He inspires youth to pursue science

By Andrew Rimas
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When a man dresses up like a wizard, he’s probably selling something. In the case of Brandeis University chemistry professor Irv Epstein, he’s trying to sell college-level science classes to an often-indifferent American youth. But donning a shiny conical hat is merely the tip of Epstein’s efforts to market hard science to teenagers.

“When I began to introduce magic into freshman chemistry, the students seemed happier, and their grades were somewhat higher,” says Epstein, who, with his brambly beard, rampant eyebrows, and smiling good humor, looks the very model of a merry wizard.

The Howard Hughes Medical Institute recently gave Epstein a $1 million grant to attract new students, particularly minority students, to the sciences. He’s doing this in conjunction with an organization called the Posse Foundation, whose goal is to encourage inner-city youths to attend college together.

For nearly 10 years, Brandeis has been enrolling “posses” of youths from the same neighborhoods, who can support one another through their college years. The program has proved a success, with a 90 percent graduation rate. Now, Epstein wants to expand the program to recruit two annual “science posses” in which the students are prepped for immersion in the world of logarithms, calculus, and molecular structures. “In a typical posse of 10 students, you’ll get three interested in science,” says Epstein.

Epstein hopes this effort will help remedy the dearth of “underrepresented” students — meaning non-Asian minorities — in the sciences. “In introductory science courses, you see a sea of white faces,” says Epstein. “And it gets whiter and whiter as you go on.”

But he’s motivated by more than questions of social justice. “There are dire strategic and economic implications,” he says. “We’re relying on human subsidy from other countries to fill the gaps in our ranks of scientists. But now it’s becoming more attractive for students from China or India to go back rather than stay here. If we don’t start producing domestic scientists, we’re in trouble.”

Epstein has exactly the sort of credentials that he’s trying to cultivate in his students. Born in New York, he grew up in Queens before taking an undergraduate degree at Harvard. “I was always good at science, and I liked it,” he admits. Then came a Marshall Scholarship at Oxford and a return to Harvard for a doctorate in chemical physics.

“I was hired by Brandeis to do research in quantum mechanics,” says Epstein. “But I got interested in oscillating chemical reactions.” These are the flashier sort of chemistry experiments — the ones in which the contents of a beaker produce moving colors and rhythmic patterns. They’re ideal for drawing the attention of daydreaming undergraduates. The problem is keeping that attention through the grunt work of learning a discipline.

“There’s no easy way to learn science,” says Epstein. “It is hard. Students are often so taken aback by the effort required at college-level chemistry that they quit.”

Epstein thinks that his “science posses” will be successful if seven out of the 10 students in the posse choose careers in the natural sciences. This year he’s developing the program to achieve that — talking to high school science teachers about potential recruits and hiring people with a science background to encourage young people to consider pursuing science in college. “It’s hard to get people with a science aptitude to teach” grade-school students.

Meanwhile, Epstein continues to draw students to his colorful classroom shows. “To inspire kids to want to learn that material,” he says, “I blow stuff up.”