

T³ Teaching Through Technologies

A new project led by the Alaska Upward Bound program is using emerging technologies to increase the interest of low-income and first-generation-to-college high school students in science fields.

The “Teaching Through Technologies (T³) Alliance” instructs Upward Bound students in three novel technologies - unmanned aerial systems, 3-D printers, and codeable digital devices - to attract them to science, technology, engineering and math (STEM) disciplines. Upward Bound is a nationwide program that uses after-school and summer instruction to encourage at-risk students to continue to higher education. T³ will institute curricula based on the three technologies at Upward Bound programs in at least 18 states and territories, engaging more than 360 students.

“Upward Bound targets low-income students, as well as students who aspire to be the first member of their family to attend college,” said John Monahan, director of Alaska Upward Bound and principal investigator of T³. “It’s really hard to convince these students that they have what it takes to succeed in STEM fields, and this sort of program can go a long way toward both getting them excited about STEM, and giving them the confidence to pursue it.”

The 3-year program is funded by a \$2.1 million NSF EPSCoR award and builds on “The Modern Blanket Toss,” a successful NSF EPSCoR-funded project that used unmanned aerial systems to build interest in STEM fields through Upward Bound curricula in five rural Alaskan high schools. “The Modern Blanket Toss showed that novel technology is a great ‘hook’ to get kids into the sciences,” Monahan said. “We’re excited to be able to add new elements to the program and to take it nationwide.”

Instructors and students for the program will be recruited from at least 36 Upward Bound sites and given materials and online and in-person support to build a hands-on curriculum based on these three technologies. In addition to learning about the technologies, students will receive instruction in STEM communication and leadership, and will participate in community service projects using the technologies. Co-PI’s of the program are Nicole Norfles of the national Council for Opportunity in Education and Alaska EPSCoR Associate Project Director Pips Veazey, who will help to implement the curricula and to establish connections between Upward Bound and their respective organizations.

