

Grant Recipient Report

Steel Professor Grant

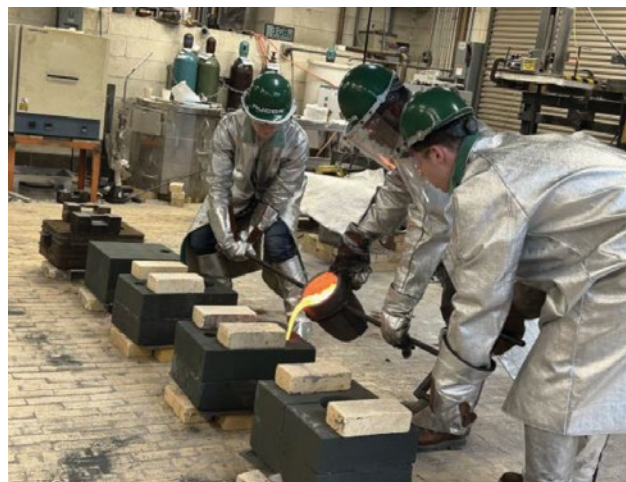
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The continuing goals of this AIST Steel Professor project are to increase the participation of talented young professionals in the steel industry. This will be accomplished by increasing the level of exposure to technological opportunities in steel technology through a series of workshops, networking opportunities, exposure to research, tours of steelmaking facilities and community outreach.

The AIST Steel Professor Grant was leveraged to support a number of research and educational activities that included travel to professional society meetings, technical conferences, invited lectures, dinners, tours of foundries and steel mills, outreach events for high school and university students, and other educational opportunities. This academic year, we leveraged our connections with the newly formed Kummer STEM Center to bring more than 10 different steel manufacturing and metalcasting workshop demonstrations and training programs for more than 400 high school and middle school students from schools from around the U.S. These included steel pours for various events such as the Annual Expanding Your Horizons for hundreds of middle school girls and STEM Day Fair (1,200+ students) to celebrate National STEM Day. The goal was to build integral and inspirational learning experiences for the K-12 community. Engaging these students with possibilities of technical careers in steel manufacturing could very well plant a STEM “seed” early that may not have been sown otherwise. The S&T STEM Day Fair featured metalcasting demonstrations and presentations on technological research and careers in the steel industry. More than 120 students attended!

This year I also sponsored two different tours of industrial facilities. In arranging these tours, I also helped to mentor the new Peaslee Steel Junior Faculty Award winner, Mario Buchely, by sharing the funds and responsibility for organizing this event. These tours included Nucor Steel Sedalia LLC, a rebar manufacturer in Sedalia, Mo., and a tour of Caterpillar’s Technical Center in Peoria, Ill. Both of these events were sponsored in partnership with the AIST funds from the AIST Steel Professorship and Dr. Buchely’s AIST funds to sponsor meals and travel for more than 60 individuals.

Outreach activities also include our many summer engineering camps and STEM demonstrations for K-12 students. I continue to incorporate as much steel melting, casting, and testing into these activities as possible. This continues to be an enormous success and has led to the



establishment of student mentors within our American Foundry Society and Material Advantage groups.

Students of all ages from a local homeschool organization participated in a lost foam casting opportunity in the Wolf Foundry Lab. Missouri S&T students from the American Foundry Society and the Blacksmithing Club participated in a cupola melt at the St. James Old Ironworks Festival. 2023 marked the 44th year for the James Foundation to host the Old Iron Works Festival at Meramec Spring Park and featured over 25 crafters demonstrating crafts that were important to the way of life in the mid-1800s era. Meramec Ironworks was founded on that site in 1826 as the first commercial ironworks west of the Mississippi. The iron works closed in 1876. This is the first time liquid iron has been produced on that site since the iron works stopped casting iron in 1873. ♦