



Industrial Press, Inc. | Newsletter

Focus On: Women in Metal, Machining, & Manufacturing

A Word from Our Editor

Despite the government's and industry's efforts, the generation gap and gender gap seem to be getting even wider in the manufacturing industry from some of the reports I read on-line. Is our reliance on overseas manufacturing so deeply rooted that younger generations who grew up under the norm of "manufacturing is for overseas" cannot grasp the idea of working in the manufacturing field? While manufacturing went overseas, Web-based industry blossomed domestically, and a hip working environment and many job opportunities were created. Unfortunately, the dirty and labor-intensive old image of manufacturing has remained the same in people's minds, which is not an attractive image for the Internet generation, especially for girls. The fact is that the industry has changed quite a bit with new and disruptive technologies such as IoT and additive manufacturing, and now is the time to change the image of the manufacturing industry to attract a younger workforce and close the ever widening gender gap. What is more effective to get that job done than listening to the role models who are already active leaders in the industry? So, for the renewed edition of our newsletter, we decided to feature two of our female authors and a female leader at one of the largest companies in the metalworking industry, Sandvik, which is also our customer.



I hope you enjoy the newsletter. We look forward to hearing your comments. —*Taisuke Soda, Editorial Director*

From Concept to Creation: Talking with Author Kristi Richardson McCoy

Kristi Richardson McCoy is the author of the recently released *The Art of Sculpture Welding: From Concept to Creation*. A welding teacher for 17 years, McCoy uses her unique teaching methods to comprehensively cover all facets of the welding process through a range of fun and challenging projects.

Industrial Press: When and why did you decide to be a welder?

McCoy: I didn't exactly decide to become a welder. Welding basically chose me through chance. When I finished college with an Industrial Technology major, I was automatically qualified to teach all fields of technology, whether I was proficient in that area or not. Since my expertise was in the drafting and woodworking fields, I was literally shocked when my administrator put welding classes on my schedule three years into my teaching career. I was surprised for two reasons: I was female, and I had no real experience other than spending a semester in the welding shop during my student teaching. But, being the person I am, one who enjoys challenges, likes building things with her hands, and knows how to learn independently, I was game for a new learning experience. I hit the books first, then grabbed a stinger and started welding.



It didn't hurt that my husband happens to own and operate a welding business and is the best welder I know. When I had questions, he had answers, and things just fell into place. By the time I was in my fifth year of teaching, I was a pretty darn good welder—good enough that my husband started hiring me on the side to help him in his shop when he needed an extra hand. I haven't quit learning. Each year, I try to learn something new that I can pass on to my students.

Industrial Press: Have you found that success as a woman welding instructor poses particular challenges?

McCoy: When I am in the shop, I don't think of myself as male or female, just someone who loves to weld and who enjoys passing on what I know to others who are willing to learn. For the most part, over the years, I have been treated with the utmost respect by my colleagues, fellow administrators, and students. But things aren't always perfect.

In the past 17 years as a welding instructor, I have encountered a few instances of male chauvinism. That is always a challenging situation to deal with. But I've found that if I give a person time to get to know me, they generally learn to respect me for who I am.

Industrial Press: Have you observed major changes in the welding industry in your area? For instance, have you noted an increase in the involvement of women in welding? If not, what can be done to encourage them to work in this field?

McCoy: The only change that I have seen is an increased demand for more skilled workers of any age. If a person has the know-how, there are plenty of job opportunities, and statistics show that the demand is just going to keep growing.

Since I am female, you would think that I would have a higher percentage of females taking my welding classes, but that is just not the case. Less than 1 percent of my students are female. But that may change.

In our state of South Dakota, there is a huge push to encourage young men and women to enroll in in-state technical schools that train students to work in high-demand fields such as welding. A donation of \$25 million dollars was made by businessman Denny Sanford and the state matched those dollars to establish a scholarship fund to encourage the younger generation

to attend technical schools here. This fund will provide awards to as many as 300 students for the first five years and 100 for the last five years. The students awarded the scholarships will be required to work in-state for their first two years out of school, helping industry in South Dakota grow and reducing the shortage of workers in these fields.

Industrial Press: Are there opportunities for women to advance in your field?

McCoy: I suppose there are, but I haven't seen that much in my small town area. Other than a couple female Ag teachers, I am the only female welding teacher in the state and have been for all the years that I have been teaching. And since I have been in the welding field, I have only heard of a handful of women who work in the welding industry in my area.

I think that the industry is mostly male because it takes strength, stamina, and a type of person who can work in conditions that are many times smoky, dusty, greasy, and grimy—most females aren't raised to be in these unfavorable environments. I feel that most women just don't pursue a career in welding due to the nature of the job itself. But I don't feel that the opportunity isn't there.

Getting the education to become a welder would definitely be the easy part. But finding a job where you feel comfortable could be a challenge. Being female in such an overwhelmingly male-dominated field means that you have

to be very good at what you do and you have to work hard to earn the respect of your coworkers, who are mostly male. If you can do this, you can succeed in the welding field at any level.

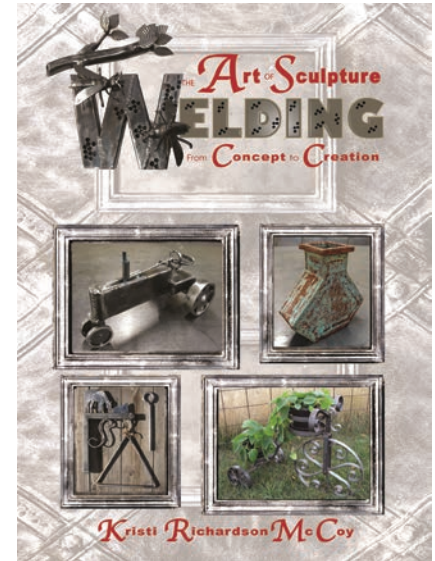
Industrial Press: Please tell us about writing your new book.

McCoy: When I started teaching welding, I taught like everyone else, asking students to weld joint after joint to prove they could master a particular welding method. With limited welders in my shop, it left many students standing around waiting for something to do. This caused classroom management issues that I didn't care to deal with.

I decided to get creative and design assignments that students would want to do. During construction, these assignments teach my students all facets of welding, and never once have I had a student complain about being bored.

The *Art of Sculpture Welding* is for anyone looking for a fun and affordable way to learn to weld and use the equipment typically found in the welding shop. The projects leave room for creativity and individuality. Even though the projects have been built hundreds of times, they are rarely exactly the same.

I can't tell you how privileged I feel to be given the opportunity to write this book so that I can share my unique teaching style with others. I cannot be more proud to share what I do with the world around me.



The Art of Sculpture Welding: From Concept to Creation

By Kristi Richardson McCoy
Published: Spring 2015
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Pushing Global Boundaries: A Conversation with Veronica Messersmith, Vice President of Sales for Sandvik Coromant

Veronica Messersmith is Vice President of Sales for Sandvik Coromant, a global leader in supplying tools and services to the metal cutting industry. Messersmith explains her fascination with the field she chose over 20 years ago: “I love pushing boundaries, and this industry continues to do exactly that on a daily basis.” She recalls a time when there were far fewer women working in manufacturing and is excited that more women are now choosing careers in and excelling in this industry.



Industrial Press: How did you decide to pursue a career in manufacturing?

Messersmith: A friend of the family suggested I look at the Industrial Engineering program at Texas A&M. It was a growing discipline that focused on process improvements and efficiency, which is perfect for my personality. After my campus visit, I spoke to Susan Dio—a fellow 2015 STEP Award honoree—about being a woman in engineering. She encouraged me to pursue this career.

Industrial Press: What were major factors in your decision?

Messersmith: The confirmation that manufacturing was an area where I could be challenged and make a difference, while creating a stable, prosperous career for myself.

Industrial Press: Besides Susan Dio, who encouraged and supported you in your decision to get an engineering degree?

Messersmith: My parents. Both worked hard in their jobs to provide the best for my brother and me. I wanted to be sure their efforts never went unnoticed or unappreciated—something that motivates me to this day. My parents still are my cheerleaders and continue to encourage me to excel at what I do.

Industrial Press: Can you highlight one thing that needs to be improved for more young girls to consider a career in manufacturing?

Messersmith: I strongly believe in mentorship. Young girls need the awareness of opportunities in manufacturing, but even more, they need a mentor to help them overcome some of the obstacles they will eventually encounter.

The perception of manufacturing is so unappealing to many girls that they do not consider it as a career. But once they are exposed to the opportunities, challenges, and creativity that advanced manufacturing is all about today, most see our industry in a different light. A mentor can help provide this exposure in a personal way and also provide guidance during a young woman's career. My mentors have helped me gain the confidence I have needed to feel "equal" to the more experienced men in the room.

Industrial Press: When people ask you why you still love working in this industry, what do you usually say?

Messersmith: In my current position, I am fortunate to be exposed to a multitude of industries and companies, making thousands of vastly different products. To this day, I am amazed to see how things are created and made.

Our customers are accomplishing truly amazing things on a daily basis. I am proud to be a part of that.

For information about Sandvik Coromant's global products and services, visit www.sandvik.coromant.com.



For information on the Sandvik Group, see www.sandvik.com.

A Career in Commercial Steel Estimating: Speaking with Kerri Olsen, Author and Industry Expert

Kerri Olsen is the author of the best-selling *Commercial Steel Estimating: A Comprehensive Guide to Mastering the Basics*, a definitive compilation of information on steel estimating, including invaluable trade secrets. Her book is ideal for anyone interested in making a career in commercial steel estimating, as well as for experienced professionals who need to know about steel.

Industrial Press: When and why did you decide to be a commercial steel estimator? What has been your career path in the steel manufacturing industry?

Olsen: I started in the steel industry in 1979. I needed a job that would provide a living wage without any specific education requirement; the construction industry facilitated that need. During my early years, the job of estimating also included duties for purchasing, steel detailing, project management, production control, quality control, shipping, and customer care.

As my career matured, I became an independent estimator, project manager, and steel detailer for a select group of customers. I have also been operations manager for a couple of large fabricators. My work with writing and teaching continues to be limited to the steel fabrication and the steel detailing industry.

Industrial Press: Both the gender gap and the generation gap have been discussed in relation to manufacturing industries. What do you think of efforts of the government and industry to close these gaps in the workforce? What still needs to be done?

Olsen: The government does more harm than good with minority and woman-owned requirements. DBE (Disadvantaged Business Enterprise) and WBE (Women's Business Enterprise) mandate limited competition, ignore expertise, and drive up prices. Often, unqualified people are put in jobs that they do not belong in due to compliance efforts. Contractors always have figured out a work-around to comply with mandates, and we all pay the price for that.

Women in this field have to work hard to prove themselves. I do not see anything else that may be "done" about that.

Industrial Press: Do you feel that the steel industry is still dominated by men in a certain age bracket? What changes have you observed?



Olsen: I do see an uptick with business owners and industry tradespeople being women. I still see a serious gap with opportunity and salary.

Industrial Press: *Have you found that success as a woman in the industry poses particular challenges? Are there opportunities for women to advance in management?*

Olsen: The best way for women to advance in management is to start their own company.

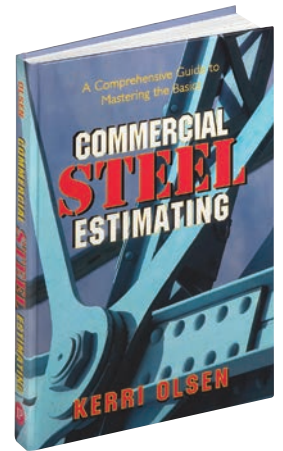
Industrial Press: *What would you say to members of the younger generation, especially female students, who are considering entering the industry and wondering about potential job opportunities?*

Olsen: I am not walking in the shoes of the next generation, and I only realize my own truth. What has worked for me and may be useful to others is the following:

- Work hard and learn all you can.
- Move on when you stop growing.
- We are the masters of our own destiny. Make it happen the way you want.
- To stay in this industry and make something of yourself, you have to have a high level of curiosity, determination, and intestinal fortitude. There is no other way.

Industrial Press: *Lastly, please take this opportunity to share your thoughts on your book.*

Olsen: *Commercial Steel Estimating* is a manual that provides the foundation for anyone needing to work in this industry. It is a beginner's guide and contains all the information needed for a person to be able to become a successful estimator. It is also a great guide for related tradespeople, contractors, and even designers, providing specific steel knowledge that is often unavailable otherwise.



Commercial Steel Estimating

By Kerri Olsen

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Industrial Info

By Laura Brengelman,
Managing Editor

In 2014, the U.S. Bureau of Labor Statistics reported that 1,625,000 workers were employed directly in “primary metals and fabricated metals products manufacturing.” Of those, only 16.5 percent were identified as women. www.bls.gov

The Worldsteel Association reports that the steel industry directly employs more than 2 million people worldwide and is a source of employment for a further 2 million contractors and 4 million in supporting industries. According to this association, the proportion of women in the workforce tends to be low, between 6 and 21 percent; however, it adds that “the trend is improving.” www.worldsteel.org

The number of women in metalworking machinery industries reached the lowest point in the last decade during 2010, but that number is rebounding to pre-recession levels. www.quandl.com

In his January 2015 article, “Women of Steel,” Joseph S. Pete writes, “The number of women working in the steel industry has been growing. ArcelorMittal, the largest steelmaker in the world... has been actively trying to interest more women in the field, recruiting more female engineers, and grooming women for advancement.” The company's efforts include sending representatives to U.S. middle and high schools and universities to encourage students' interest in “science, technology, math, as well as careers in the steel industry.” www.nwintimes.com



With a rise in employment opportunities, educational programs in metalworking are offered at vocational and technical colleges across America. A few, such as the program at El Camino College in California, are specifically geared to women. The college's Welding CalWomenTech FAQs discusses its program, potential jobs and salary estimates, industry contacts, and women's occupational outlook in welding. Women who graduate from the program receive a certificate and A.S. degree in welding. Participation by female students seeking skills and certification in such programs is on the rise. womentechworld.org

In April, Mary Keefe, died at her home in Connecticut at age 91. When she was 19, she modeled for Norman Rockwell and is featured in his famous painting of a World War II icon known as “Rosie the Riveter.” In a day when women working in metalworking, in any capacity, was far rarer than it is today, this image, and others fashioned after it, helped inspire women to pitch in and take on new jobs—in welding, machining, and other manufacturing industries—previously considered solely for men. The image was first featured on the cover of the Memorial Day 1943 issue of *The Saturday Evening Post*. The painting currently resides in the Crystal Bridges Museum of American Art in Arkansas. (Image: © Norman Rockwell 1943 SEPS; courtesy of The Saturday Evening Post Society © 2014.) www.saturdayeveningpost.com