The Evolution of Upward Bound

This year, Upward Bound celebrates its 50th year of helping students succeed in college. The Department of Education-funded program established as part of the Economic Opportunity Act in 1964 and its sibling program founded in 1990, Upward Bound Math-Science (UBMS), serve high school students from low-income families and families in which neither parent holds a bachelor’s degree. While UBMS specifically focuses on strengthening these students’ science and math skills, both it and Upward Bound have evolved into opportunities for students to receive a quality science, technology, engineer- ing, and math (STEM) education, and for teachers to gain experience working with at-risk students.

“All of us together need to do what we’re doing to educate students in science and math... We need multiple types of programs to be part of the solution [of strengthening the STEM pipeline] because the problem is so vast,” says Diana Tapias Wright, Upward Bound director at Reedley College, a community college in Reedley, California. Reedley has three Upward Bound grants and three UBMS grants totaling $1.5 million annually. Because the area is “very agriculture-based and high-poverty” and 92% of Reedley students’ parents don’t have a high school diploma, “our need is very great, and our interventions need to be great... We [view] ourselves as the educated parent,” she asserts.

“Our accountability to Washington, D.C., is quite high,” she points out. For example, when a community college applies for UBMS grants, it must “show that it has research being conducted on campus or can expose students to research. Reedley partners with major universities [for that reason],” she explains.

“Our students are busy all year-round and engaged for all four years,” even devoting Saturdays to work on science projects with university faculty mentors and to visit science museums and university campuses, she observes. And their connection with Reedley’s Upward Bound programs doesn’t end with graduation: “Our students call us for advice when they have a problem at college; they call us for job references and background checks, she relates. “We follow up for many years after graduation.”

Flexibility and Versatility
“How we implement the [Upward Bound] guidelines differs from institution to institution,” says Becky Colanino, UBMS director at the University of Maine. At that site, students work on Group Design Projects and Individual Research Projects on campus in the summer “instead of a traditional curriculum,” she explains. “We travel to them during the school year; we’re like traveling guidance counselors,” she relates.

For the past two summers, the university has partnered with the National Science Foundation’s Experimental Program to Stimulate Competitive Re-

An Upward Bound Math-Science student at the University of Maine coats paper samples with a formulation made of cellulose nanofibers, starch, and latex to test the best ratio of coating ingredients.

See Upward Bound, pg 5