

# WELDING *Journal*

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# Welcome Back, FABTECH

PUBLISHED BY THE AMERICAN WELDING SOCIETY TO ADVANCE THE SCIENCE, TECHNOLOGY, AND APPLICATION OF WELDING AND ALLIED JOINING AND CUTTING PROCESSES WORLDWIDE, INCLUDING BRAZING, SOLDERING, AND THERMAL SPRAYING

## AWS Member Profile



Mackenzi Johnston

Mackenzi Johnston has been working with her hands ever since she could remember. As a child, she enjoyed helping her parents make repairs on their motorcycles and cars. These pleasant childhood experiences imbued her with a love for the trades.

"I was lucky to grow up in a family that encouraged me to work with my hands and learn the basics of tools and equipment at a young age," she recalled. "From that point on, I knew I wanted to pursue a career that would give me the opportunity to work with my hands to make and fix things."

As Johnston grew older, her interests diversified to include calculus and physics, leading her to consider a career path that combines both.

"I read books on outer space, string theory, and the laws that govern our physical world," she said. "This is what got me interested in engineering and the application of physics and math."

Following her passion, Johnston joined Carleton University in Ontario, Canada, as an aerospace engineering student. After two years in the program, she discovered it wasn't right for her.

"I realized it was not a good fit for me. After leaving those studies and facing a challenge to find a new path for myself, I landed on welding," she explained.

With the encouragement of her family, she enrolled in an oxyacetylene

welding class at the Southern Alberta Institute of Technology in Calgary, Canada, where she fell in love with welding.

"When I saw, for myself, that the simple mix of gas and oxygen creates enough heat to melt actual steel, I was hooked," she recollected. "As I started to develop my skills with pool control and heat input, I realized that it all felt natural to me. I gained a sense of confidence I had never felt before."

However, Johnston had not forgotten her previous love — engineering.

"With this newfound passion, I asked myself, 'Can I mix these fields?' That is the moment I stumbled across welding engineering as a career," she said. "I thought, 'Yep, this is it. This is what I want to do.'"

In 2019, Johnston enrolled as a welding engineering student at the University of Alberta (U of A) in Edmonton, Canada. She also joined the school's Canadian Centre for Welding and Joining (CCWJ), where she is currently involved in welding research focusing on hydrogen testing. In addition to helping her realize her passion for welding research, the center also unveiled her penchant for teaching. With the help of Patricio Mendez, a professor at U of A, Johnston created and facilitated welding sessions at CCWJ to teach women from the university how to weld.

"I had the privilege to witness the development of these women's confidence in their technical abilities," she said. "I watched them feel empowered and excited about their field of study."

Creating a space where women are encouraged to learn about science, technology, engineering, and mathematics (STEM), as well as welding, is important for Johnston. As a female in a male-dominated academic path, she is no stranger to some of the difficulties women welders and engineers face.

"To be a female in this industry/academic space, you have to be able to advocate for yourself, your learning style, and your goals while simultaneously protecting your well-being and passion for the field," she admitted.

To inspire women to join the trades, Johnston and her business partner, Jolene Borrelli, are in the midst of launching The Red Bench

([theredbench.ca](http://theredbench.ca)), a workshop for women in Alberta, Canada. The workshop will include tools and equipment so its members can work on projects and learn new skills.

"In Canada, nationally, around 5% of people in trades are women," she explained. "The Red Bench is our response to this statistic: increase this number for good by encouraging women to pursue skills in trades and technology, starting with welding and metalworking. The Red Bench gives women the space to do just that."

The workshop will also allow women with similar mindsets to meet and network.

"By building up this community of women, we will have better access to the mentors and role models who will serve to further encourage women to get out there and pursue welding and metalworking as a hobby or career," she affirmed.

Slated to graduate with a bachelor's degree in 2024, Johnston is hopeful she'll find a job that combines all her interests, which include welding research in hydrogen-assisted cold cracking, teaching, and getting women interested in STEM-related fields.

"I am going to see where these different passions take me through the remainder of my degree," she said. "Maybe one day I can mix all of these passions together into one career!"



Mackenzi Johnston performs a 1G root pass using gas metal arc welding.