

Talkin' 'Bout a Revolution

May 06, 2014

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The word she keeps using is “obsessed.”

Jackie Birdsall became “obsessed” with cars when she was a teenager. That made her “obsessed” with the history of auto icons like Henry Ford and Lee Iacocca. In 2003, she did an internship with Daimler-Chrysler, leading to an “obsession” with hydrogen fuel cell technology.

And now, as an engineer at Toyota Technical Center, Birdsall is “obsessed” with bringing fuel cell technology to the masses.

But perhaps you need to be obsessed when you’re trying to change the world. After all, revolutions don’t blossom from complacency.

Leading an alternative fuel revolution is just what Birdsall and her partners on the Fuel Cell Hybrid Vehicle team are doing. Collectively, they’re finding tangible ways to reduce fossil fuels in the automobile world and figuring out how hydrogen fuel cells can be useful and affordable. In 2015, that obsession will bear fruit when Toyota’s FCV hits the markets in California, Japan and Europe.

Individually, Birdsall’s job is to test Toyota’s fuel cell vehicle and ensure hydrogen stations fill tanks in a reasonable amount of time. She also represents Toyota on a variety of codes and standards committees. But no matter her role, her obsession is clear.

The Road Less Traveled

Birdsall grew up in Sacramento and, as a teen, found a knack for modifying a friend’s Honda Civic. Her first job in the auto industry was at Pep Boys. Her first car was a 1987 Camry. “It was silver, and it was a little embarrassing to drive to high school because I did *not* go to high school in 1987,” Birdsall says. “The car was born three years after me. But I ended up loving it.”

Her passion for the auto industry boiled over and the California girl decided to go to Kettering University, formerly General Motors Institute, in Flint, Mich. Flint was a major player in the auto industry’s history. Some of America’s greatest cars were manufactured there, and she could live on Chevrolet Avenue. What more did she need?

“They had great classes,” Birdsall says. “You get to learn metallurgy and welding and the applied math and theory behind how an engine works. I got so excited about it. It blew my mind. I just wanted to work with vehicles. But I didn’t define my concentration until after my first co-op.”

Kettering’s unique split between classroom and work experience did its job. She stumbled upon Daimler-Chrysler’s fuel cell prototype during that 2003 internship. That was a key moment in her life.

“So I can work on a car that has zero emission, that uses fuel you can make from any domestic resource, fills up in a matter of minutes and can completely replace the internal combustion vehicle?” She says. “I became obsessed.”

There’s that word.

The path to Toyota fell into place: Move to Vancouver for a co-op with General Hydrogen, a fuel cell forklift company. Then graduate from Kettering and join the California Fuel Cell Partnership to help major car companies develop hydrogen-powered vehicles. Birdsall finally came to Toyota in 2012 because it was clear they would be one of the first companies to mass produce hydrogen fuel cell vehicles.

Nerd Talk

Yes, Jackie Birdsall is a proud nerd. But she's not a nerd in the old fashioned sense. She defines the new nerd who uses her passion and encyclopedic knowledge to help solve a problem that needs solving. That's what she's doing with fuel cells.

She's the type of nerd who speaks about her expertise with so much enthusiasm, she pulls you to her side with ease.

The highlight of her life so far? Maybe the time she saw Geoffrey Ballard at General Hydrogen. "I geeked out so hard," Birdsall says. "I had to call my friend to tell her Dr. Ballard was there and ask her if I should say hi. She told me if I didn't, I'd regret it."

She did say hi. He said hi back. But wait, [who the heck is Geoffrey Ballard?](#)

"He was a huge advocate for fuel cells," Birdsall says. "He was THE MAN!"

Turns out the late Dr. Ballard is considered the father of the fuel cell industry and the founder of General Hydrogen. That explains Birdsall's geeking out. Imagine a movie buff seeing Walt Disney or Charlie Chaplin back in the day. That's the kind of importance we're talking about.

Ballard is part of the reason Birdsall is at Toyota. He's part of the reason Toyota is proud to be among the first to bring hydrogen-powered cars to market.

Even when that happens, Birdsall's fuel cell obsession won't stop. But it will be a pretty big moment for her and her teammates at TTC.

"Right now, I have the best job in the world for me," she says. "I'm going to lose my mind when the first vehicle rolls off the production line. To be talking about a full commercial launch, that's pretty much the biggest victory I can have in my life."

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