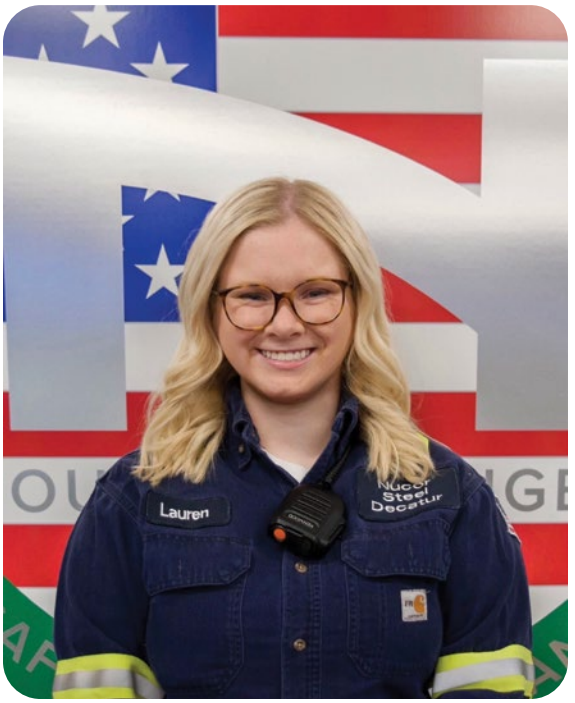
AIST Young Professionals



Lauren Miller

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What first interested you about learning more about the steel industry?

My first true exposure to the steel industry was through Nucor Steel Tuscaloosa while I completed research for my thesis "*Digital Twin Comparison of Continuous Casting Software to Current Steel Processes*." Although I previously had foundry experience in casting gray and ductile iron, brass and aluminum, I was immediately captivated by the engineering and logistical differences that a continuous process entailed.

Describe the coursework and degrees that you have obtained. Did you participate in any of AIST's programs or attend AIST events as a student?

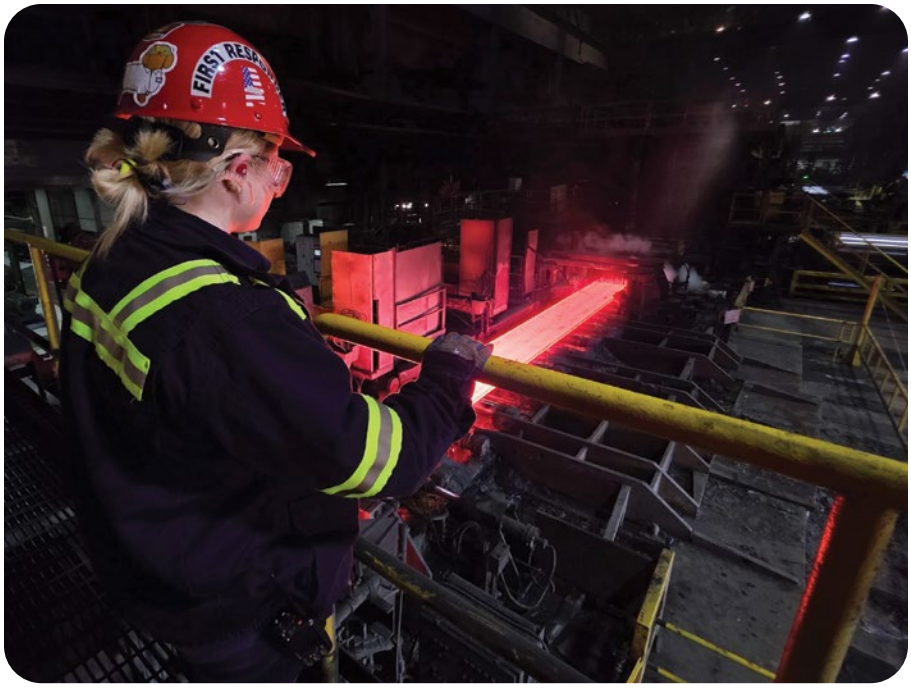
I received both my bachelor and master of science degrees in metallurgical engineering from The University of Alabama, Tuscaloosa (Roll Tide!) in 2023 and 2024, respectively. While in school, my three most relevant courses consisted of mechanical behavior of materials, ferrous metallurgy, and metallurgy of welding. Additionally, I became NovaFlow&Solid certified in 2022 and completed MAGMASOFT Continuous Casting (CC) Level I training in 2023. While I did not participate in AIST programs as a student, I enjoy volunteering for events that connect me to current students who may be interested in the industry!

Have any AIST programs assisted with your career advancement?

With the encouragement and support of April Pitts-Baggett, one of my thesis mentors turned coworker, I was invited to present my thesis at the AIST Southwest Member Chapter meeting in San Antonio, Texas, in November 2024. Not only was I able to present on a technical subject to industry peers, but I also had the opportunity to network with subject matter experts and improve upon my public speaking abilities. Since then, I have been invited to speak at future AIST events and look forward to expanding my network further earlier in my career than I could have imagined. Additionally, the Pipe & Tube Technology Committee (PTTC) has been invaluable to my career development since joining within the past year. After becoming the Young Professional chair of the PTTC in May 2025, I have had the opportunity to tour facilities halfway across the country, learn from industry experts on how they found success within the industry, and gain a deepened appreciation of how my contributions as a metallurgist affect the critical nature of pipe and tubing applications. Naturally, this role allows me to work with the Young Professional (YP) group where I get to speak to students interested in steelmaking, moderate events like the YP and Board of Directors Virtual Mentor Mixer, and serve as a resource for new young professionals as they discover their passions.

As a young professional, what have been the most valuable benefits of your involvement with AIST?

As the first in my family to enter the steel industry, I wanted to make a name for myself, and through the wide range of resources and opportunities AIST provides, I have been able to do just that. Attending conferences like AISTech has given me valuable insight into both the engineering and business aspects of steelmaking, helping me understand how my technical contributions fit into the industry as a whole. AIST has also allowed me to connect with steelmaking professionals both within and outside of Nucor. Through these relationships, I've learned from the collective expertise of others and built a network that continues to support my professional and personal growth. Finally, I value the freedom AIST provides



to explore new subjects that interest me. Whether it's learning about emerging technologies, business practices or leadership strategies, AIST offers the tools and community that make it possible to keep learning and growing as a metallurgist and young professional.

Have you had any mentors that have assisted with your career development so far? If so, how did you identify them as a mentor, and what impact have they made thus far?

The mentorship of my thesis advisor, Charles Monroe, gave me the confidence to push the boundaries of my education and personal growth as an academic, engineer, mentor, and young professional. As a sophomore, I was accepted into his senior/graduate-level high-pressure die casting course, and he always took the time to guide me through resources, explain challenging concepts and make me feel that I truly belonged among my peers. A year later, when I expressed interest in pursuing a master's degree within his casting research group, I was met with nothing but support and excitement for future collaborative projects. Monroe leads by example; willing to learn alongside his students and approach every problem with a positive yet realistic mindset. I deeply admire these qualities and aspire to carry them with me as I advance in the steel industry. It is remarkable how something as small as being accepted into a course shaped my career today as a metallurgist. I would be remiss to not also mention two of my coworkers and mentors at Nucor Decatur: Hannah Sewell and Frank Baumgardner. Hannah and I joined the Met group within six months of each other, and although she is a few years older than me, she has consistently stood by my side, encouraged my aspirations, and pushed me to reach beyond what I thought was attainable as a metallurgist, first responder, and woman in steel. Frank has been a mentor to me both within Nucor and AIST. His decades of experience in the steel industry have allowed me to see daily operations from a broader perspective and expand my understanding beyond my current knowledge. He was also the one who encouraged me to attend the PTTC meeting at AISTech 2025, an invitation for which I am deeply grateful.

What advice do you have for students who are curious about pursuing something related to the steel industry?

In order to grow, I had to learn how to feel capable of doing what is uncomfortable. This does not mean to expect perfection the first time, but to have the confidence to keep pursuing your end goal until you are satisfied with the outcome. Joining groups within AIST only makes these opportunities more readily available and accessible to develop you as a well-rounded coworker, technical expert and individual.

What do you find unique and interesting about the steel industry? What do you enjoy the most about it?

I think when it comes to steelmaking, we are unique in that conceptually, melting, casting, processing and treatment of steel have been overall the same throughout history; we have just evolved the process into what it is today. From the creation of wootz steel in Asia around 300 B.C. to the origins of the blast furnace in the 18th century, and now electric arc furnace technology, our industry has continuously evolved. Today, with the utilization of new tools like AI and a shift toward producing green steel, we strive to be more efficient, deliver the highest quality products, and most importantly, enhance safety for steel producers and consumers. ✦