



Women in Steel:

Progress & Perspectives



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Where did your education and career start?

I received my B.S. in mining and mineral processing engineering from Hacettepe University in Ankara, Turkey, and my M.S. and Ph.D. in chemical engineering from Michigan Technological University in Houghton, Mich., USA.

I have held a variety of industry and research positions throughout my career. I worked as a quality engineer at the Lafarge Alpena Cement Plant in Alpena, Mich.; as a project engineer at U. S. Steel Research and Development in Munhall, Pa.; and as a project manager and research and development scientist at the Natural Resources Research Institute, Coleraine Laboratories, at the University of Minnesota Duluth.

What first sparked your interest in metallurgy and materials engineering, and what has kept you passionate about it over the years?

When I was a child, I often accompanied my parents to construction and industrial sites, including coal mines and power plants. I saw how towns, mines and plants changed over time. And I wanted to be a part of something bigger and understand how these industries worked and contributed to our future. Hence, that's where I started my education.

As I learned and understood, I wanted to learn more and be more involved.

Then, I got a glimpse of molten metal. I was hooked. Understanding how to make it and manipulate it became a mission and passion.

My passion for the industry continued and will continue to grow because every day I find something new to explore and learn.

Your career has taken you through industry, research and academia. How has each chapter shaped the leader you are today?

From a very young age, I knew that I wanted to teach. I have always been curious, and I liked solving puzzles. I found great joy in learning something and then helping someone else understand it. Looking back, I believe that every experience and every chapter of my career was designed for me to become the person and professional I am today and has ultimately brought me to where I belong.

I knew that to become the kind of teacher I wanted to be, I needed to develop a deep understanding of my field. Pursuing a Ph.D. gave me the opportunity. It also taught me not only how to learn and understand science and fundamental engineering principles, but also how to connect the knowledge to practical challenges and real-world solutions.

Throughout my Ph.D. studies, I had mentors who shared with me the importance of asking the questions that matter. Questions that challenge assumptions; help distinguish root causes; enable separating the underlying problems from their symptoms; identify relationships, patterns, causes and consequences; and recognize limitations and uncertainty. I wanted to build on this knowledge to be a good teacher, researcher, engineer and leader by working in industry and research and development.

My industry experience taught me the importance of effective project management and, more importantly, how

to move an idea from a problem to a practical solution. I learned how to clearly define a problem, establish a value proposition, build support and buy-in from management and teammates, make and communicate decisions, test and evaluate potential solutions, and recognize and communicate progress and success along the way.

Research taught me how to think. Industry taught me how to apply that thinking. Academia has allowed me to develop those abilities in others and rejoice in their success. I am very excited to share all that I learned with my students in metallurgical and materials engineering at Montana Tech. As a leader, I provide direction, but my priority is to create a space for my students to be able to contribute, explore their curiosity, learn and grow.

Receiving the AIST Foundation's Kent D. Peaslee Junior Faculty Award is a significant recognition. What did that honor mean to you personally, and how has it influenced your work or career since receiving it?

Receiving the AIST Foundation's Kent D. Peaslee Junior Faculty Award has been an incredible honor and a meaningful affirmation that my work as an early-career faculty member is moving in the right direction. It has also given me a sense that I have the support and trust of the industry as I continue to learn, grow and find my place as a faculty member. I am very grateful for that encouragement.

I tried to use the award as an opportunity to build a collaborative program that will bring a lasting impact on our students, research and industry connections.

Throughout the summer, I visited three plants and had valuable conversations with my hosts about how we can better align our curriculum and research with industry needs. We discussed ways to enhance courses such as Pyrometallurgy and High-Temperature Processing, Chemical Kinetics and Mass Transfer, and Physical Chemistry of Iron and Steelmaking, as well as opportunities to incorporate real-world industry challenges into teaching and research. These conversations have been very valuable because they have helped me better understand what our students need to learn and what problems our research can help address. They have also led to new research directions and student projects that I plan to pursue in the coming year. I hope to continue building those relationships, and I would welcome the opportunity to visit additional plants, learn from their teams and explore ways we can work together.

The award also enabled me to complete the development of our Iron and Steelmaking Laboratory. The laboratory was commenced through the generous donations from our industry partners. This laboratory creates a space where students can explore their curiosity, develop practical skills and apply their knowledge. The ribbon-cutting ceremony for the laboratory was held during the first Montana Tech Iron and Steelmaking

Days. The days were also made possible through the support of the award.

Montana Tech Iron and Steelmaking Days was created to bring students, faculty and industry partners together. It allows our students to showcase their work and research while interacting directly with industry professionals. Just as importantly, it allows us to show students that our industry is a supportive, technologically advanced, resilient and rewarding industry with exciting opportunities for their future. I would be delighted to have more of our industry partners join us in future events, whether through lectures, roundtable discussions, demonstrations, or our social hour. Your involvement makes these experiences much more meaningful for our students. The next Montana Tech Iron and Steelmaking Days are scheduled for 16–17 February 2027.

Ultimately, what made this award most meaningful to me was the opportunities it has created for students.

In addition to the site visits, laboratory development, and Montana Tech Iron and Steelmaking Days, the funding supported two senior design projects, supplemented an M.S. project, and helped us begin developing new research proposals.

My goal is to continue building on this foundation that this award helped me to establish, and grow a program where education, research, and industry are closely connected, where students can see the relevance of what they are learning, contribute to meaningful research, and recognize themselves as future contributors to the iron and steel industry.

This is just the beginning.

How do you encourage students to build confidence in an industry where they may not always see people who look like them?

When I need courage and confidence, I often remind myself of Maya Angelou's words: "Do the best you can until you know better. Then when you know better, do better."

I think that is a powerful way to approach engineering and our industry. Our education teaches us how to learn, but when young professionals enter the industry, they have to start doing. They have to take what they know, step into situations where they may not have all the answers, ask questions, make decisions, learn from the outcomes and try again. Confidence does not come from knowing everything. It comes from knowing that you can learn, adapt and figure things out.

I also recognize that this is easier said than done. It is difficult to take risks and let your work speak for itself when you do not feel supported or when you do not see people like yourself in the room. That is why I believe building confidence starts with creating a sense of belonging.

As an educator, I want my students to know that they belong in this industry before they ever enter it. I try to give them opportunities to experience what it means to

be an engineer, to solve real problems, work with others, communicate their ideas, make decisions, present their work, interact with industry and learn from things that do not go perfectly. Every one of those experiences gives them another piece of evidence that says they can do this.

I also encourage students to build their own network of people who will support and challenge them. Sometimes that person is a professor, sometimes an industry mentor, a colleague or another student. And sometimes, especially when you do not see many people who look like you in the industry, you have to be intentional about finding your people. I want my students to understand that asking for support is not a sign that they do not belong. It is one of the ways we grow.

I think confidence is moving forward even when they are uncertain. Young professionals need curiosity, a willingness to learn and to find people who can support them.

When they know better, I hope they have the confidence to do better — and to turn around and support someone else on their journey to find confidence.

What does it mean to you to be part of a growing community of women helping shape the future of the steel industry?

I carry the strength, support, kindness and encouragement of every woman who helped to shape the future of the iron and steel industry in my everyday actions. I am aware that I am standing on the legacy of these women who helped create opportunities for me, my daughters and the next generation.

I also carry the responsibility to pay it forward. I want to encourage young women to see themselves as engineers, researchers, and leaders in the iron and steel industry.

There is a tremendous strength in seeing each other; sharing experiences, mentoring, opening doors, celebrating one another's accomplishments, learning from one another and creating opportunities for those who are coming next.

I hope that when young women see my female colleagues and me, they can begin to envision themselves building successful and fulfilling careers in the iron and steel industry.

Do you have any professional development book recommendations that you'd like to share?

I recommend *Dare to Lead* by Brené Brown. There is a very good hub to support reading and learning from this book (<https://brenebrown.com/hubs/dare-to-lead/>).

When I first discovered *Dare to Lead*, one of the exercises that resonated with me most was identifying my core values from the list provided in the book. I have continued that practice every year, taking time to reflect on whether my values have changed and whether my actions continue to align with them. I take great pride in trying to lead and conduct myself in a way that is consistent with my values. For me, that alignment between what I believe and how I show up as a colleague, teacher, researcher, and mentor is an important part of authentic leadership. ♦

