The Impact of AIST Foundation Grants: A LIFE-CHANGING EXPERIENCE

by Kurt Edwards and Lauren Veltre

The AIST Foundation strives to increase the number of engineering faculty with a vested interest in the iron and steel industry. To support this goal, the Foundation has established a variety of grant opportunities to assist with steel-focused curriculum development, fund steel research and help academia build a closer working relationship with steel industry professionals. By receiving AIST Foundation grants, university professors have been able to buy new equipment, bolster their lab capabilities, hire research teams and so much more. AIST Foundation grants have catapulted careers, transformed student lives, and provided immeasurable benefits for professors and students alike.

As the AIST Foundation grant applications open for the 2025–2026 academic year, AIST spoke to grant recipients to get their perspective on how the grants have impacted them, personally and professionally, and their students.

"It was a very rewarding experience to prepare for the grant application, but, at the same time, it just made me think 'What are some sustainable steel processing technologies that would really benefit the steel industry and that could really change the world?'" said Lawrence Cho, research assistant professor, Metallurgical and Materials Engineering, Colorado School of Mines, a recipient of the Sustainable Technologies for Steel Manufacturing Grant. "AIST provided opportunities to partner with industrial collaborators and to interact with students to educate them about the importance of sustainable processing and industry decarbonization."

Mario Buchely, Roberta and G. Robert Couch Assistant Professor, Missouri University of Science and Technology (Missouri S&T), echoed those feelings.

"I think for us (professors), especially young faculty, it's a good exercise to write proposals. Basically, the rest of our lives we are going to be writing proposals, submitting applications. This is a good starting opportunity." A Kent D. Peaslee Junior Faculty Award recipient, Buchely said the AIST Foundation grant application helps applicants develop a proposal on their own and understand the process of how to put information together.

John Moreland, senior research scientist, Purdue University Northwest, agreed.

"One of the nice things about when you put together an application or a proposal for this sort of thing, some of the things that may have been ideas in your head, now they get out onto the paper. It really helps to get some legs on the research, not just from resources to accomplish it, but also makes it a lot more clear how to make sure it's going to be a successful project."

Foundation grants are a versatile source of funding for recipients.

"Unlike many other grants, the AIST Foundation grant is fully discretionary, which means you have the flexibility to spend on things that other grants may not be able to cover. You don't have to spend as much time waiting for other people to approve your purchases," said JingJing Qing, assistant professor, Department of Manufacturing Engineering, Georgia Southern University and another Kent D. Peaslee Junior Faculty Award winner. "I've used

The Missouri University of Science and Technology Materials Science Department hosted high school students to participate in a steel-focused materials workshop with partners from Nucor.

Bartlett and the Robert V. Wolf Research and Educational Foundry hosted a steel pour for high school and middle school girls and their teachers during a STEM Diversity Night.

the funding to match the cost of buying several pieces of equipment in my research lab. We built a furnace for melting iron and steels and we also have a steel roll mill built by a senior design team, which is fantastic."

A number of grant recipients have spoken about how the impact of their grants went beyond professional goals. Moreland came from a computer science background and did not have any exposure to the steel industry when a colleague suggested getting involved with AIST and the AIST Foundation. He started attending AISTech regularly and doing projects with steel mills. Winning the Digital Technologies for Steel Manufacturing Grant helped with new applications, especially for his work in safety training.

"I get a lot of personal fulfillment out of it because it marries my research and my passion making stuff with computers, training and simulation with real-world applications. We're really hoping that that's going to make a big difference to potentially help people be safer, maybe even save some lives," Moreland said.

"It's a life-changing experience (to get the Kent D. Peaslee Junior Faculty Award)," said Monserrat López-Cornejo, assistant professor, Instituto Tecnológico de Morelia. "Now I have the opportunity to help my students to learn more about the steel industry, and also to be able to run research projects. I'm able to take more students to plant tours because I know what a difference it can be on a student who is learning about a process in the classroom but then she or he sees the furnace charging, and they say 'I want to be part of this.' You are changing a lot of lives."

"Getting this grant has led to tremendous changes at our university," said Qing. "New equipment, new courses, more students entering the industry." The funding helped Qing sponsor graduate and undergraduate students to work on projects that interest the steel industry. The preliminary testing results from those projects were used to pursue additional funding from other sources.

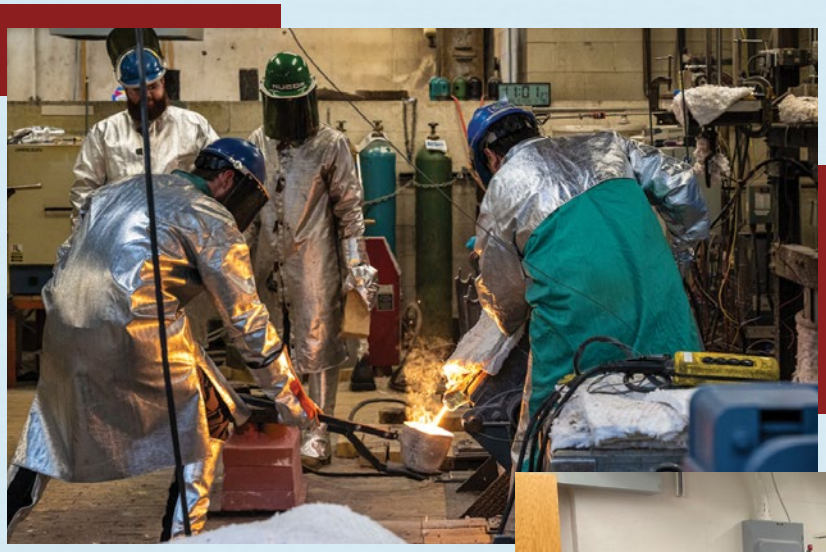
"In terms of 'is it really worth it?' Of course!" she said. "I don't think I would be in the position I am today without the Kent D. Peaslee Junior Faculty Award, and I mean that," said Laura N. Bartlett, the Robert V. Wolf Associate Professor in Metallurgical Engineering, Missouri S&T. She recalled the time she saw a steel pour as part of an undergraduate foundry metallurgy for engineers; after talking with Kent Peaslee and other professors, Bartlett switched her focus to metallurgical engineering, eventually being co-advised by Peaslee while in graduate school.

López-Cornejo (right) pictured with the Material Advantage Student Board at Instituto Tecnológico de Morelia, recognized as a Chapter of Excellence by the Material Advantage Student Program.

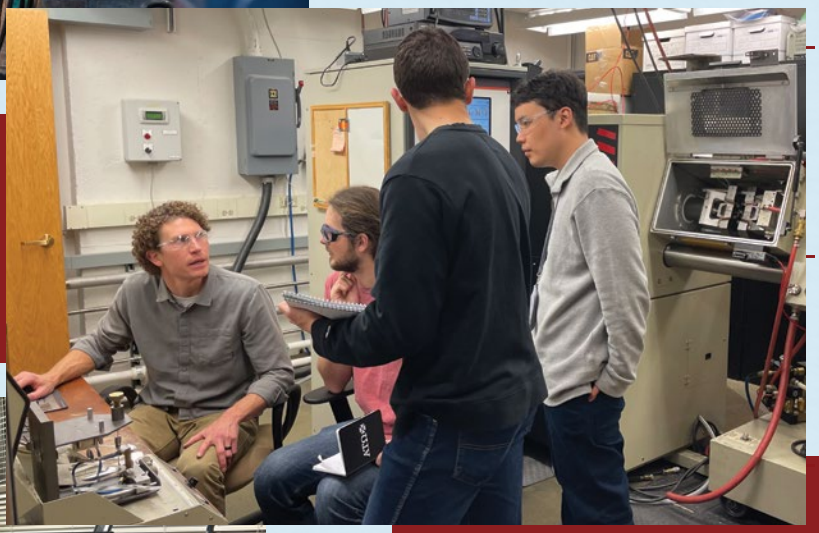
Bartlett then took a position at Texas State University. "Every college professor has to have a big research goal they have to hit, and sometimes it can be hard to break into the field because you have to have a network." Peaslee encouraged her to apply for the then-new Junior Faculty Award because she was starting a new program at Texas State.

Bartlett won the Junior Faculty Award the second time she applied, and that set things in motion for her. "Texas State was looking for me to do a certain level of research, and because of that award, I was really able to do well and eventually get tenure. I can link getting tenure back to the first major award that I won, and eventually getting promoted to associate professor when I got to Missouri S&T. The award allowed me to start a steel program that directly impacted a number of programs at Texas State. We were able to win awards related to papers we published. I was also able to use the award to apply for other grants and develop connections with the steel industry in Texas and eventually fund a rolling mill that we put in at Texas State."

The AIST Foundation currently offers six grants. To learn more about the individual grants and additional Foundation programs, please visit AISTFoundation.org or watch the Faculty Grant series of videos on the AIST YouTube channel. Applications for the 2025–2026 academic year are due on 30 June 2025. ✦



Metallurgical engineering students are working in the Robert V. Wolf Research Foundry at Missouri University of Science and Technology as part of a demonstration for high school students attending an engineering summer camp.



Cho with the research team at Colorado School of Mines performing induction heating simulations as part of his AIST Foundation Grant project. The team is analyzing results and optimizing parameters.

Qing of Georgia Southern University working on adjusting the digital camera of the optical microscope (acquired using AIST grants) used for ferrous metal microstructure examination.