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.