

School programs focus on biotech problem-solving

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MassBioEd, the education arm of life sciences industry organization MassBio, is forging ahead this year with a program designed to excite teenagers about biotechnology even as state funding for the program dries up.

BioTeach, a program that puts new equipment into Massachusetts schools and trains teachers in how to use project-based teaching that connects students to real-world biotech problem-solving, is in its fifth year, and is increasingly counting on support from the industry that may benefit from its work.

The program has grown to 177 schools, involving 500 teachers, and has touched 26,000 students, according to program director Robert Ross. Awards are made in the range of \$3,000 to \$8,800 per school.

“Although we have one of the strongest education systems in the country, we have one of the lowest numbers of students going into careers in math and science,” Ross said. Ross said between 25 percent and 30 percent of California high schoolers go into math and science, compared with 18 percent in Massachusetts.

“I never had a shortage of students interested in science, but they thought they needed a four-year degree and many couldn’t afford that,” said Paula Beisheim, a biology teacher from Norton High School that is part of the BioTeach program. She said students have been able to learn about different types of biotech jobs that require just a two-year associate’s degree or a one-year certification program.

Dave Form said the program has been inspiring to his students at Nashoba Regional High School in Bolton. He teaches two biotechnology classes. Form said the addition of cutting-edge electrophoresis machines has enabled students to do a wider variety of projects in less time and with more accurate results.

“We had one unit about resistance to antibiotics, and we took bacteria from apple peels. We even took bacteria from students’ hands. Most of the time, we would find that the bacteria was resistant to some antibiotic,” Form said. He said his students feel empowered because instead of just using a piece of equipment or a lab method once, they use the same skills over and over to solve different problems.

Form jumped at the chance to participate in something new this year — to get out of the bio lab, and get into the computer lab, through a collaboration between MassBioEd and Children’s Hospital Boston. The Games for Good

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camp, which lasted a week, paired teachers and students with the challenge of coming up with a game that could help kids learn about the body and diseases.

Nashoba was the winning team, with a game about stem cells that guides a “super cell” around to different parts of the body to see if could turn into, say, a kidney cell.

“What was great is that it both taught the kids about stem cells and also about how different parts of the body work,” Alex Chisholm, executive director of Generation Cures at Children’s Hospital. Generation Cures has previously engaged with younger children on games, and this was its first foray into working with teens.

“We thought they might walk out after the first day, (which) was a series of science-heavy lectures, but they all stayed,” Chisholm said. Chisholm hopes to hold future sessions of the camp during the school year, which would actually allow students to use game coding software to complete their visions.

As for the BioTeach program, it has an ambitious goal to eventually have a presence at every school in the commonwealth. But current economic conditions are throwing a wrench in the mission. The program won a \$1.4 million grant in 2005 from the U.S. Department of Labor; in 2006, the state allocated \$1 million, followed by \$750,000 in 2007, and \$450,000 in 2008. State dollars for the program fell to zero in 2009, due to the budget shortfall.

The goal is for these programs to eventually become self-sufficient, but this is the first year that the program had to push some schools out of the nest — asking them to foot the bill for continuing the program. BioTeach can’t afford to add any new schools and now has a waiting list.

Before the capital markets collapsed and VCs became gun-shy, biotech companies had named workforce development as the top challenge. As the recovery takes hold, biotech companies will become increasingly hungry for talent. So perhaps it is no surprise that Cambridge-based Genzyme Corp. is the largest corporate sponsor, donating \$250,000, followed by Rockland-based EMD Serono, which has contributed \$150,000. Other corporate donations come from Biogen Idec, AstraZeneca, Cubist Pharmaceuticals, Millipore Corp., and Wyeth Pharmaceuticals. BioTeach also benefits from a yearly golf tournament that raises \$100,000.

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