Innovator, mentor helps Ford move forward

Dr. Reates Curry combines her passion for human-machine interaction with guiding young engineers

When Dr. Reates Curry began exploring career options in high school, she did what so many of us did and took a career-personality assessment test.

The recommended result? An engineer. Her response? “Pretty cool — I get to drive a train,” she said. At the time, she’d never met an engineering scientist.

Dr. Curry freely shares this anecdote with a laugh, a testament to how far women have advanced in engineering, as well as a reflection of her ready sense of humor and warm personality. She is a technical expert at **Ford’s Research and Innovation Center (RIC)** and a member of the **VIRtual Test Track EXperiment (VIRTTEX) laboratory**.

She also has co-authored more than 55 technical reports, conference papers, and journal articles, and she has twice been recognized with Ford’s prestigious, team-focused **Henry Ford Technology Award.**

October 2016, Dr. Curry received a national award for mentoring from the Society of Women Engineers (SWE). This past February, this SWE recognition led to her being named the **No. 4 female engineer in the U.S.** by Business Insider Magazine.

A foundation in fellowship

All of these accomplishments are nice, but what’s really remarkable about Dr. Curry is her passion for giving back. She has recruited, mentored and presented at more than 15 National Society of Black Engineers conferences, as well as at two SWE conferences.

At RIC under Product Development, Dr. Curry is known for helping new employees. This led to her affiliation with Ford’s Women in PD (WiPD) mentoring circle, where she is currently co-mentoring nine women engineers.

Sena Hermiz was one of the women who benefited from Dr. Curry’s mentorship. Hermiz, a HMI Quality Engineer, was Curry’s mentee in the Women in Product Development mentoring circles in 2016.

“She’s a delight to be around, always has a positive attitude and a smile on her face,” Hermiz said of Dr. Curry.

"One of our topics for the mentoring circle was to get help filling out our goals for the performance review. I remember that I couldn't make it to that particular meeting, so Reates took the initiative to contact me individually and volunteered to sit down with me one on one to complete it," Hermiz said. "I benefited greatly from her feedback and she made the process easier for me to complete. I still look back at her notes every year when performance review time rolls around."

Pramita Mitra, a research engineer in RIC, said Dr. Curry befriended her the first time they met, and the two have stayed in close contact ever since. "We met each other in the women's restroom," Mitra said. "She realized I'm a new hire. She's very welcoming with new hires."

Dr. Curry was quick to share her experiences with Mitra to help her with her transition to Ford.

"The mentor and mentee is a very special relationship ... you have to strike a chord with each other," Mitra said.

After such a positive mentee experience, Mitra is poised to follow her mentor's example.

"Reates makes mentoring a really fun experience," Mitra said. "Hopefully when I become older, I can take more of a mentor and senior leadership role like her, and I would like to be exactly like her."

Dr. Curry's giving nature can be traced back to her childhood. She was raised by two educators in suburban St. Louis. Her 90-year-old father, affectionately known as the "shot doctor," still volunteers to help refine the shooting skills for the high school girls' basketball team that recently won the state championship.

Dr. Curry first found her engineering footing with her younger brother, also an engineer. Together, they would tear things apart to see how they worked – bicycles, walkie-talkies, you name it. "A lot of times my brother and I were partners in crime," she said. "We'd say, 'Let's see what's inside this golf ball? OK, you go get the ax – I'll get the golf ball' … Things we took apart didn't always work when we put them back together again."

Dr. Curry listened to her calling and studied Electrical Engineering as an undergraduate at the University of Missouri. "I never wavered from wanting to pursue engineering," she said. "I never thought, 'No, I don't want to do this because it's so hard.'"

While at the University of Missouri, she applied for a fellowship to pursue a master's in engineering at Purdue University.

As part of the fellowship's consortium, she worked at NASA where she met her future husband. After finishing her master's, she worked in the Washington, D.C. area at a federally funded research lab. While there, she worked on the integration of the U.S., European, and Japanese space modules as part of the International Space Station (ISS).

Dr. Curry's career continued to take flight after leaving the D.C. area. She went on to receive her Ph.D. in Biomedical Engineering from Rutgers University, with a specialty in human-machine/computer interaction. After finishing at Rutgers, she joined her husband and relocated to Ann Arbor, Mich.

Opportunity knocks at Ford

It wasn't long before Dr. Curry landed a job of her own in Michigan. Her resume and experience with eye-tracking technology caught the attention researchers at Ford's Scientific Research Lab (now RIC). She transferred her PhD knowledge of understanding how humans scan and inspect objects to implementing key human-scanning strategies using cameras and algorithms to improve the automated inspection process. At Ford, she transferred her eye-tracking knowledge into understanding where drivers are looking, to maximizing the eyes-on-the-road time to keep drivers safe.

Dr. Curry continues to concentrate on HMI as part of Ford's efforts to design autonomous vehicles. (Ford is targeting having a fully autonomous vehicle on the road by 2021.)

Even though Dr. Curry frequently works with and on cutting-edge technology, she makes sure she stays open to new ideas. "For me, ideas pop into my head at weird times, like from a dream," she said. "If I don't write them down right away, after I get up, they evaporate and then I cannot remember what seemed to be a great idea at the time."

So what advice does this innovator and mentor have for others to keep the ideas flowing? For Dr. Curry, the mother of two children, the answer is fairly obvious: Stay curious, write down your ideas, and follow up by doing a Google search and checking the **patents website**. If it is a novel idea, in the case of an automotive innovation, then consider submitting it to **IdeaPlace**.

Dr. Curry's final advice when it comes to innovating is the same advice she gives to youth. "I always encourage them to keep asking lots of questions," she said. "When we're young, we ask a ton of questions. As we get older, we're discouraged from asking too many questions. In most cases, asking lots of questions leads to innovating, and a resulting innovation is a solution to a problem that has not been addressed. So, keep those questions flowing!"

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