



Project Summary

Marysville Expansion: Engaging High School Students in STEM Education for Manufacturing

9/1/2016-8/31/2018

Funding Request: \$189,324

Matching Funds: \$81,912

Project Description

Columbus State Community College was awarded a \$741,509 grant from the National Science Foundation to build the framework for this program. The manufacturing lab at Marysville is well equipped from an ODHE Straight A project with an estimated value of \$3 million. The need is in staffing for launch. The requested two-year window is based on a successful ramp up toward sustainable tuition income.

Leveraging this experience, the College requests \$189,324 in funds from LIFT to enhance these efforts. The proposed Modern Manufacturing Work-Study Program with the Marysville STEM Early College High School will have the following components:

- Marysville high school students participating in College Credit Plus earning concurrent high school and college credit for courses.
- Dual enrolled high school students registering for two semesters of college-level classes.
- Marysville STEM Early College High School graduates bridging the gap in pathways from high school to college by participating in a one-week summer Advanced Automation Institute.
- Expanded educational programming with light weighting concepts for the work study with students during semesters three and four working at Honda or other regional manufacturer for three days per week and taking college courses for two days per week.
- Students graduating with an Associate of Applied Science in Electro-Mechanical Engineering Technology.
- Graduates becoming employed full time at Honda or other regional manufacturers.
- Graduates have the option of enrolling in a Miami University Bachelor of Engineering Technology with Electro-mechanical concentration offered via distance learning at Columbus State.

With supplemental LIFT funding, Columbus State will operationalize a required hands-on manufacturing laboratory at the Marysville STEM Early College High School. The new manufacturing laboratory will include simulators (AC/DC, electronic motor control, industrial electrical wiring, basic fluid power, light weighting application, mechanical drives, PLC troubleshooting, pneumatics), installation, wiring, and assorted smaller supplies. Leveraging Ohio Department of Education tuition funding through College Credit Plus, dual enrollment high school students will take Columbus State courses in the new laboratory space. When the project is fully phased in, Marysville STEM Early College High School students could graduate having completed the first year of the Modern Manufacturing Work-Study Program. After first year of technical education, students will move directly into the work study at Honda or other regional manufacturer as year two students.

Deliverables

Projected outcomes include: increased enrollments at the high school and community college level, improved technical skills of graduates, and an improved pool of applicants for technicians at Honda North America Services LLC and other manufacturers. The model is replicable and lessons learned from the project will be disseminated nationally at the NSF Project Director's Conference, American Society of Engineering Education, and locally through the Ohio Project Lead the Way Fall Conference. The Chair of Engineering recently presented at the National Project Lead the Way Conference and submitted an application to speak at the National Career Pathways Network Annual Conference by Center for Occupational Research and Development (CORD) in autumn 2016. A statewide presentation will be held on Columbus State campus in October encouraging other industries with High School partners to team up with the local Community College to emulate these results. These efforts are above and beyond the NSF project and other leveraged funds listed below.