Daniella Morris was a mechanical engineering student at The Ohio State University (OSU) when she became attracted to welding. Interning with the automaker Honda in her sophomore year, she met an influential female welding engineer who presented her with a project that included a heavy dose of welding. The project, which examined nondestructive examination of weld nuts to high-strength steel, motivated Morris to consider a career in welding engineering.

“After my internship experience, I later met multiple welding engineering students and faculty and explored the curriculum and knew it was the right fit,” she explained. “Our curriculum includes multiple labs to learn how to perform different types of welds using a wide range of equipment used in industry. Aside from the hands-on experience, our program is extremely diverse, including courses in statics and mechanics, materials science, metallurgical, electrical, thermodynamics, processes, and all our higher-level math and science courses.”

Morris has also landed internships working with SpaceX, an aerospace manufacturer and space transportation services company, and EWI, a provider of engineering services. At SpaceX, she evaluated welds on high-strength materials and analyzed the effect of post-weld cleaning for the National Aeronautics and Space Administration’s (NASA’s) specifications. The opportunity also exposed her to a variety of processes, including additive manufacturing, and electron beam, gas tungsten arc, and friction stir welding. At EWI, she worked on “a research development project that examined the effects of insert skeleton with different process parameters” into additive manufactured parts, mainly using Inconel® 625.

“I am very thankful I have had the opportunity to intern with these companies. Each internship has given me experience in different industries, and I have gotten to work on a wide variety of engineering projects,” she said.

Between school work and internships, Morris is also a member of the American Welding Society (AWS) and the Society of Women Engineers. Her hard work secured her a spot at the OSU booth at FABTECH, where she was exposed to different welding engineering applications, as well as meet OSU welding engineering alumni and AWS Committee members.

Morris also served as vice president of the OSU Rover Team, which competed against engineering students from other schools around the world.

“I got to drive the rover, meet NASA engineers, and tour the facilities,” she said.

Morris’s efforts have been recognized with an AWS Elizabeth Fray Women in Welding and Welding Arts Scholarship, which has allowed her to concentrate on her studies, rather than worry about how to pay for school expenses.

“Before I received an AWS scholarship, I was working two part-time jobs while taking full-time classes. I am glad that I had to work hard to manage all this, because I do believe it has helped mold the work ethic I have today, but with this scholarship I am able to work as an undergraduate research assistant between classes and spend more time studying these complex materials,” she explained. “I am getting into classes that are crucial to understanding how to do my job well as an engineer, and having that extra time has made all the difference for me to focus less on finances and more on my future.”

Imbued with a passion for space exploration since middle school, Morris unequivocally knows what she wants to do after graduation.

“I have had the opportunity of interning with SpaceX and it feels like a dream being able to work on projects that contribute toward furthering space exploration to put humans on Mars,” she said. “I hope to continue working in the space or aerospace industry and to help contribute to the future of materials and joining innovation.”
District 8 Member Profile

The first “official welder” in the family, Jacob Humphrey began experimenting with the craft at the age of 14. With the help of his grandfather, he would repair farm equipment using a shielded metal arc welding machine. He also got to weld with his uncle, who sometimes performed welding at his construction job.

“When I wanted to weld, it would give me and my uncle, or me and my grandfather, time to spend together and learn a little bit of welding,” he said.

Looking back, Humphrey says what attracted him to the craft was simple — the flames and the power to create. “I liked playing with the fire, and that I got to build things,” he said.

However, he didn’t get to hone his craft until he got to high school. In the ninth grade, Humphrey began taking night classes, where he got to practice a bit of welding within an educational setting. After school, he’d visit the shop to practice some more. In his junior year, he took his first formal welding class at Brewer High School in Somerville, Ala. The experience encouraged him to pursue welding as a career.

“From then on, it’s been all I’ve ever wanted to do,” he affirmed. “It’s been something to learn about, and there’s always something to learn with welding. You’re never going to stop learning in this trade.”

As a high schooler, Humphrey also started to compete at SkillsUSA, winning various competitions at the local, district, state, and national levels, which earned him a spot in the top six.

“It’s pretty humbling. It gave me a sense that I’ve applied myself to learn all of this and I’ve taken in all of this information, and I get to use what I’m learning,” he said. “At the same time, you’re learning more at Weld Trials than you would, per say, anywhere else.”

Humphrey’s success at SkillsUSA came as a result of his hard work and dedication to training. He describes practicing 12 to 14 hours a day, five or six times a week, to remain in the competition.

“You gotta really be on top of not getting stressed with the projects you’re working on, and then allowing enough time to complete those projects,” he explained.

He also stressed the importance of listening to the advice of others, regardless of age or experience, to grow as a welder. “Always be accepting information from anybody, whether they’re older than you or younger than you. Even if somebody younger than you doesn’t have as much experience, they may know something you don’t know and they may know a different technique that may work for you now. So always be willing to learn things,” he said.

Despite the long hours and years of training, Humphrey enjoyed his experience with SkillsUSA, motivated by the thrill of challenging himself. Looking back, he encourages anyone who is given the chance to compete at SkillsUSA to take it.

“If you get the opportunity to go through the SkillsUSA competitions, just pursue that because it’s opened up a lot of doors for me that wouldn’t have opened if I had not competed,” he affirmed.

Humphrey also highlighted the support he received from the American Welding Society (AWS) during competitions as a “really big plus.” He has received the AWS Welder Training Scholarship and was sent to the 2018 FABTECH expo, where he got to network with industry leaders as well as upcoming welders.

“I got to meet a lot of people who have a lot of knowledge in this field, and I have learned a lot from those people,” he said. “It gave me some connections for future job opportunities.”

Today, Humphrey is in his second year at Wallace State Community College, where he is working toward an associate’s degree in applied science. He credits the program’s main instructors Roger Landers, Jim Thompson, and Jeremy Johnson.

“There’s a lot of technology in this program and a lot of things to learn with three great instructors who have provided me with a lot of information,” he said.

Slated to graduate this summer, Humphrey hopes to use welding to see more of the world. He may also pursue higher education in the future.

“If I wouldn’t mind traveling and welding, but I may not weld for all my life,” he explained. “I wouldn’t mind getting into the metallurgy engineering side, where you’re learning the actual functions of the materials.”

AWS Hardship Assistance for Members Affected by the 2019 Partial Government Shutdown

As many federal employees continue to be affected by the 2019 partial government shutdown, we want you to know that AWS is here to help. Our Hardship Program offers relief options for members and customers impacted by the shutdown. To learn more about available assistance, contact the AWS Membership Department at (800) 446-9353, ext. 480, or membership@aws.org, and an AWS staff member will discuss details and assistance.