

CS Pathways RPP Summary for Lowell Public Schools

Prepared by Fred Martin, UMass Lowell, fred_martin@uml.edu

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“CS Pathways RPP” is a researcher-practitioner partnership between UMass Lowell and the school districts of Lowell Public Schools (LPS) and Methuen Public Schools.

It is funded by a three year grant from the National Science Foundation (NSF), and is led by UMass Lowell professor of computer science and associate dean [Fred Martin](#). The NSF awarded the grant to UMass Lowell with a start date of September 15, 2019.

The grant is to support the partners to collaborate in creating a lasting, culturally responsive Digital Literacy and Computer Science curriculum at the middle school level, which is implemented in all district middle schools and reaches all district students.

The project is based on prior grant work conducted by Prof. Martin with the cities of Everett and Medford (MA) from 2014–2018, in which the “CS Pathways” 20-hour curriculum was developed by technology teachers in these schools.

This curriculum is the starting point for our present work. **The curriculum is aligned with the [2016 Massachusetts Digital Literacy and Computer Science curriculum framework](#).**

The project will engage three Lowell schools in its first year, and add three more schools its two subsequent years, reaching all nine Lowell schools with middle school grades by its conclusion.

At each school, two teachers will be directly engaged. The school principal and a parent volunteer will also be encouraged to be involved in project activities.

Over the three-year grant period, the grant will provide \$87,780 to Lowell Public Schools, with funds targeted to support teacher stipends and purchase technology materials to be used with project activities and which become the property of the district.

The project will conduct research on: (1) how teachers learn computer science and form a self-supporting community; (2) how teachers interpret and adapt the existing curriculum based on their own students’ needs; and (3) teachers’ approaches to assessing their students’ learning.

All research will be approved by UMass Lowell’s Institutional Review Board (IRB), which assures the appropriateness of the research and processes for maintaining the confidentiality of student and teacher data. This review will include considerations to prevent any threat to the self-esteem of the pupil and to the reputation of the school system.

Expected outcomes: (1) the teaching of digital literacy and computer science at the middle school level that is effective and appropriate for LPS students and teachers; (2) that LPS teachers will be empowered to continue to improve, evolve, and deliver the curriculum after the grant period is concluded; and (3) a deeper understanding of how to achieve these outcomes.