

From Camp to Career: Pioneering a Female Engineering Pipeline



by Heather DARROW

Samantha Smith

Samantha Smith has big dreams. She envisions a future of nanobots removing pollutants from water and sleek devices recycling the vital liquid so no human would ever suffer from a lack of the precious resource. Smith's daydreams are rooted in her love of science. The fact that many engineers do not look like her does not faze her at all.

"There is a stigma that women are not smart enough to become engineers, and I do not agree with that. I think it is a great step for women to get more involved in

Science, Technology Engineering and Math (STEM) careers," Smith said.

As a Collin College student and a public relations officer for the college's Society of Women Engineers (SWE) chapter, Smith is doing her part to help girls consider engineering careers. She volunteered at the Collin College all girls and co-ed robotics camps, sharing her love of science with middle school and high school students. She believes women mentors can help change the landscape of the engineering field.

"Professor Tripat Baweja was my first engineering professor. She is intelligent, strong and passionate about engineering. Engineering Mechanics I was intense and challenging, but I grew a lot. I could

see what is behind the basic laws of physics—the bare bones of mechanical engineering—and I just loved it," said Smith who plans to transfer to The University of Texas at Dallas (UTD) this fall to pursue a degree in mechanical engineering.

Forging a Sisterhood in Higher Education

The only girl in her family, Naomi Beltrand was not intimidated by her two older brothers and their many friends.

"It felt like I had about 10 brothers. The key to working with guys is to not be afraid to voice your opinion. Engineering needs a lot of creativity. One gender in the field cuts



Naomi Beltrand



Katharine Noddin

the creativity by half. How we get from A-Z is very different for men and women. Working together gives a well-rounded picture and product. Only 15 percent of engineers are women. There's no reason why the percentage of women in engineering

cannot change," said Beltrand, who is pursuing a software engineering degree at UTD.

Beltrand chose Collin College for a variety of reasons.

"All the professors at Collin love to teach, and they have worked in the

field. I am paying for my own education, and it is significantly less expensive at Collin. I received a SWE scholarship and a Comet Transfer Scholarship because I attended Collin. I will graduate without any debt. That is a big deal," she said.

Programming was a foreign language to this woman before Collin College. Beltrand took the C++ track and Java classes. Her paper "Radars in Stealth Technologies and the Algorithms that Bring Them Success" was accepted in the Collin College Undergraduate Interdisciplinary Student Research Conference.

Beltrand enhanced her leadership skills as the third president of the Collin College chapter of SWE. Her goal was to increase relationships with companies and universities. As president, she spearheaded resume-building workshops with Raytheon, which are still held each spring.

"Collin College prepared me well. Every class I have taken at UTD has been a junior or senior engineering course. If I didn't have a solid foundation I wouldn't have all As," said Beltrand who holds a 3.97 GPA at the university and secured two internships at Lockheed Martin.

Extending the Pipeline

Engineers have been bolstering Katharine Noddin since she was a single mother living with her parents. Each night she would surround herself in books with titles like differential equations, physics and calculus at the local coffee shop. Random engineers stopped to assure her that she would survive those classes.

"It was a support system of people I didn't even know. Today, if I see someone like me I would do the same thing," said Noddin, a software engineer at Qorvo, a company that offers RF solutions for advanced wireless devices, defense radar and communications.

Noddin earned an associate of science degree from Collin College in 2007 and a Bachelor of Science degree in electrical engineering from UTD in 2010. At Collin, Noddin was selected as a Community College Aerospace Scholar, and she received a Science, Math, Advanced Research, Technology (SMART) scholarship and a NASA Motivating Undergraduates in Science and Technology (MUST) scholarship.

Noddin took Dr. Greg Sherman's physics class and says she lived in the math lab, which she describes as phenomenal.

"Dr. Sherman wanted just one of us to be a physicist, but we were all electrical engineering students," she said laughing.

"I never met a professor that was so enthusiastic. He did not give up on me. He didn't get frustrated. He was there with you until it clicked."

Over the years Noddin has worked for different companies, and

she says she is seeing more women in engineering.

"In my group, we have a ratio of two females to one male, and the director of our group is a female."

A male colleague from a former company once asked Noddin if it was hard being female.

"Knowing this colleague had daughters, I responded, 'My dad didn't treat me any differently. I was right there along with my brother changing spark plugs and oil on our cars. Surely you don't treat your daughters differently?' Regardless of whether they are female or male, when you get a bunch of engineers together the possibilities are endless."

For more information about Collin College, visit Collin.edu. ♦

Heather Darrow is a public relations writer at Collin College.

Photo by Nick Young, Collin College photographer.

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