Stimulating Enthusiasm, Exploration and Discovery through Biotechnology Education (SEEDBEd): A National Science Foundation Advanced Technology Education Investigation

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ABSTRACT

The purpose of the SEEDBEd project was to stimulate a pipeline of biotechnology students at Tulsa Community College (TCC), leading to highly skilled biotech professionals in the region of northeastern Oklahoma and surrounding areas. SEEDBEd worked to adapt biotech-related learning materials to meet Oklahoma secondary science standards and implement them in middle and high schools; provide education for teachers to easily and effectively incorporate inquiry-based biotech experiments and discussion into their science curricula; and provide students with a seamless educational pathway leading to a career in biotechnology. The methods of the investigation included development of a series of biotechnology summer academies for teachers and high school students; articulation agreements with high school and university programs; a high school teacher footlocker loan system; and an annual high school student biotechnology extravaganza. The intellectual merit of the project was the potential for improving student learning in science through the development and implementation of curriculum materials to support biotech exploration in secondary schools, while the broader impacts included outreach to minority populations who are under-represented in science professions, thus promoting diversity in the technical workforce. Stimulating college enrollment in biotechnology programs leads to a cadre of skilled biotechnicians critical to filling the demand of local, regional and national employers.

RESULTS

Outreach activities continue with annual biotechnology workshops for Upward Bound youth, and the Allied Health Education Center Math and Science in Health Careers (NASH) camps. The Middle School Teacher Biotechnology Academy is offered through continuing education. We continue to develop programs for the middle and high school teachers and students, and thereby cements the pipeline to Tulsa Community College to deliver a diverse group of biotech professionals for the field.

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