Q&A

The Beauty of Technology

Professor Paul Ampadu finds success in getting young people interested in science and engineering.

Interview by Kathleen McGarvey

Paul Ampadu, an assistant professor of electrical and computer engineering in the Hajim School, is an expert in reliable, energy-efficient integrated nanoscale circuits, systems, and architectures. He also works to encourage low-income, first-generation, and underrepresented minority students to pursue careers in science and engineering.

Ampadu, who was born in Ghana and educated in China and Taiwan before earning his doctorate from Cornell University in 2004, mentors freshmen through the Early Connection Opportunity (ECO) program and also works with high school teachers through the National Science Foundation–funded Research Experience for Teachers program.

In recognition of his scholarship and outreach, Ampadu will receive a Special Recognition award in February during the Science, Technology, Engineering, and Mathematics Global Competitiveness Conference sponsored by the Black Engineer of the Year Awards (BEYA) organization.

What are some of the obstacles in attracting students to engineering?

One impediment is definitely perception. The typical engineer on TV is portrayed as funny, the nerd. People see shows like *ER* or *L.A. Law* and think a doctor's or lawyer's life must be very glamorous. But the engineer works tedious jobs, is unfriendly, and is quirky.

And how do you overcome that?

Fortunately, it's not all bad. We live in a world that surrounds us with technological gadgets, so we can show young people that science and technology are cool.

RECOGNITION: Most people—"with some hard work, motivation, and caring teachers"—can find success in engineering, says Paul Ampadu, who will be recognized this winter for his work with incoming freshmen and with area high school teachers.

Technology is indeed everywhere—things any 16-year-old would be interested in, like cars, videogames, movies, the i-gadgets. We have tons of opportunities to excite young people about the beauty of technology, the creation of technology. And who's the richest man in the world? Bill Gates—and he's a nerd?

It's not all about perception, though, is it?

It's also about innovative teaching. Engineering, science, and technology can be challenging. People tend to think, I'm not good at math, so they don't look at careers that demand it. There's a story I tell my ECO students when they first come in. I ask, "How many of you love math?" You see a few slow hands. If out of a crowd of 60, you get 10, that's a miracle. Maybe you get three or five. I say, "How many of you think I'm good at math?" Almost all the hands go up. I say, "What if I tell you I was one of the worst math students until I was 12? Then I started thinking about doctors, and the successful people I saw. And when I talked to those people about what they did, they all said, 'You need math.' So one day, I shut the door, just me and a math textbook. And I said, 'O.K., it's me and you.'" We can make people think engineering is only for a select few, but the bottom line is, it's not. Most people, with some hard work, motivation, and caring teachers, can do it.

When you work with ECO students, are some already interested in becoming engineers?

I ask them what they want to do, and it's usually the familiar professions. They want to be doctors or lawyers—what they see on TV. Unless you know an engineer, you don't usually get up in the morning and say you want to be one. ECO students typically come from schools and home environments that have given them challenges. So the University, in partnership with New York State, says, "We've admitted them—what can we do to help them succeed?" We bring them to campus in the summer and immerse them in a boot camp to see what college is like. We show them the resources here for them—and we, the faculty and staff, are resources. We spend a month of the summer on campus, working with them. We tell them, "We care about you," and we let them see how valued they are. Later, after the program's over and during the semester, students stop in my office and tell me how they're doing. When you see a confident, succeeding student who could have been overwhelmed and dropped out, you can't put a price on that.

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