

Project Abstract

The Central Virginia Advanced College and Career Readiness Region: Advanced Manufacturing and Engineering as a Driver of Cross-Curricular Change, addresses Priority 5 of the Investing in Innovation program: the effective use of technology integrated with rigorous college and career ready standards to: *improve student engagement* through the use of project based learning activities incorporating advanced manufacturing technologies; *improve student achievement* through an integrated curriculum and opportunities to develop competencies using emerging technologies; and *build teacher efficacy* through focused professional development.

This project builds on existing work in The Laboratory School for Advanced Manufacturing, a partnership with the University of Virginia, where middle school engineering classes are used as an innovation center to support science teaching centered on the reconstruction of historical innovations through a partnership with the Smithsonian. I3 funding will expand this work across schools and students in the region *to develop a region of college and career ready students with experience in advanced technologies while creating national access to innovative science and engineering curricular resources*. Four specific objectives will allow the program to meet these goals for students in the region:

Objective 1: Develop Smithsonian Invention Kits and pilot in the Laboratory School for Advanced Manufacturing. Replicate use in other school districts prior to national dissemination.

Objective 2: Develop methods for assessing learning outcomes corresponding to science and engineering instructional objectives.

Objective 3: Create a regional professional development network

Objective 4: Create an engineering/advanced manufacturing/design curricular pathway for high school students that is aligned with college and career ready standards.