Title: The Rhode Island Department of Education respectfully submits its application, entitled "*WBL4CS: The Effectiveness of WBL in Computer Science Education*" to the 2019 EIR **Early Phase** Grant Competition.

Priorities: This application addresses absolute priority 1:*Demonstrates a rationale*, as well as Absolute Priority 3: *Field-Initiated Innovations-Promoting STEM* under the category of the Competitive Preference Priority: *Projects designed to improve student achievement or other educational outcomes in computer science.*

Population Served: This project will serve 1200 students in grades 10 and 11 within 20 schools across the state of Rhode Island, with a focus on high-needs students. Of these students, half will receive the full benefits of the project, inclusive of work based learning activities (intervention group), and half will receive partial supports, such as additional classroom resources and training for their teachers (control group). For the purposes of this study, we define high-need students as low-income students, and students of those groups which are historically underrepresented in the Computer Science field with a focus on racial & ethnic minorities and young women.

Summary of Project Activities: This project will create and/or augment Computer Science pathways in 20 RI schools, such that a minimum of 1200 students gain access to high quality Computer Science Instruction, leading to an AP Computer Science Principles Course in grade 11. Professional development will be provided to teachers in each of these programs. Half of the schools will also participate in a specific industry project which allows them to explore CS through a variety of mini-projects supervised by local CS experts in the field. Data from both groups of students will be collected and evaluated for continuous improvement using an RPP structure and the Education Development Center will serve as an external evaluator who is responsible for evaluating the impact of the industry project on students' engagement, academic proficiency in computer science, and other indicators.

Expected outcomes: The expected outcomes include:
- RI Students with CS WBL will score 10% higher on the *APCSP* exam than students without WBL.
- RI Students with CS WBL will be significantly more engaged than students without WBL.
- RI Students with CS WBL will be 10% more likely to intend to enter a career in CS than students without WBL.
- Produce WWC Moderate Evidence that WBL positively affects CS education, and documents to allow replication of CS WBL implementation by other LEAs.

Special Project Features: This project is unique in that it seeks to expand knowledge of two high-interest educational areas that each have a limited pre-existing research base: Work Based Learning and Computer Science Education.

Participating organizations: This project builds off of Rhode Island's successful work in Career and Technical Education and Computer Science, through its pre-established PrepareRI and CS4RI Initiatives, both run through the Rhode Island Department of Education. Lead partners in this project will include both of Rhode Island's State IHE's: Rhode Island College and The University of Rhode Island; Educators from multiple districts across the state of Rhode Island; several computer science professional development providers:Project Lead the Way, Microsoft TEALS and Code.org;and a high quality intermediary partner, ███████████ ███████████, which will assist to form new partnerships with employers from Rhode Island's Computer Science Industry.