

ADDITIVE MANUFACTURING

SUMMER INSTITUTE

Columbus State Community College, with funding from the National Science Foundation, has created the Additive Manufacturing Summer Institute. This four-week, immersive experience exposes high-schoolers to additive manufacturing techniques, engineering principles, and careers in advanced manufacturing. We offer the program at no cost to students and teachers. The institute is open to students entering grades 10-12, as well as recent high school graduates and high school teachers.

Through the month of June, participants worked together on engineering and manufacturing design challenges, with state-of-the-art tools at their fingertips. Computer-aided design (CAD), 3-D printing, and design principles are applied to a hands-on project that transforms an idea into a tangible object.

1. **Additive Manufacturing Summer Institute:** Year one of the summer institute allowed students to work in teams to design and prototype an assistive device with additive manufacturing or 3-D printing techniques to help their community.
2. **High School Faculty Professional Development Initiative:** Teachers from local high schools developed an additive manufacturing curriculum, explored topics such as assembly, CAD, and computer numerical control, and participated in a three-week online professional development course.
3. **Model Education Pathway:** Students who completed the program are now prepared to pursue college-readiness coursework while in high school, or pursue a two-year degree in engineering technology.

PROJECT UPDATES

Because of the COVID-19 pandemic and the hands-on nature of AMSI, we delayed the student and professional development institutes until Summer 2021. This change presented an opportunity to focus on evaluating and enhancing our programming. AMSI lead faculty member Mike Kunselman designed a master curriculum to serve as the institute's primary strategic document. The curriculum affords the flexibility to adjust individual learning objectives while still maintaining the overall strategic purpose of the institute and ensuring sustainability of the program beyond the grant timeframe. Additionally, we determined that some scheduling changes will make AMSI more accessible to students and faculty.

CONTACT INFORMATION

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