

Tech program is just what the doctor ordered

FARMINGTON — You go to a doctor's office for your annual physical, and the doc uses a stethoscope to test your lungs. But do you, an ordinary consumer, have any idea how to actually make a stethoscope?

Would it be interesting to actually make one? How about making a specialized stethoscope that can detect when hospital-bound premature babies need to be fed? Or an electrical-mechanical device that can detect whether those babies are breathing?



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CONSUMER
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To be honest, I never thought about such things — until yesterday when I attended a workshop at Tunxis Community College for 20

Connecticut high school and community college teachers.

It was part of a weeklong program to teach those teachers how to conduct classes in the next school year for select students who will learn how to make those very real practical devices. These special classes also aim to support and encourage the students to take up careers in science, math, engineering, and technology.

The classes — each about four or five days' worth — are taught at Manchester Community College, other state community colleges, and various high schools statewide on weekends and during the spring break as part of a program designed by the New Britain-based Birch Group and funded by the Connecticut Business & Industry Association and the Hartford-based "virtual" Connecticut College of Technology.

The Birch Group started the program seven years ago, after company founder John Birch, a former Aetna Life & Casualty manager, had several conversations with a number of state manufacturers in high-technology fields.

"What I was hearing was that

people graduating from technical schools didn't have leadership skills, the ability to function effectively on a team, personal accountability, and technical writing skills," Birch told me. Not only that, but the manufacturers were not finding enough qualified and interested young workers to fill critical job slots.

"Heavy manufacturing is never coming back to the United States," Birch said, "and the future of Connecticut and the U.S. economy is going to be predicated on the states, the community college systems, the four-year colleges, and the high schools developing students who are highly qualified in the new technologies in manufacturing."

But first you have to find students who might be interested. Birch targets large, untapped populations of youngsters in inner cities, particularly girls.

Next, you have to show the students that engineering or technology is not boring and has very real applications.

"We're trying to show them that engineering is not just about gadgets," said Birch team member Ron Adrezin, an expert in biomedical and mechanical engineering and a mechanical engineering professor at the U.S. Coast Guard Academy. "We try to bring out the caring and creative aspects of engineering. Studies have shown that a lot of girls don't consider engineering because they just see the technical gizmo thing, not how it helps people." Hence the stethoscope and the breathing detector, all for the benefit of premature babies.

The need for the specially sensitive stethoscope, Adrezin says, is that stomach gurgles that indicate hunger are very faint in premature babies. The device to detect breathing in premature babies involves chips inserted into a circuit board with a switch connected to a rod that touches the baby's stomach. When the rod moves up and down, a light-emitting diode on the circuit board remains lit. When the rod stops moving, the LED goes out.

Another aspect of the program



John Birch, standing, far right, observes teachers creating a special stethoscope that can detect hunger signs in premature babies during a workshop on Tuesday at Tunxis Community College. The program was designed by his New Britain Company, the Birch Group.

you won't find in the usual high school or college class is "behavioral diversity" in team-building, teaching students four "key behavior styles: the dominant, the influencer, the steady relater, and the cautious compliant."

"A lot of misunderstanding and miscommunication revolves around them not understanding people of different behavior styles," Birch says. "So we teach people about themselves, and then we teach them about all the other behavior styles, how to understand them, what to expect from them, and how to communicate better with them."

Now there's a good idea: making sure that future qualified workers — especially those from the inner city — not only know how to do high-tech jobs but are also prepared to survive in a variety of unfamiliar work environments with all sorts of people they may never have experienced. Kudos for that.

"We spend a lot of time working with them to let them know that they can do it if they have the capability," Birch says. "Some of these kids come from very disad-

vantaged families, and we help these kids believe in themselves."

Around 175 students have gone through the Birch program in the last seven years, and, Birch says, out of every session, four or five students who thought they could not do it have then gone on to two or four-year colleges headed for high-tech careers.

That's satisfying, although Birch acknowledges the numbers aren't big.

Recent state efforts are helping, he says, "but a lot more can be done."

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