# Instructor Encourages Women to Enter Welding

These days welding machines hum and sparks fly six days and five nights a week at the welding shop in Barlow Hall at Clackamas Community College, Oregon City, Oreg. Four years ago, the scene was far different. What is now a professionally equipped and run shop was then a forgotten roomful of broken welding machines.

The college is instructor Sue Caldera's vehicle for empowering students and arming them with the confidence and skills necessary to make welding a satisfying career. After the initial challenge of reviving a welding program that had been wiped out by budget cuts in the early 1990s, she set a goal of helping women enter the field.

Caldera doesn't sugarcoat the real world of welding for interested female students, but instead prepares them to deal with worst-case scenarios. She is firm in her outlook that women can succeed and be satisfied with a welding career. Many welding supervisors and shop owners readily admit women make great welders because of their patience and attention to detail; however, Caldera is also realistic about the challenges women face on the job.

Annie Clark has been an apprentice with the local Boilermakers Union for the past 1½ years and takes supplemental welding classes at Clackamas to speed up her certifications. She was initially attracted to the field by the high entry-level wages and generous pension, but she now really appreciates the work.

"It's such a broad trade, with such a wide variety of exposure to all tools, to all trades. You get to do a little bit of everything," said Clark. "And you really don't have to be an Amazon or linebacker to do this work. You just have to be absolutely willing to learn the trade and take initiative...then they'll start to take you seriously."

Caldera has aggressively pursued leads to find qualified students jobs in an economy in which manufacturers have been cautious to hire. Student Janelle Bello has a quiet but burning passion to learn every kind of welding and every aspect of metal fabrication. She was hired recently at Boydstun Metal Works in Portland as part of a planned 40- to 50-worker expansion. She certified at Clackamas in all positions with Dual-Shield wire, and Caldera said Bello's 4G was the best she'd ever seen. Bello feels prepared but knows there is a lot to learn.

The next step Caldera is working on to benefit her students is a one-year certificate and a two-year Associate of Applied Science in Welding Technology degree. She hopes to have the degree program in place by fall 2003. Right now, welding technology students can earn a certificate from the American Welding Society for completing the entry-level welder program and a certificate of completion from Clackamas for passing all the required classes. Caldera thinks an associate's degree will provide students with a well-rounded education and give them the edge they will need for promotions on the job.

**Fig. 1 — Clackamas Community College Instructor Sue Caldera honed her welding skills during the recent AWS Instructor's Institute. One of her goals as a teacher is to help women enter the welding field.**

The recent Women in Trades Fair held in Tualatin, Oreg., gave Caldera an opportunity to introduce girls ages 12 to 18 to the world of welding. Working alongside colleagues from the Mount Hood and Portland Community Colleges, Caldera gave hands-on workshops using shapes cut with a CNC plasma cutting machines to make plaques the girls then welded together. For her, projects like this are one of the highlights of her role in education. She thinks if she can reach young girls, they will be open to more potential in their careers and not be intimidated by nontraditional work.

Clackamas now has a student chapter of AWS and Caldera hopes to form a chapter of Ladies of the Arc, named after a video made by Connie Christopher, who teaches welding at Portland Community College. Its purpose would be to publicize opportunities for women in welding and support those in the field.

In Caldera's push to introduce more people to welding, two classes have proven very popular: Introduction to Welding, a hobbyist class offered on Saturdays, and one-day Yard Art Workshops. Although most of the people taking those classes won't decide to chuck out their pencils for a gas tungsten arc welding torch, the classes are just another way for Caldera to show people, particularly women, that welding is not so difficult after all.

"The idea was to get people into the shop who would otherwise never step foot into it," said Caldera. "It's been overwhelmingly successful as an instrument to introduce people, especially women, to welding. I've had kids as young 15 and people in their eighties try welding for the first time."

Even with the many demands on their time, instructors must keep up to date on their own education, she believes. Caldera, who was named Clackamas's instructor of the year for the Industrial Division, is a 12-year AWS member, an AWS Certified Welding Inspector, and an AWS Certified Welding Educator. She graduated from the Welding Technology program at Mount Hood Community College, Gresham, Oreg.

Caldera took an Oregon State University master trainer course to learn how to adapt to individual learning styles. She wants to make the most out of every class for her students, who have to leap from class into a competitive labor market.

Caldera, first vice chair of the Portland Section, was chosen to be her district's representative at the recent national Instructor's Institute held at AWS headquarters in Miami — Fig. 1. Caldera was thrilled about the opportunity. She appreciated the opportunity to use the latest welding equipment, upgrade her skills, and talk with her peers from across the United States.

Only a few years ago, the welding program at Clackamas was dead, the victim of budget cuts. Nowadays, Clackamas Community College is undergoing an expansion program. As part of that, the welding shop is moving to a new building with an additional 2000 sq ft of space. The budget includes $32,000 for new welding equipment. It is a well-deserved award for a program that has come back to life.◆