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<tr>
<th>Purpose Code</th>
<th>Object Code</th>
<th>Salaries 100</th>
<th>Retirement Fringe Benefits 200</th>
<th>Purchased Services 400</th>
<th>Supplies 500</th>
<th>Capital Outlay 600</th>
<th>Other 800</th>
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<td>134,000.00</td>
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<tbody>
<tr>
<td>Remaining</td>
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Please respond to the prompts or questions in the areas listed below in a narrative form.

A) APPLICANT INFORMATION - General Information

1. Project Title:
Leading to Learn: Innovation & Design for 21st Century Learning

2. Project Tweet: Please limit your responses to 140 characters.
Orange City Schools will develop an Innovation Center that transforms student achievement by aligning instruction, technology & curriculum. 
*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.*

<table>
<thead>
<tr>
<th>Grant Year</th>
<th>Pre-K Special Education</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
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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.

By nature of the work, all K-12 students in Orange City Schools (OCS) will be served each year. Over 4,000 Solon, Beachwood, Chagrin Falls, Warrensville Hts, and Mayfield school district K-12 students will be made aware of Open Fab Lab Hours for tours and observations. Students of other districts in the Ohio Innovation Lab Network will be exposed to the Innovation Center and fab lab through tours and make it-take it visits. MC2STEM High School students who volunteer will be positively impacted. We will be inviting teachers to participate in PD through the ESC, ILN and area districts. Students of area districts will be impacted as a result of the Professional Development provided for area districts/staff members. CSU, KSU, LCCC and the ESC will be impacted through a positive partnership with Orange, enabling them to access our Fab Lab and Professional Development.

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

First and last name of contact for lead applicant
Dr. Edwin Holland

Organizational name of lead applicant
Orange Schools

Address of lead applicant
2000 Chagrin Blvd Pepper Pike, OH 44124

Phone Number of lead applicant
216.831.8600

Email Address of lead applicant
eholland@orangecsd.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 a 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

Orange is a charter member of Innovation Lab Network & has worked toward greater understanding of Problem Based Learning (PBL) & 21st century skills, however the following problems are barriers to maximizing student achievement, creativity & collaboration: -Implementation has been dependent on early adopters and isn’t equitable. -The absence of alignment across classrooms, grade levels & buildings -Orange has been successful in a traditional model of education, contributing to a lack of understanding & support from stakeholders in shifting this traditional pedagogy to an inquiry-based, experiential approach. -Many teachers lack instructional strategies & resources that support this effort. -A previous lack of strong community & higher ed partnerships contributes to an inconsistent follow-through. Partnerships that sustain innovation are critical. -Current facilities lack dedicated space for innovation and design.
b. The proposed innovation and how it relates to solving the problem or improving on the current state.

Leading to Learn’s goal is to systematize innovations by creating physical & human capital: the infrastructure essential for all Orange students to demonstrate mastery of OH content standards & 21st century skills. Physical Infrastructure Partner with Teaching Institute for Excellence in STEM (TIES), Cleveland State University & MC2STEM High School to create (& train staff), 3 innovation spaces where gr. PreK-12 will be innovators, creators & makers solving relevant real world problems. Orange Innovation Center at Brady MS with a Massachusetts Institute of Technology (MIT) FabLab. FabLabs are a network of spaces started by MIT Center for Bits & Atoms. FabLabs have a core set of tools that allow novices to make almost anything given a brief introduction to engineering & design education. Experiencing the engineering design process & “making” portions of solving real world problems is essential for learning to transfer & its application between content areas. It is not feasible for us to place a fab lab in each building. However, we will create a Makerspace at the elementary & boost the small HS makerspace. We will add a few digital fabrication machines typically found in a FabLab. By 2017-18, all Orange students will have at least one ‘maker’ experience per year. The FabLab will also be open to the public. This innovation center will serve as a professional hub for observation & learning by teachers & pre-service teachers via partnerships with higher ed & collaborations with area schools. Human Capital Infrastructure A high return on student achievement can be realized & sustained through focused investment in professional capital (Fulken 2012). Orange will systematize professional learning by establishing & expanding a corps of faculty experts. -120 teachers will participate in PD cycles to propagate high impact models of PBL STEM instruction. CSU will facilitate this experience. -TIES will use a train the trainer model to prepare 12 teachers to collaborate with colleagues to develop model lessons & instructional sessions. -Core Innovation Team: (made up of teachers, coaches, & specialists) will: draft rubrics based on previous work with EDleader21; develop a protocol for analysis of performance tasks; coach colleagues in use of rubrics & protocol for analyzing performance assessments & coach teachers in use of FabLab & Maker Space. -Project Leads & Teacher Leaders will facilitate Orange training so all staff review curriculum maps & identify existing standards/projects using performance task analysis protocol -CSU & TIES will facilitate 120 faculty & partners to co-design authentic learning experiences to solve real-world problems. Developing extensive partnerships with STEM programs & Higher Education Institutions will result in consistent & supported expectations for implementation & will positively impact sustainability of work. Real change must occur at the level of classroom practice in both public school & higher education. If there is no academic linkage between higher education & public school, then there will be no sustainable partnership. Developing an integrated preK-16 problem-solving curriculum must be a primary focus.” (Deeper Learning Defined, 2013).

9. Select which (up to four) of the goals your project will address. For each of the selected goals please provide the requested information to demonstrate your innovative process. - (Check all that apply)

<table>
<thead>
<tr>
<th>a. Student achievement</th>
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<tbody>
<tr>
<td>i. List the desired outcomes.</td>
</tr>
<tr>
<td>Examples: fewer students retained at 3rd grade, increase in graduation rate, increased proficiency rate in a content area, etc.</td>
</tr>
<tr>
<td>Overall Goal: systematize innovations by creating physical &amp; human capital infrastructures essential for Orange students to demonstrate mastery of OH academic content standards &amp; 21st century skills. By 2022: Outcome 1: 100% Orange students will demonstrate mastery of academic content standards as measured by state &amp; local assessments. Baseline: 2016 Report Card Outcome 2: 100% Orange students will be innovators, creators &amp; makers solving real world problems &amp; 21st century skills that are challenging &amp; engaging as measured by participation in Makerspace, FabLab or PBL opportunities. Baseline: Fall 2016 local rubrics &amp; surveys Outcome 3: Orange will systematize professional learning by establishing &amp; expanding a corps of faculty experts committed to professional growth. 100% of Orange staff will access on-site prof. dev. to increase implementation of design thinking as evidenced by curriculum maps &amp; lesson plans. Baseline: Fall 2016 local survey &amp; 2015-16 Curriculum maps.</td>
</tr>
<tr>
<td>ii. What assumptions must be true for this outcome to be realized?</td>
</tr>
<tr>
<td>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.</td>
</tr>
<tr>
<td>Assumption 1 Teacher PD &amp; PBL through FLABLAB / Makerspace will result in deeper learning for students. Dearer learning is: Master core content; Think critically &amp; solve complex problems; Work collaboratively; Communicate effectively; Learn how to learn; &amp; Develop mindsets to apply knowledge. (Deeper Learning Defined, 2013). Assumption 2 Job Embedded PD and Lesson Study increases student achievement. Educational Leadership Creating a Knowledge Base for Teaching: A Conversation with James Stigler Scott Willis (2002), Improving professional development by helping teachers learn to analyze classroom practices and accumulate professional knowledge. Assumption 3 Developing extensive partnerships with STEM programs &amp; Higher Education Institutions will result in consistent &amp; supported expectations for implementation &amp; will positively impact the sustainability of the work.</td>
</tr>
<tr>
<td>iii. Describe any early efforts you have made to test these assumptions (pilot implementation, etc), or how these are well-supported by the literature.</td>
</tr>
<tr>
<td>Orange has many efforts underway to test these assumptions &amp; empower teachers with the tools to produce high levels of learning. Through a generous donation by a community member, TIES brought a Mobile fablab to Orange for one week in February, 2016. MS &amp; 2nd grade students had time to work on a project. Kids chose one of five projects based on interest. Teachers and students engaged in the engineering design process and followed up in the classrooms. Additionally: -A core group of staff have visited MC2STEM High School Fab Lab &amp; Lorain County Community College Fab Lab. -Dr. Jeff McClelland trained teachers in SOLE (Self organized learning environments) to help support PBL instruction. -Approximately 12 staff members attended an edLeader 21 national conference in fall 2015 and winter 2016. Teachers then presented at Brady Middle School staff meeting and incorporated learnings into our 21st Century Skills focus, Design Thinking, Critical Thinking Rubrics, and Critical Thinking Task/Prompt design. -Staff engaged in a 2-day WOW (Working on the Work) Training through the Schlechter Center. -Six staff members attended SCALE training for performance based assessment. This is ongoing PD presented at BMS staff meetings. -Orange Schools held a well attended community movie screening of Most Likely To Succeed (MLTS) followed by a panel discussion of STEM educators and professionals moderated by our Superintendent, Dr. Holland. MLST generated discussions of the benefits of PBL. -Increased commitment to a coaching model through the addition of gifted intervention specialists,</td>
</tr>
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</table>
vi. How are you prepared to alter the course of your project if assumptions prove false or outcomes are not realized?

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).

Formative By 2022: Tools/resources for pre/post surveys for 21st C. Skills Increases in gr. 6-8 benchmark NWEA math Full implementation of HS performance based rubrics Students experience 2-3 PBLs / yr by 2021-22 Pre/post survey staff on knowledge & implementation of best practice Summative Increase gr. 5 AIR science by 4% /yr NWEA Math: # students in gr. 6-8 meeting benchmark increase by 4% /yr Increase gr. 6-8 AIR science by 4%/yr 2-3 student PBL experiences /yr # K-12 Orange student using Brady MS Fab Lab based on usage log 10% increase by 2022 # student uses of ES MakerSpace based on usage log 10% increase by 2022 DoS PEAR Institute measurement tool Brady MS & 50% additional staff systematize professional learning Budget Orange requests $750,621 for implementation & will have $159,667 in sustainable costs.

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

Data points Staff surveys, meeting records, student engagement surveys, PBL rubric development, plans for implementation & scale to share; student assessment data; # staff trained; # staff served; # state/national best practice sharing events/opportunities; publications documenting success, challenges & lessons learned; faculty trained; community engagement surveys; intervention tools used & recommended for scale; fiscal reporting to include: spending reductions through cost savings & reallocation; sustainable costs, the EdLeader21 4Cs rubric as the measure of students’ 21st C. Skills, & S-STEM survey for elementary/middle/high students as the measure of students’ attitudes toward STEM. The later citation is: Unfried, A., Faber, M., Stanhope, D. S., & Wiebe, E. (2015). Budget aligned Orange requests $750,621 for implementation & will have $159,667 in sustainable costs. Orange is reallocating $178,100 from existing budgets to sustain the project.

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

The Project team will review relevant data bi-monthly as available. Annual staff & student surveys will include questions that can help identify where recalibration or options may need to be expanded. Curriculum audits will occur each winter to review course offerings & enrollments. We will use projections to help remove unintended barriers to students access to the most rigorous science coursework. Evaluator to provide quarterly reports on project progress & suggestions for improvement if necessary. Project team will provide updates to community 2 times a year to help communicate both the successes & barriers to the program. The Advisory Council will meet 3 times per year to review progress toward outcomes. Risks that could surface throughout the program: If time for staff becomes shortened, then we will offer staff at different times, outside of school day. If staff buy-in becomes an issue, then we will offer incentives and bring in expertise of TIES, CSU, LCCC MC2 STEM, KSU & ESC, & offer site visits for teachers. If student projects are not completed with fidelity, then we will refocus projects with the help of TIES, CSU, LCCC, and MC2 STEM. If student achievement does not increase as rapidly as we planned, we will realign instructional strategies with student needs. Budget is aligned with/ reasonable based on student impact, outcomes, lasting value. Orange is contracting with Dr. Adam Voight as an external evaluator at $66,464 which is 8% of project budget. This amount is in line with industry standards which will allow the vast majority of project funds to be spent directly on work with educators. At the same time, it will provide an in depth formative and summative evaluation. This evaluation will ensure Orange meets project outcomes, has strong impact on student achievement, and is fiscally sustainable. The evaluation will also support district & partners as they fine tune systems in preparation to expand pilots & replicate/ scale project activities.

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 measureable 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
   e. Established - Elevating or expanding an effective program that is already implemented in your district, school or consortia partnership

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)

Enter Budget

b. If applicable, upload the Consortium Budget Worksheet (by clicking the Upload Documents link below)

Upload Documents

c. Upload the Financial Impact Table (by clicking the Upload Documents link below)

Upload Documents

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.

750,621.00 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.

Personal Services $16,000 Project manager stipends: 4*4,000 Benefits $5,120 32% of stipends Purchased Services $215,523 Support: Start-up costs include fabricator workshops $10,000; FabLab International $6,800; advertising & printing $10,000; 5 yr software lic. $5,960; Shipping $2,000; $34,560 Gov. Admin: External eval, 10% of budget: $66,463 Prof. Dev $114,500: PBL training; CISE provides PBL training, STEM curriculum design, capstone project design for MHS 11 hrs * $2,000; BMS 11 hrs * $1,000 (discounted rate) = $33,000 Pear Institute tool for measuring STEM quality: $250 * 10 people = $2,250 TIES provides FabLab Install $31,000; Machine training $18,000; PD for BMS $18,000; monthly support $12,000 = $79,000 Supplies $241,654 MHS Maker: storage $2,500; drawing surfaces $3,500; building $3,000; sculpting $1,500; arts $5,000; sewing $2,000; puzzle $1,000; robotics $4,000; electronics $3,000; computers $4,500; 3D printer $6,000; IPADs $3,000; Apple TV $1,500; tools $1,500; consumables $4,000; $46,000 BMS FabLab: 20 computers $24,000; 10 computers $17,780; 10 monitors: $3,500; electronic consumables $13,000; books $1,100; printer $400; Polycom $1,513; projector $1,399; Pico crickets $2,500; Lego $2,000; Scratch Boards $500; Acrylic $25,000; wood $35,000; machine consumables $46,125; $166,815 HS Tech/Maker: 5 computers $5,389, electronics $3,000, robotics $4,000, Raspberry Pi $4,500, tools and consumables $11,650: $28,839 Equipment (Instruction) $138,324 BMS FabLab: 2 laser cutters $48,000; 2 3D printers $5,000; CNC router $22,235; 2 vinyl cutters $4,200; scroll saw $750; hand tools $3,200; generator $380; oscilloscope $995; power supply $189; soldering $600; heat gun $150: $85,669 HS Tech/Maker: Laser cutter $24,000, 3D printer $2,500, CNC router $21,535, vinyl cutter $4,590: $52,625 Other (Facilities) $134,000 BMS FabLab renovation including wall removal, widen doors electrical update, wiring: $45,000 Steelcase furniture package for BMS: $65,000, MHS: $24,000

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.

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 included. 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.

Sustainable costs are kept low by careful planning. All software is purchased with a 5-year enterprise license. Equipment purchases include maintenance agreements, when applicable. Consumable supplies are purchased in 5-year quantities, including project supplies such as wood and vinyl, as well as FabLab machine consumables such as filament, drill bits and replacement parts. Project management will continue throughout the 5-year sustainability period to ensure continued fidelity and capacity to continue programming. Project managers will also assist in collecting data for evaluation of project goals. In Years 2 and 4, staff members trained to use Pear Institute’s STEM quality measurement tool will have to be recertified. In Year 3, all computers and related technology with a 3-year lifespan will have to be replaced. Year 1: $21,120

Personal Services: 4 stipends * $4,000 = $16,000 Benefits: 32% of stipends = $5,120 Year 2 Personal Services: 4 stipends * $4,000 = $16,000 Benefits: 32% of stipends = $5,120 Purchased Services: Pear Institute recertification of 10 staff members at $50 each = $500 Year 3 Personal Services: 4 stipends * $4,000 = $16,000 Benefits: 32% of stipends = $5,120 Supplies: 3-yr replacement for all computers, printers, iPads, Apple TV = $53,067 Year 4 Personal Services: 4 stipends * $4,000 = $16,000 Benefits: 32% of stipends = $5,120 Purchased Services: Pear Institute recertification of 10 staff members at $50 each = $500 Year 5 Personal Services: 4 stipends * $4,000 = $16,000 Benefits: 32% of stipends = $5,120

0.16. 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.

N/A

100 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%

N/A

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. Existing resources will be reallocated to sustain the project activities. The project will build capacity for internal professional development, resulting in a reduced need for purchased services related to professional development. Additionally the district and individual schools have committed a portion of their annual technology purchase and replacement budgets to cover the Year 3 cost of replacing computers. Years 1-5 Purchased Services: District professional development budgets will be reduced by $25,000 per year. Year 3 only Supplies: District and schools will share the cost of replacing computers purchased in the grant year as a reallocation of annual budgets for purchasing/replacing technology. Total reallocation is $53,100.

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: June 2016 January 2017

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

Su 2016 Establish Advisory Committee Secure all contracts Board notification Advisory orientation meeting to review purpose/scope, establish meeting dates & times Share grant implementation timeline with BOE, PTA, Parent Newsletter, Students Open House Presentation of Vision & Plan Meet with external evaluator Select Staff to serve as a core train-the-trainers (Site based leadership) Begin aligning external PD Plan site visits for staff, students, BOE, advisory committee Baseline data surveys of students, staff, parents Set-up PD sessions with TIES regarding operation and management of Fab Lab Au 2016 Share EDLeader21 critical thinking rubric with staff Willoughby Center site visit Reach out to area schools (Solon, Beachwood, Mayfield, Chagrin Falls, Warrensville Hts) to determine interest need for staff PD Share implementation plan with ILN Send newsletter to stakeholders (including identified partners) regarding process Board Meeting presentation of Fab Lab Advisory Committee Meeting PBL professional development and feedback provided by CSU Establish schedule for Fab Lab Meet with MC2 & CSU students to serve as mentors Send newsletter to stakeholders (including identified partners) regarding process Prepare physical facility for Fab Lab Equipment Identify/hire a Fab Lab manager/technician Use machines, minor repairs/up-keep of machines, software updates stocking supplies/materials, manage lab usage for students and community Benchmarks Numbers of teachers participating in trainings/PD # students creating projects Project team and fiscal meetings established and scheduled throughout planning process. Implementation and family engagement plans for district and each building created Communicating/coordinating project Project team will meet monthly throughout the planning process to ensure all stakeholders are engaged and desired outcomes/goals are on-track/monitored

22. Implementation (grant funded start-up activities)

a. Date Range: August 2016 June 2017

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

Winter 2017 Establish Maker Space at Elementary Building Establish Maker Space at High School Building Prepare spaces for Fab Lab equipment Prepare space for Innovation Center Provide on-site PD through PLC sessions to support development of PBL within each content area 100% of 6th, 7th, and 8th grade students at Brady Middle will tour the Fab Lab Facility Small groups of students "trial" Fab Lab Equipment "Idea Hour" at Brady Middle School to access the Fab Lab outside of classroom time STEM Fair Send newsletter to stakeholders
E) SUBSTANTIAL IMPACT AND LASTING VALUE

The lessons learned from the project can and will be shared with other education providers in Ohio. Note: A complete and comprehensive version of timelines and data requirements for the final analysis of the project's progress, success or shortfall. The applicant should provide information on how this plan should include the methodology for measuring all of the project outcomes. Applicants should make sure to outline quantitative approaches of analysis.

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

a. Date Range8/1/2017 6/30/2022

b. Scope of activities - include all specific completion benchmarks

- Annually through project Evaluation Plan approved by ODE
- Customized professional development
- Annual project evaluation and fiscal reports
- STEM Fairs Quarterly through Project end 6/30/2022
- Quarterly project evaluation to assess system changes and impact
- Project Leadership Team quarterly planning to adjust based on evaluation & plan for sustainability
- Benchmarks Increase gr. 5 AIR science by 5% / yr NWEA Math:
  - # students in gr. 6-8 meeting benchmark increase by 4% /yr
  - Increase gr. 6-8 AIR science by 5% / yr 2-3 student PBL experiences / yr # K-12
- Orange student using Brady MS Fab Lab based on usage log 10% increase by 2022
- # student uses of ES MakerSpace based on usage log 10% increase by 2022
- Pre/post DoS PEAR survey

- Brady MS & 50% additional Orange staff systematize professional learning
- Communication Project team is primary communication method for stakeholder engagement and will report regularly to building staff; Evaluator outcome reporting throughout sustainability period; semi-annual board report.

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:

Instructional changes MS student experiences will be much more personalized. Teaching & learning will shift to a hands-on, engaging, & authentic approach focusing on collaboration, critical thinking, communication, & creativity. Grading practices will be aligned so there is increased consistency across grades promoting deeper teacher, student, & family understanding. Increased innovation from teachers & students. Organizational Changes More collaborations across buildings will occur. Student internships, engaged staff, & a renewed sense of purpose will be realized. Teachers will experience more fulfilling work that is in line with mission/vision. The school culture exhibits a traditional education philosophy. A cultural school change to a progressive philosophy where the role of teacher will be more of a facilitator/advisor & students will be more responsible for their learning benefit all students. A Council of Advisors will be established for Learn to Lead. This council consists of community leaders who meet 3x /yr to advise Lead to Learn. Council of Advisors will offer strategic advice required to mentor growth & success, Increase the program's visibility & sustainability through ongoing feedback, provide a structure for keeping partners informed, & analyze & support decisions of administration. Project activities/partnerships change behaviors of individuals Dr. Debbie K Jackson is Director of the STEM Education Center at CSU & Director of Center for Innovation in STEM Education (CISE) which serves as the northeast OH hub of the OH STEM Learning Network (OSLN). The OSLN provides support for STEM initiatives & STEM schools across the state of OH. In partnering with Orange, Dr. Jackson will leverage reach of OSLN to share lessons learned & gains achieved through this project. Dr. Jackson will work with Jan Morison from TIES to provide PD to teachers in Orange around project-based instruction & fabrication laboratory equipment & integrating these in Orange.

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:

Adam Voight, Ph.D. Assistant Professor of Curriculum and Foundations Associate Director of the Center for Urban Education College of Education and Human Services Cleveland State University 2121 Euclid Avenue, JH 377 Cleveland, Ohio 44115-2214 Phone: 216-687-5437 Email: a.voight@csuohio.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 mixed-methods evaluation will include a process evaluation of how the project has been implemented and an outcome evaluation of the impact of the project on the student achievement outcomes noted in section (9a). The process evaluation will describe project activities and outputs. Data will include (a) sign-in sheets for all teacher PD sessions; (b) a survey administered at the beginning and end of the year to participating school staff that measures comfort with implementing PBL and using the Fab Lab (FL); (c) a calendar of FL school visits; (d) sign-in sheets for students using the Fab Lab and MakerSpace; (e) sign-in sheets for project leadership team meetings to track external partner engagement in the project; and (f) DoS rubrics completed by district instructional coaches at each project site at several intervals throughout the year. Descriptive analyses will calculate (a) the number of PD sessions offered and total and mean attendees per session; (b) mean levels of teacher comfort with PBL and the FL both at the beginning and end of the school year; (c) number and mean duration of FL school visits; (d) count of students usages of the FL and MakerSpace; (e) number of external partners attending each leadership meeting; and (f) mean DoS scores for each of the 12 dimensions measured. The outcome evaluation will use a quasi-experimental design to assess the impact of the project on student mastery of academic content standards, 21st century skills, and attitudes toward STEM. Data will derive from district records and student surveys and include (a) student NWEA and AIR math, reading, and science test scores; (b) composite rubric scores from students' PBL projects; and (c) student attitudes toward STEM, measured by the S-STEM Survey and (d) student 21st Century Skills, measured by EdLeader21's 4Cs Assessment, both administered at the beginning and end of the school year. For the first year of the evaluation, each of these outcomes measured in spring 2017 will be the outcome in separate analytic models. Because the two groups (i.e., project participants vs. non-participants) may not be equivalent in ways that explain observed differences in outcomes, a propensity-score matching (PSM) procedure will be employed. This ensures that comparisons are made between students with similar scores on outcomes at baseline (i.e., spring 2016) and with similar demographics. This approach involves two steps: (1) estimating logistic regression models with the full population of OCSD students with project participation as a dichotomous outcome and covariates representing students' spring 2016 measure of the outcome (when applicable), race/ethnicity, special education and English-learner status, socioeconomic status, gender, and grade in school; and (2) matching each student participant with a same-district non-participant who has the most similar propensity for project participation (as determined in step 1). PSM was recommended by the American Educational Research Association (AERA) in its 2007 report on best practices in estimating causal effects in educational research. Both process and outcomes will also be assessed via student focus groups. Two focus groups with a randomly selected group of 8 student participants each will be organized at the conclusion of the first project year, and resulting data will be analyzed using a qualitative coding procedure to identify themes. Both components will serve formative and summative purposes. An annual report will be completed each August during the life of the project and will be shared with stakeholders at the beginning of each school year to assist with project planning. Results will be shared at school staff meetings and at annual fall meetings for interested parents. Finally, results will be shared at the annual conference of OH Education Research Center.

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.

Any Ohio school or district can implement Leading to Learn because it allows achievable instructional shifts and operational practices that are evident by improving OCSAD students with reducing ongoing costs. These instructional shifts also support ESSA's call for personalized learning and a robust system of supports that incorporate problem solving and critical thinking for all. Our partners, ILN, TIES, CSU, Kent State University, and the ESC have the capacity to support others through similar change. However, to ensure success, a school would need to follow our lead, buying into the idea of thinking big, starting small and scaling fast. Schools must be willing to continually reexamine the teaching and learning experiences to increase student achievement and empower all students so they gain the tools to be college and career ready so they can thrive in our ever-changing world. Schools should plan for deep PD and system work that will last 3-5 years before it is fully-scaled and sustainable internally. We will welcome other schools that conduct site visits and will be a training center for other districts. We have a rich history of reconfiguring our staff, reconfiguring the daily schedule, and reconfiguring space to meet the needs of students - we have a lot of lessons learned that we are excited to share with other schools. Within Orange, our PD could be scaled to ES and HS. We can pair our MS students with pre-school students for an ongoing mentorship, display student exhibits at the senior center and library, both of which are located on our learning campus. Our Fab Lab will have open hours after school for community's free use. Orange will deepen state and national outreach by sharing our story via blogs, articles and networking with new partners in Ohio, through the ILN, ESC, TIES, CSU, and KSU.

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

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

I agree Dr. Edwin Holland Superintendent May 5, 2016
Consortium Contacts

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>
<td>Jan</td>
<td>Morrison</td>
<td>443-421-1076</td>
<td><a href="mailto:janmorrison@tiesteach.org">janmorrison@tiesteach.org</a></td>
<td>TIES</td>
<td></td>
<td>PO Box: 18050, Cleveland Heights, OH, 44118</td>
<td></td>
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<tr>
<td>Kelly</td>
<td>Zeleznick</td>
<td>440-366-7028</td>
<td><a href="mailto:kzelesni@lorainccc.edu">kzelesni@lorainccc.edu</a></td>
<td>Lorain County Community College</td>
<td></td>
<td>1005 North Abbe Road, Elyria, Ohio, 44118</td>
<td></td>
</tr>
<tr>
<td>Dr. Jeff</td>
<td>McClellan</td>
<td>419-233-1695</td>
<td><a href="mailto:sole.cleveland@gmail.com">sole.cleveland@gmail.com</a></td>
<td>SOLE CLE</td>
<td></td>
<td>PO Box: 18050, Cleveland Heights, OH, 44118</td>
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<tr>
<td>Feowyn</td>
<td>Mackinnon</td>
<td>2169708148</td>
<td><a href="mailto:feowyn.mackinnon@clevelandmetroschools.org">feowyn.mackinnon@clevelandmetroschools.org</a></td>
<td>MC2STEM High School</td>
<td></td>
<td>601 Erieside Ave., Cleveland, OH, 44114</td>
<td></td>
</tr>
<tr>
<td>William</td>
<td>Kist</td>
<td>(330) 672-5839</td>
<td><a href="mailto:wkist@kent.edu">wkist@kent.edu</a></td>
<td>Kent State University</td>
<td></td>
<td>404 White Hall, P.O. Box 5190, Kent, OH, 44242</td>
<td></td>
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<tr>
<td>Paula</td>
<td>Kucinic</td>
<td>216-901-4244</td>
<td><a href="mailto:paula.kucinic@esc-cc.org">paula.kucinic@esc-cc.org</a></td>
<td>Educational Service Center of Cuyahoga County</td>
<td></td>
<td>6393 Oak Tree Boulevard, Independence, Ohio, 44131</td>
<td></td>
</tr>
<tr>
<td>Toby</td>
<td>Ratcliffe</td>
<td>301-448-2803</td>
<td><a href="mailto:tobyratcliffe@tiesteach.org">tobyratcliffe@tiesteach.org</a></td>
<td>TIES</td>
<td></td>
<td>PO Box: 18050, Cleveland Heights, OH, 44118</td>
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<tr>
<td>Dr. Debbie</td>
<td>Jackson</td>
<td>513-312-8632</td>
<td><a href="mailto:d.jackson1@csuohio.edu">d.jackson1@csuohio.edu</a></td>
<td>Cleveland State University</td>
<td></td>
<td>2121 Euclid Ave, Julka Hall Rm. 349, Cleveland, Ohio, 44115</td>
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<td>Adam</td>
<td>Voight, Ph.D.</td>
<td>216-687-5437</td>
<td><a href="mailto:a.voight@csuohio.edu">a.voight@csuohio.edu</a></td>
<td>Director of the Center for Urban Education and Assistant Professor of Curriculum and Foundations, Cleveland State University</td>
<td>Cleveland State University, 2121 Euclid Avenue, JH 377, Cleveland, Ohio, 44115-2214</td>
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<tr>
<td>Nadine</td>
<td>Grimm</td>
<td>216-901-4243</td>
<td><a href="mailto:nadine.grimm@esc-cc.org">nadine.grimm@esc-cc.org</a></td>
<td>Innovative Lab Network</td>
<td></td>
<td>6393 Oak Tree Blvd., Independence, OH, 44131</td>
<td></td>
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<tr>
<td>Jeff</td>
<td>Lowinger</td>
<td>940-293-5316</td>
<td><a href="mailto:JeffreyLowinger@eaton.com">JeffreyLowinger@eaton.com</a></td>
<td>Eaton</td>
<td></td>
<td>1000 Eaton Blvd, Cleveland, OH, 44122</td>
<td></td>
</tr>
<tr>
<td>Patricia</td>
<td>Allen</td>
<td>617.484.0466</td>
<td><a href="mailto:PALLEN@mclean.harvard.edu">PALLEN@mclean.harvard.edu</a></td>
<td>PEAR Institute, Harvard University and McLean Hospital IRN #</td>
<td>PEAR Mailstop 320, McLean Hospital, 115 Mill Street, Belmont, MA, 02478</td>
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<td>Annette</td>
<td>Kratcoski, Ph.D</td>
<td>330.819.7221</td>
<td><a href="mailto:akratcos@kent.edu">akratcos@kent.edu</a></td>
<td>Kent State University, Research Center for Educational Technology</td>
<td>323 Moulton Hall, P.O. Box 5190, Kent, OH, 44242-0001</td>
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<tr>
<td>Bradley</td>
<td>Morris, Ph.D</td>
<td>330.672.0590</td>
<td><a href="mailto:bmorri20@kent.edu">bmorri20@kent.edu</a></td>
<td>Kent State University</td>
<td>412A White Hall, Kent, OH, 44242</td>
<td></td>
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</tr>
<tr>
<td>John</td>
<td>Dunlosky, Ph.D.</td>
<td>330.672.2166</td>
<td><a href="mailto:jdunlosk@kent.edu">jdunlosk@kent.edu</a></td>
<td>Kent State University</td>
<td>144 Kent Hall, Kent, OH, 44242</td>
<td></td>
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</tr>
<tr>
<td>Ken</td>
<td>Kay</td>
<td>520 623 2466</td>
<td><a href="mailto:kkay@edleader21.com">kkay@edleader21.com</a></td>
<td>EdLeader21</td>
<td>177 N Church Avenue, Suite 1010, Tucson, Arizona, 85744</td>
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<td>First Name</td>
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<td>Prior Relevant Experience</td>
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<tr>
<td>Todd</td>
<td>Puster</td>
<td>Orange City Schools</td>
<td>Fiscal person will act as budget manager to ensure fiscal expenditures occur on time and within budget. Fiscal person will revise budget as needed, complete fiscal reporting and communicate expenditures to Board and will ensure all partners adhere to Assurances.</td>
<td>Todd Puster serves as the Treasurer and Chief Financial Officer for the Orange City Schools. He served East Liverpool City School District from 2009-2015. Among his list of accomplishments for East Liverpool Schools was the fiscal close out of an 8-year, $43 million, Ohio School Facilities Commission renovation project for school district classroom facilities. Puster has been a school treasurer since 1992 having worked for West Geauga Local School District (1992-1995), Ashland City School District (1995-1999) and Streetsboro City School District (1999-2009). He holds a Master's Degree in Business Administration for Kent State University and a Bachelor of Arts Degree from Ohio University. He holds a professional school treasurer's license from the Ohio Department of Education and a certificate as a registered business fiscal officer with the Ohio Association of School Board Officers.</td>
<td>Puster has given presentations and had articles published covering various school finance topics. He has been recognized by many professional organizations including OASBO and the Association of School Business Officials International. He is an eight-time recipient of the &quot;Certificate of Achievement for Financial Reporting Excellence&quot; from the Government Finance Officers Association of the U.S. and Canada, and he has received numerous &quot;Auditor of State Awards&quot; for excellence in financial reporting. Todd has worked through his professional organizations on various financial improvement efforts. For example, he was directly involved in a legislative task force that worked out implementation details for what has become the Ohio school district five-year forecast. He is regularly asked to give presentations and has articles published covering various school finance topics.</td>
<td>Master's degree in business administration from Kent State University Bachelor's degree from Ohio University.</td>
<td>5</td>
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<td>Business Officials (OASBO).</td>
<td>to share his expertise about financial forecasting and analysis with various education management groups and community groups.</td>
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**Christa Krohn**  
**District Instructional Math Coach**  
Instructional coach will work to support, plan and implement transdisciplinary PBL professional learning and support teachers in STEM PBL project development.  

**Experienced provider of professional learning in transdisciplinary STEM PBL,**  
**Martha Holden Jennings Scholar,**  
former NASA STEM curriculum reviewer, former math and physics adjunct professor at Owens Community College, Findlay OH.  

14 years of teaching and leadership experience, including 1 year as a STEM Math teacher with a focus on engineering design challenges and digital fabrication.  

Founded Lima Senior High School NASA Moonbuggy (Human Rover) Team, in which students design, prototype and build human powered rovers meeting a number of parameters and compete internationally at the US Space and Rocket Center. Served on various state level committees to support work of ODE. Facilitated Mobile Fab Lab visit and transdisciplinary STEM fabrication project for 450 6th graders in Shaker Heights City Schools. Teacher leader of two 6th grade winning What If No Gravity (WING) NASA national competitions.  
Co-organizer of the 2016 Brady Middle School Mobile Fab Lab  

**Bachelor's Degree in Mathematics and Physics Education from Bethel College**  
**Master's Degree in Educational Leadership from Salem Int'l**  

20
| **Jake Miller** | Middle School Technology Integration Specialist | Managing training for software, fabrication machines, preparing flipped instructions for projects/software/hardware | Experienced provider of professional development in educational technology and integration of STEM and computer science. Google Apps for Education Authorized Trainer. Presenter at numerous educational technology conferences. | 12 years of teaching experience, including 3 years as a STEM teacher with a focus on engineering design challenges and computer-aided design, including designs for 3D Printers. 2 years as a District Technology Leadership Team leader. Co-organizer of the 2016 Brady Middle School Mobile Fab Lab week. Organizer of a building-wide Hour of Code event and STEAM Faire for Brady Middle School. | Bachelor's in Middle Level Mathematics/Science Education from University of Akron Master's in Instructional Technology from Kent State | 20 |

| **Dr. Debbie Jackson** | CSU | Dr. Jackson will leverage the reach of the OSLN to share the lessons learned and gains achieved through this project. The addition of the Orange space will extend the reach of CISE. | Dr. Jackson serves as the Network leader for the Metropolitan Cleveland Consortium for STEM Regional Ohio STEM Learning Network Hub and Co-Director of the Center for Innovation in STEM Education | Co-Director, Metropolitan Cleveland Consortium for STEM, Regional Hub of the Ohio STEM Learning Network, 2012-present, Co-Director, Center for Innovation in STEM Education (CISE), 2012-present, Co-Director, Project CREATE, Curriculum Redesign Effort Advancing Teacher Education, 2012-present, Associate Director for Education and Training for the Cleveland State University Transportation Center, 2009-present | B.S., Education, Bowling Green State University, 1995 Ed.D., Curriculum & Instruction, University of Cincinnati, 2004 | 5 |

| **Adam Voight, Ph.D.** | Director of the Center for Urban Education | External evaluator | Dr. Voight is recognized as a national leader in educational | Dr. Voight has evaluated numerous national- and | Ph.D. from Peabody College of Education at Vanderbilt University M.A. in | 5 |
| Brian Frank | Principal | Building administrator, Brian Frank will serve as Co-Lead of the project to handle project oversight and partnership development, ensure project aligns with school/district's overall mission and improvement plans; manage project budget, conduct walkthroughs and observations of project implementation to continually provide formative and summative feedback for staff regarding implementation of blended instructional model. He will work closely with the Instructional Coach and Fiscal Manager to ensure all project outcomes are aligned with the district's goals. |
| Brian- 24 years experience as an educator, 19 years experience in administration. |
| Brian Frank will serve as Co-Lead of the project to handle project oversight and partnership development, ensure project aligns with school/district's overall mission and improvement plans; manage project budget, conduct walkthroughs and observations of project implementation to continually provide formative and summative feedback for staff regarding implementation of blended instructional model. He will work closely with the Instructional Coach and Fiscal Manager to ensure all project outcomes are aligned with the district's goals. | Master of Education from Xavier University, BS in Education from Miami University, 7-12 teaching certificate in English |
| Counseling from Michigan State University B.A. in Psychology |
| and Assistant Professor of Curriculum and Foundations |
| research and has an extensive record of accomplishments in educational research and evaluation. In the past five years, he has published 15 articles in high-impact, peer-reviewed research outlets related to education and school improvement and has given over 20 presentations on his research at national and international conferences. His research has been supported by leading funding agencies in educational research, including the U.S. Department of Education and the Spencer Foundation. He also instructs graduate-level educational research courses at Cleveland State University. |
| state-level federally funded grants, including the Safe and Supportive Schools (S3) program of the U.S. Department of Education in California, Louisiana, and South Carolina and the national Army Youth Programs in Your Neighborhood (AYPYN) initiative of the U.S. Department of Defense. He has also evaluated many federal- and state-funded grants to local education agencies, including the School Climate Transformation Grant of the U.S. Department of Education in Hemet (CA) Unified School District and the Straight A Fund grant of the Ohio Department of Education in Cleveland Heights-University Heights City Schools. |
completed on time and within budget. Co-Leads will meet regularly to review progress, address barriers and support Project Team in ensuring project success. Co-Leads will facilitate school/district's Project Leadership Team that includes Instructional Coach, Building Technology Integration Specialist, External Evaluator, and Fiscal Manager. The team will provide information and work collaboratively with the Advisory Council. These meetings will focus on monitoring progress and reporting outcomes. The Leads will continue to reach out to new partners to provide new opportunities and experiences for collaboration for district partners and students.

<table>
<thead>
<tr>
<th>Darla Wagner</th>
<th>Assistant Principal, Brady Middle School, Orange City Schools</th>
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<tr>
<td>Building administrator, Darla Wagner will serve as Co-Lead of the project to handle project oversight and partnership development, ensure project aligns with school/district's overall mission and improvement plans; manage project budget, conduct walk-throughs and observations of project implementation to continually provide formative and summative feedback for staff regarding implementation of blended instructional model. She will work closely with Instructional Coach and Fiscal Manager to ensure all project outcomes are</td>
<td>Darla- 27 years experience as an educator, 10 years experience in administration. She has also worked as an education consultant in several districts across Northeast Ohio. -Adjunct Professor, Ursuline College Ed Admin Program, Course: Professional Staff Development</td>
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<td>-Co-writer of founding grant for the National Writing Project (NWP) at Kent State in 1997 from the U.S. Department of Education, supplemented annually by local, state, and private funds. Served as a co-director for the NWP at KSU for 10 years, responsible for managing the funds in accordance with grant</td>
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<td>M.A. in Education Administration from Ursuline College M.A. in English from Youngstown B.S. in Education from Kent State</td>
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completed on time and within budget. They will meet regularly to review progress, address barriers and support Project Manager in ensuring project success. Co-Leads will facilitate school/district's Project Leadership Team that includes Project Manager, and Fiscal Manager. These meetings will focus on monitoring progress and reporting outcomes. The Leads will continue to reach out to new partners to provide new opportunities and experiences for collaboration for district partners and students.

- Sustainability of the project is proven that even with change in co-directors the program is in its 19th year of serving teachers and students across Northeast Ohio.
- Development of District Initiative for Site Based Leadership in the area of Literacy. The Literacy Leader program identifies teacher leaders in the district from grades k-8 and develops a cohort of professionals who commit to a two-year professional development program where they increase their expertise with Reading/Writing Workshop model through specific lesson study, develop model classrooms for observation, and engage in reflective observation protocols to hone instructional practice. This model was first implemented in Orange Schools in 2014 and is currently on it's second cohort of participants. Orange frequently hosts teachers from other schools who come to see the reading workshop model as it is implemented through this approach.
| Toby Ratcliff Brothel | TIES | PD provider for Engineering is Elementary curriculum Directed NSWC's STEM Outreach Program | For 34 years, she led model-scale and full-scale experiments aimed at measuring the flow around surface ships. She also directed NSWC's STEM Outreach Program, engaging fifty lab professionals in bringing authentic engineering projects to local school districts. | Bachelor's degree in Physics from Cornell University, Masters Degree in Ocean Engineering from the George Washington University in 1987. | 10 |