

STEM SPOTLIGHT

Reuben F. Burch V

Engineering Principal
FedEx Express



BS in Computer Engineering
Master of Eng. Management in Industrial
& Manufacturing Systems Engineering
Ph.D. Industrial & Systems Engineering

Mississippi State University
Kansas State University
Mississippi State University

Q How did you select your college major?

A Selecting a major for my undergraduate degree was primarily based upon one of my favorite past times: video games. Video games caught my interest very early in life and became an important outlet for both my technical curiosity and creativity. I learned multiple programming languages throughout my teenage years in a poor attempt to write my own games so when it came time to select my major, I opted for Computer Engineering because I loved the prospect of getting to design software and build computer hardware. Later in life, I pursued my Industrial Engineering degrees when I developed an even greater love for defining processes as well as learning how humans interact with tools. Learning to design better interfaces and industrial tools was a very exciting way to put my existing computer engineering knowledge base to use in a completely new area.

Q What was the biggest influence in your selection of major/ career?

A Regarding the decision to become an engineer in the first place, I owe that to my parents. From a very early age, I liked to put things together (Legos) and take things apart (everything else). My father (an Electrical Engineer) and mother (someone capable of tolerating engineers) were keenly aware of the early signs of engineering traits. I was very fortunate to have a solid foundation at home with parents who encouraged me to take the difficult high school classes like advanced math and engineering basics: physics and chemistry. The financial component was always an appealing motivator for becoming an engineer but more importantly, I wanted to do something that no one had ever done before and change industry. I went back to school (twice) so that I could be better equipped to influence change and help make the lives of our industrial workforce better and more effective.



Mississippi State University
Commencement Ceremony
May 16, 2014

ZAP

Q If you could go back to high school and select any elective course to take that would have better prepared you for college, what would it be?

A I went to a small private school in the middle of Alabama so I think I literally took every high school elective there was except for the yearbook staff and three years of study hall. However, today's high schools offer so much variety compared to the late 1990's when I graduated. I wish I had the option to take classes in computer programming because even though I read programming books and tinkered with source code, I wasn't as well prepared for my first programming classes as I would have liked. To flip this question, my calculus and physics teacher was incredibly challenging and I give her credit for all of my engineering success. I took six calculus classes during my undergraduate degree and not one of them could duplicate the difficulty of my high school calculus class. The rumor was that my math teacher was a former marine and she had won an arm wrestling competition to obtain her customized TI-85 calculator... unfortunately, we may never know the truth.

Q What is your favorite aspect of your job?

A Helping people is the right answer to this question but the creativity aspect of my job is what gets me in the office early and keeps me there late. If a solution doesn't exist that we need to solve a problem, we invent it. If the vendor that builds our industrial tools doesn't have exactly the right product, we work with them and provide guidance on how to make it better. If we're not entirely sure how to solve a problem, we work with universities and research the right answer.

Q How do you/your company make a positive impact on society/our community?

A Not only has FedEx done more for the city of Memphis than I can begin to imagine, but FedEx has also changed how all of industry operates. Need car parts from the other side of the planet tomorrow morning for a manufacturing line? FedEx can handle that. Need a whale delivered? Sure, no problem. University research and collaboration is another aspect that's really growing within FedEx at this time and I'm very proud to personally have a hand in developing young engineers by giving them real world problems to solve.

Q What's the most interesting thing you have been able to do in your professional career?

A I've been very fortunate to work on a lot of cool stuff. My first real job out of college was for a virtual reality hardware and software company. I worked on satellite systems for NASA, weapons systems for the NAVY, and installed virtual CAVE units around the world in locations like the Alexandria Library in Egypt, the University of Hong Kong, and more. With FedEx, I've been able to study a large industrial workforce and the ruggedized handheld tools that they use. I drive the future of handheld devices by sitting on advisory councils for some of the biggest companies in the world that make these industrial tools.



Q What makes you get up each morning excited about your profession?

A The joy of learning something new never gets old, and the good thing about experiencing new things is that I'll never run out of things to learn. The first thing I realized after I got my doctorate was how little I actually knew about the world. I'll never learn or experience everything, but my profession puts me in the position to learn as much as one person possibly can.

Q What advice would you share with K-12 students who are considering your profession?

A Most importantly, find a career based on activities you love. If you love what you do, the old saying is that you'll never work a day in your life. Money is only important to the point that you need to be able to support yourself but if you work at a job that you love and you get really good at that job, then I suspect money won't ever be an issue. You'll be incredibly good at what you do. Also, I'll share some advice that my dad gave me when I was considering dropping out of the engineering program to be a football coach. He wisely asked, "Son, if you get an engineering degree, do you think you could still be a football coach? If you get a coaching degree and change your mind, could you go get an engineering job?" The point of his lesson was that if you have two loves, pursue the difficult dream no matter how hard it seems because that backup plan will always be available... not the other way around.