative technology-focused clubs, camps, and competitions for elementary and school students. At the high school level, this project is innovative and transformative in that it combines several known best practices in CTE instruction in one sweeping initiative. And because this idea is initiated by the instructional staff, it will be embraced and continually improved. It provides high-quality career and technical education (CTE) programs through increased student engagement, the innovative integration of traditional academic courses, and by meeting the needs of both male and female students. The Center-based Learning is a proven strategy that provides a relevant forum for student engagement, increasing student motivation and engagement, promoting active learning, collaboration and cooperative learning, and fostering creativity. Kollner, Z. W., et al. (2012). Project-based Learning is a proven instructional strategy that increases student achievement, and promotes active participation and student motivation. In, not only from them, but from their CTE counterparts. A good working relationship already exists as there is some contextualized learning already integrated into the curriculum; but to effectively implement this program, a collaborative environment must be modeled and encouraged.
24. What are the specific benchmarks related to the fund goals identified in question 9 that the project aims to achieve in five years? Include any other anticipated outcomes of the project that you hope to achieve that may not be easily benchmarked.

Benchmarks for Student Achievement - by June 2019 - Retention rate: Retention from junior to senior year will be at least 85% for each CTE program by 2019. (Current average October-to-October retention rates are as follows: Engineering Technology - 83%; CAD - 77%; Machine Technology, 81%). - Graduation rate: Percentage of students graduating in four years from each CTE program will be at least 95% by 2019. - Middle school and high school end of course assessments in math and science: Percentage of high school students passing end of course assessments in math and science will be at least 95% - Positive post-program placement success: All CTE programs that participate in Math- and Science-in CTE courses will have a positive post-graduate success rate of at least 95% by 2019. Other Outcomes - by 2019 - Enrollment: Each of the three CTE programs will be at full enrollment for junior class (24) and 90% enrollment for senior class (22). - Nontraditional Enrollment: Each of the three CTE programs will have increased nontraditional enrollment of 10% each year. (Currently overall nontraditional participation is 18.92%) - Increased middle school student interest and engagement in STEM careers. Pre- and post- surveys will indicate student interest in STEM careers will increase 20%. - More involvement by stakeholders (especially STEM businesses). The STEM Advisory Group will include members from various industries, parents, and educators and will spearhead initiatives for new innovative STEM clubs, camps, competitions, and programs. - Use of STEM Center by associate district teachers/students (field trips, after-school STEM clubs). Math and science classes from all associate districts will take field trips to the CVCC STEM Center to engage in lessons that allow students to go beyond memorizing facts, formulas and mnemonics, and instead will focus on enabling students to develop a deep conceptual understanding of underlying principles. - Culture of continuous improvement and innovation, incorporating ongoing collaboration to share best practices internally in each CTE area.

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).

Short term objectives. Progress on these objectives will be measured by completion of the following items in the timeframe designated. - Professional development for academic teachers: Completion of extensive professional development through Career and Technical Educators using Data-Driven Improvement (CITED) curriculum development of curriculum maps, and creation of math-enhanced CTE lessons using the seven-element pedagogic framework by September 2014. Academic teachers will also attend a six-hour workshop to learn the major features and functions of the Explore-learning and best practices for inquiry-based teaching with Gizmos before March 2014. - Collaboration between CTE and academic teachers: Ongoing weekly meetings to develop a plan for integrating math/science lessons naturally into CTE courses, beginning January 2014. - Implementation of curriculum maps and Gizmos by academic teachers. Ongoing development of effective lessons around Common Core standards, allowing students to go beyond memorizing facts, formulas and mnemonics, and focusing on enabling students to develop a deep conceptual understanding of underlying principles, to be implemented in September 2014. - Development of Middle School Career Exploration Program: CVCC Career Specialists, who are assigned to each of the eight associate school districts in the consortium, with input from guidance counselors, will develop a career exploration program for implementation in January 2015. - Creation of STEM Advisory Board: Stakeholders from the community, including business/industry, education, and parents will provide input for ongoing development, promotion of STEM programs at CVCC, initiating in January 2014. Long term objectives. Progress on these objectives will be measured by year-to-year increases in enrollment, retention, end-of-course assessments, and positive post-graduation rates, as previously listed. If any of these measures have insufficient progress, the STEMDK Advisory Team will reassess to determine what changes need to be made as follows: - Enrollment: If enrollment statistics for the three CTE programs do not increase each year by at least 20% until reaching full enrollment, 11th grade associate district students will be surveyed to assess their career interests, using the Ohio Career Information System (OCIS). Those with career interests that match the CTE programs will be further surveyed to determine what obstacles prevented their enrollment in CVCC. - Retention: If retention statistics for the three CTE programs do not increase each year by at least 20% until reaching 90%, the students who did not persist in their programs will be interviewed to determine if there is a trend for their lack of persistence that can be identified and rectified. Special attention will be placed on appropriate placement. - End-of-course assessments: Since new end of course assessments will be implemented, it is difficult to gauge what increases will need to be made to attain 95% by 2019. If the initial results fall below 95%, a plan will be put in place to increase the passage rate until reaching 95%. The academic teachers will collaborate with NRCCTE researchers to make instructional improvements based on the assessment data. - Positive post-program placement rates: If the graduates of the three CTE programs do not have a positive post-graduation rate (graduates are either attending post-secondary education, working in their career field, or in the military) of at least 95%, the Job Placement Liaison will conduct a survey of graduates to determine where the disconnect has been, and will implement appropriate intervention during the senior year of current students.

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

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

I accept. Joseph Dannemiller, Executive Director, Cuyahoga Valley Career Center. 10/25/2013