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A haven for science at CGA

Anthony Cronin

Science and math. Two subjects some high schoolers would rather avoid.

That troubles John Birch - so much so that he created an innovative summer program that instructs teachers how to make subjects like math, or science, or technology, more relevant, more exciting and, quite frankly, more fun.

Birch is the founder and president of The Birch Group LLC (www.thebirchgroup.com) who also serves as the executive director of a program called the "Engineering Challenge for the 21st Century." During the week of July 12, Birch engaged with dozens of high school and community college teachers from Connecticut and across the country in a training program designed to help their students become interested in the so-called STEM disciplines: science, technology, engineering and math.

The weeklong program was hosted by the U.S. Coast Guard Academy in New London, and Birch says his program couldn't find a better, more hospitable - and engaged - host.

"The Coast Guard was fabulous," says Birch, whose consulting business is based in New Britain. "The teachers worked with them on their robotics water program and they spent the whole day with them - the teachers had a ball and they have experiences they can bring back to the classroom," says Birch.

The project-based learning program engaged the teachers in two assignments: build a car powered by a hydrogen fuel cell, and use the Coast Guard's robotics-on-water program to address various marine environmental challenges.

Birch says the engineering challenge program, which began in 2003, stresses both technical and academic excellence in the areas of science, technology, engineering and mathematics. But, he also says the engineering challenge program focuses on some key "proficiencies" such as respect, oral communications, accountability, leadership and people skills. "The program has enormous range and application in our evolving world and the education of the work force in the 21st century," explains Birch.

The program was initially developed to interest inner-city and underrepresented high school students to pursue educational opportunities, and careers, in the STEM disciplines. The Birch Group developed the program and manages all its aspects during the five-day intensive workshop at the Coast Guard Academy as well as student workshops that are held throughout the year.

The engineering challenge is underwritten by the National Science Foundation, the Connecticut College of Technology and its affiliated Regional Center for Next Generation Manufacturing and the Hartford-based Connecticut Business & Industry Association.

During the week, the program showed the teachers some of the various methodologies they can use to get students motivated and interested in the sciences, or engineering, or math. "We take teachers we've never worked with before, we bring them in, all expenses paid, and the reviews are just top notch," he says. "It's been a very successful program."

The engineering challenge, Birch says, teaches students "to believe in themselves, that they can do engineering work and technical work and go on to college." He says many of the students who've participated in the engineering challenge have pursued college studies.

"We teach them some basic engineering skills, team building, personal accountability ... we teach them how to do technical writing," he says. "It's designed to break the cycle of poverty

in this country and to prepare Connecticut manufacturers with a better prepared and better trained work force. For the kids, when they get out of the program, they believe in themselves," says Birch.

This month, Birch and the others staff members involved in the engineering challenge brought the message about the importance of science, math, engineering and technology to 24 teachers, who, it's hoped, will bring that strong message back to their students. Birch says the engineering challenge trains 125 students annually.

He admits it's a lot of work for all involved, from the teachers to the program instructors, but it's for a great cause: to further inspire students to embrace math, and science, and technology.

"This," says Birch, "is my passion in life."

Anthony Cronin is The Day's business editor.
