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AISTech 2019: A Retrospective

This Year's Conference and Exposition Was One for the Record Books.

Here's Why.

By Sam Kusic

For as much as AISTech celebrates innovation, the event itself is organized around tradition: the Foundation golf outing is always on the first day, the industry plant tours are always on the last day, and at some point in between, someone will be calling home to say they won a pickup truck.

But the bit of foreshadowing, that was new this year.

It came a few days before, on a Thursday morning, in the caster maintenance area at United States Steel Corporation's Edgar Thomson plant, a facility that's been in operation since the 1870s. U. S. Steel's chief executive, David B. Burritt, dressed in a hard hat and safety orange, announced to the world that his company planned to build an endless cast-roll facility there at a cost of more than US\$1 billion.

It will be a sophisticated piece of equipment, he told the scores of dignitaries and employees who had assembled that day, and one that will be used make U. S. Steel's most advanced steel grades.

"Transformative," he called it.

"We're done playing defense. It's time to start playing offense," he declared.

The standing ovations were aplenty and the sentiment was upbeat. And it perfectly exemplified the mood that was to be found at AISTech 2019,



United States Steel Corporation president and chief executive David B. Burritt delivered the William T. Hogan, S.J. Lecture at AISTech 2019.



coffee meetings and the evening receptions. And it was in keynote speeches.

In delivering the William T. Hogan, S.J. Lecture during the President's Award Breakfast on Tuesday, 7 May, Burritt talked about the project and the benefits that would accrue because of it.

"The addition of a sophisticated new endless casting and rolling facility ... will enable significant, measurable improvements to our environmental performance, cost structure and ability to compete — and win — in the most attractive markets," he said to an audience of nearly 1,250.

the 16th installment of AIST's annual conference and exposition. Optimism was the word of the week, and it was reflected in the conversations in the presentation rooms and along the sidelines in the exposition hall. It was in the early morning

"Mon Valley Works was a natural fit for this investment, and we're proud to continue the legacy of innovation started there by Andrew Carnegie back in 1875," he added.

Although the announcement added momentum to AISTech, inertia was already in its favor, given the

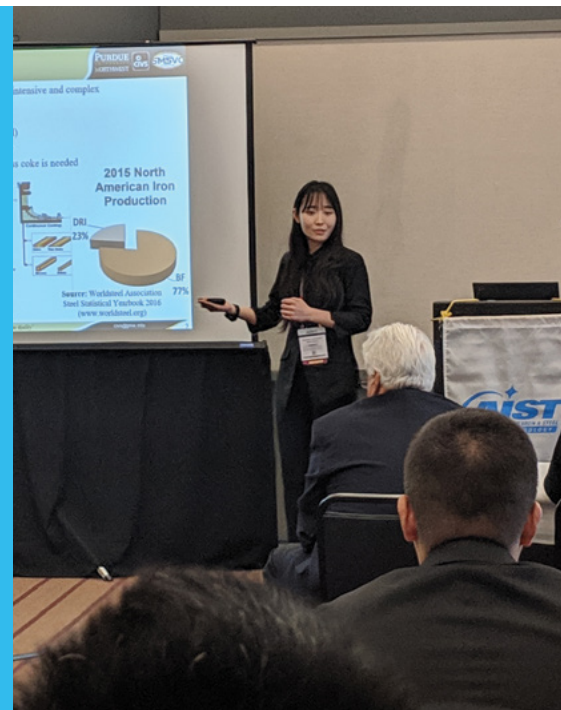
Student Representation

AISTech 2019 was not only beneficial to those working in the steel industry, but to those studying the steel industry.

More than 150 students from nine countries attended Steel's Premier Technology Event. A total of 28 students competed in undergraduate and graduate contests, with the top three scorers from each competition winning cash prizes totaling US\$6,000.

In addition, Penn State Behrend was awarded US\$500 for winning the AISTech 2019 Attendance Challenge for bringing the most students from one university. These awards were presented at the Steel to Students Reception where representatives from major steel companies discussed potential internship and employment options with students.

Providing these opportunities for students helps to solidify their interest and excitement for steel.



2018–2019 AIST president Jim Dudek said the U.S. industry has entered a golden era of growth and innovation.



number of restarts, upgrades and expansions that had been announced in the past year.

Before U. S. Steel, it was Nucor that had the latest, biggest announcement, unveiling in March a US\$1.35 billion plate mill. And before that, it was Steel Dynamics, which in November 2018 announced its plans for a US\$1.8 billion sheet mill. And even before that, it was SSAB Americas, which in October 2018 revealed its plans to make US\$100 million in improvements to its Mobile, Ala., plate mill.

“For the steel industry here in the U.S., we’ve entered a golden era of growth and innovation ... an era they will probably write about in the history books. Take a moment and think back over your own career. Have you ever before seen so much activity, so much investment — and so much excitement when compared to today?” asked 2018–2019 AIST

president Jim Dudek during the President’s Award Breakfast.

For many in the industry, the answer to that is likely no. Of course, it’s difficult to quantify sentiment, but





AISTech's vital statistics offer a gauge. Consider:

- The show drew 8,016 attendees, its third-best showing ever and only 300 or so shy of the record.
- There were 549 companies represented in the exhibit hall, a record.
- Those companies occupied 98,000 net square feet (9,100 net square meters) of exhibit hall space, also a record. They took up an area akin in size to the Eiffel Tower's base.
- Attendees had a chance to learn from any of the 468 technical presentations, one of its best lineups ever.

But even if excitement can't be precisely measured, it certainly can be felt. And it was palpable during the Town Hall Forum, which brought several of the industry's top executives together for a discussion about the state of the industry. Before an audience of nearly 2,000 people, they generally agreed it had been an extraordinary year.

"Our Nucor team set records in the areas of earnings, revenues and shipments in 2018. But not only did Nucor set those records, our customers also had record years, which is extremely important to us. In fact, if you look across the manufacturing sector as a whole, that sector saw its best profit margins in over 20 years," said Johnny Jacobs, vice president and general manager of Nucor Steel Kankakee Inc.

There was enthusiasm aplenty, too, among the scores of young professionals who came to learn, expand their professional networks and maybe have a little bit of fun, too. Among them was Nucor metallurgist Liz Hunter.

TOWN HALL FORUM

AISTech[®] 2019

GLOBAL EVENT SPONSORS

A photograph of a stage during the AISTech 2019 Town Hall Forum. Five panelists are seated in a row on a stage with a blue backdrop. From left to right, the panelists are: Vinkler, Scott Buckiso, Johnny Jacobs, and Carol Jackson. Each panelist has a nameplate in front of them. There are large floral arrangements on the stage. The backdrop features the AISTech logo and the text 'TOWN HALL FORUM' and 'GLOBAL EVENT SPONSORS' with the CISDI logo.

This was her third time at AISTech, and she was glad to have made the trip to Pittsburgh.

“Pittsburgh is such a great city. With so many suppliers’ offices around the area, the expo was huge. Pretty much anyone you could want to talk to on

the supplier side was there,” she said. “I always have such a great time at the conference and leave feeling invigorated with new ideas to take back to the job,” she said.



Young Professionals' Roundtable

Passion and energy filled the room at the sold-out Young Professionals' Roundtable at AISTech 2019. Twenty-five professionals under the age of 30 gathered on the afternoon of 5 May to discuss the obstacles they face in their rising steel industry careers and brainstorm on ways AIST could support their peers.

Participants were separated into four groups, giving them a chance to share honest feedback, success stories and new ideas. At the end of the discussion, a representative from each group presented their ideas, and attendees selected the key points they felt were most important. AIST received substantial feedback on how to provide more value to young professionals and continue to grow the program.



Often, she said, those ideas come from casual conversations with her peers.

“Investing time in the people you meet at AISTech pays back tenfold. I was able to discuss some troubleshooting recommendations with people in

similar roles as me by taking the time to make myself available to people I met.”

On this go-around, Hunter said she returned home with new insights gleaned from the cold rolling technical sessions. A presentation on variation in hot-rolled coils was especially helpful, she said.

Digital Transformation

AIST strives to become the epicenter for steel’s digital transformation by providing a variety of platforms to showcase and disseminate Industry 4.0 knowledge specific for steel manufacturing. It was no surprise, then, that this year’s technical program offered a deep variety of presentations on digital transformation concepts and technologies.

Covering the full spectrum of smart manufacturing — artificial intelligence, virtual reality, machine learning, big data, automation, robotics, sensors and the Internet of Things — industry experts discussed new digital tools that are helping to drive significant production efficiencies and yields and improve workplace and environmental safety. In addition, discussions kicked off concerning the next AIST Digital Transformation Forum for the Steel Industry, scheduled for March 2020 in Pittsburgh.



“Hearing someone else’s take on it and seeing the results of their experiments was enlightening. I also formed a few new relationships with peers in the industry that have proved very helpful.”

While some took away newfound knowledge, others took away newfound business, or at the least the potential for it.

“Our sales force walked away with knowing we have at least 10 projects coming to us for quotes in the near future,” said Scott Docherty, president of CID Associates Inc., a Pennsylvania-based manufacturer of mill pulpits, control rooms, control panels and liftable buildings.

He has been a longtime supporter of AISTech and predecessor events organized by the Association for Iron & Steel Engineers. The 2019 version, he said, was the best.

“If you have anything to do [with] the steel industry, you have to be at the AIST show,” he said. “Steel is the first building block for any thriving economy. Steel is what makes America great.”

He said that through this current wave of industry investment, the orders have been flowing in, and continue to do so.

“Business is the best it has been in my 42 years with CID. We are booked (at our buildings division) until December, both in the steel industry and the natural gas fields. We do not see a slow-up, although ... someone can turn off the faucet very fast,” he said.



Truck Giveaway

With AISTech 2019 drawing to a close, the excitement ramped up on the lower exhibit hall on the afternoon of 7 May, as 10 lucky finalists gathered to see who would be driving home in a brand-new 2019 Chevy™ Silverado.

A host of prizes awaited the contestants, but it was Todd Cooley of Nucor Steel Tuscaloosa Inc. who won the keys to the truck. Thank you to all of the participants and especially the 12 sponsoring companies of this year’s truck giveaway.





Women in Steel

AISTech 2019 was a landmark event for recognizing the important contributions of women in the steel industry, with more female award winners than any previous year. This year's President's Award Breakfast celebrated the first female winners of two of AIST's top honors. The 2019 AIST Steelmaker of the Year Award was bestowed on Commercial Metals Company chairman, chief executive officer and president Barbara Smith. In addition, AIST inducted its first female Distinguished Member and Fellow, Harriet Dutka of SANGRAF International. Also, Carolyn Hansson was the recipient of the Howe Memorial Lecture Award.

The positive momentum was also present at the inaugural Women in Steel Roundtable, held Sunday, 5 May, at the Westin Convention Center. The sold-out event brought together a diverse crowd of producers, suppliers, academics and young professionals to discuss AIST's efforts to encourage greater gender equity within the steel industry. Participants shared their experiences, victories and struggles regarding workplace issues, and brainstormed ways that AIST can take action to increase female representation within the association. The reception of the event was positive and AIST plans to hold another Women in Steel Roundtable at AISTech 2020 in Cleveland, Ohio.



He isn't the only industry supplier who has had an excellent year.

Carol Jackson, president and chief executive of refractories manufacturer HarbisonWalker International (HWI), said her company has seen a 15% increase in year-over-year demand for steelmaking refractories. And now the company is investing not only to expand capacity, but to implement more Industry 4.0 technologies throughout the organization.

She said that among its initiatives is an effort to deploy sensor technologies, such as infrared cameras, and computer models based on three-dimensional laser measurements, creating a digital twin of physical assets.

These technologies, along with "edge" software that can access data sets from various plant-level sources, are helping HWI develop tools to increase product campaign life and improve worker safety.

"HWI is working to transform data into process improvements and business intelligence that help steel industry customers work safer and smarter, with even better tools for knowledge sharing," Jackson said.

"Combining our digital transformation with HWI's proven products and the industry-leading expertise of our field services team, we're effectively positioned to deliver for our steel customers today and in the future as our industries evolve together."

As we move deeper into the 21st century, digital transformation has been increasingly at the top of mind of those in the industry. And it's no surprise then that Industry 4.0 discussions were prominent in the technical sessions.

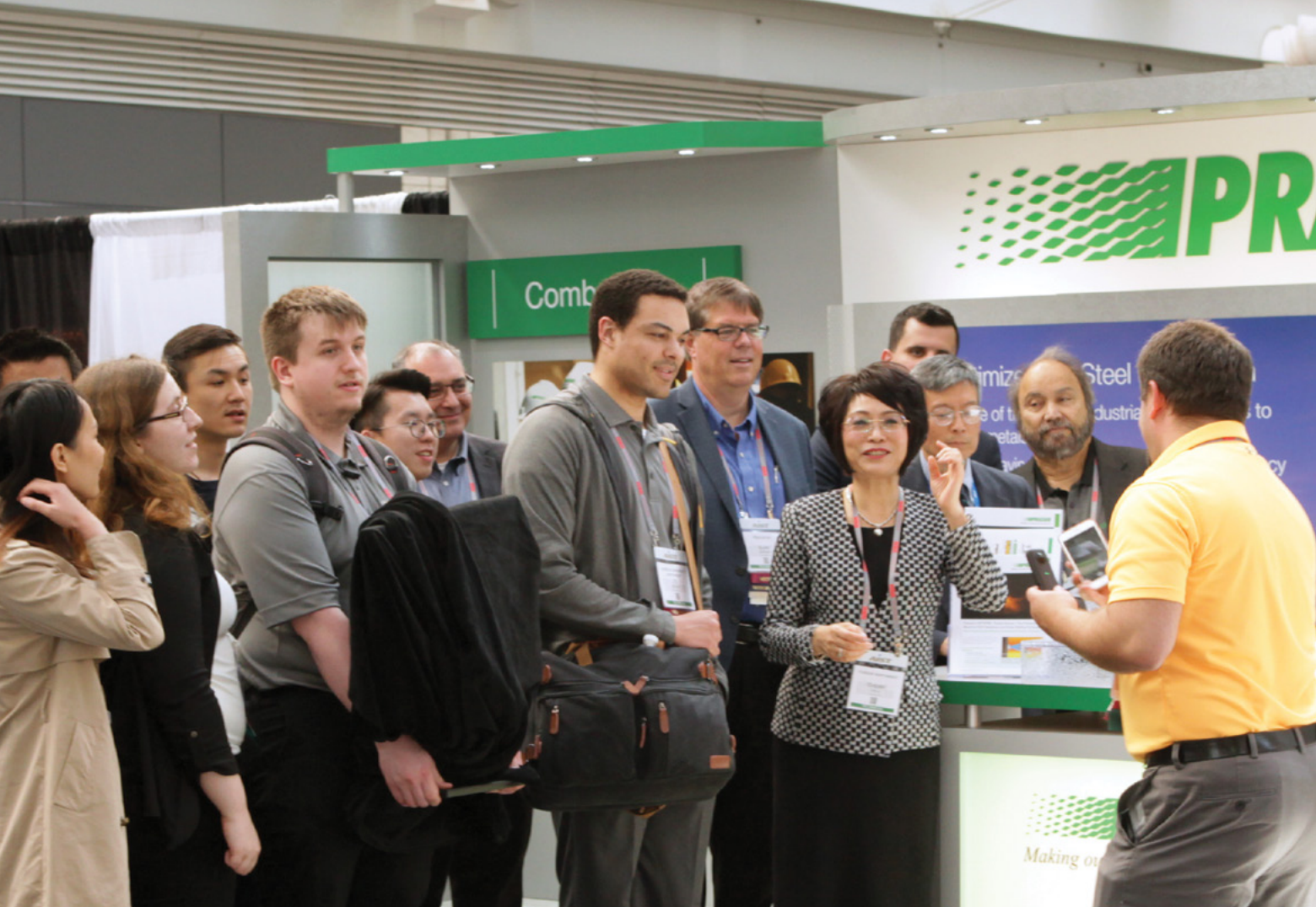


This year's lineup included dozens of presentations on everything from edge analytics to augmented reality.

"While we are an old industry, we are still striding forward. The amount of high-quality papers on artificial intelligence, robotics and Industry 4.0 really highlighted that," said Alex England, a sales project engineer at Heraeus Electro-Nite Co. LLC.

England also is one of the industry's young professionals and questions why more of his peers aren't interested in steel careers, especially considering the degree to which the industry consists of high-tech manufacturing.





It's a topic he and other explored during the Young Professionals' Roundtable.

"The general perception of the young professionals is that we aren't doing a good enough job of improving the perception of the industry, especially to college STEM graduates," he said.

Efforts such as the roundtable are important, he said, because the industry absolutely must be thinking about the recruitment issue.

"My belief is the workforce is changing and the steel industry must respond to that so we can continue to attract the best and brightest young professionals."

In the meantime, AIST has already begun work to attract professionals from around the world to the next AISTech, which takes place in Cleveland in 2020. ♦



Escape Room

As thousands of steel industry professionals packed the busy expo halls at AISTech 2019, two representatives from Michigan Technological University (Michigan Tech) offered conference-goers a chance to escape the crowd — and a challenge that tested their wits and problem-solving skills.

The Mobile Steel Escape Room was a standout feature at AISTech 2019, drawing large crowds and curious onlookers. Manning the escape room were Beth Williams, associate director of career development and education at Michigan Tech, and Ryan Thompson, a 2019 Michigan Tech graduate with a dual degree in mechanical engineering and theatrical design who developed and constructed the escape room.

“We’ve been doing mobile escape rooms at Michigan Tech as a way to teach our students the skill set employers are looking for: teamwork, critical thinking, problem-solving, collaboration, leadership and communication,” explained Williams. “Once we had success with our first few escape rooms, three of our steel industry partners reached out and wanted to be a part of it.”

Thompson then worked together with corporate sponsors Gerdau, Nucor and ArcelorMittal to develop a steel-themed escape room to educate Michigan Tech students about the high-tech steel industry of today. Thompson designed and built the room over a three-month period as part of his summer internship.

Thompson designed the interior of the Steel Escape Room to mimic a typical steel mill pulpit, with video screens showing footage of casting lines, a

control panel, safety posters, personal protective equipment, and even a bulletin board with company picnic flyers and takeout menus. Upon entering the room, participants were placed in the shoes of a new hire of a fictional steel company who has been given control of the plant in their boss’ absence. It was up to the escapees to solve puzzles, crack codes and use their knowledge of chemistry to make steel and escape the pulpit while preventing a critical safety incident, all in under 20 minutes. Successful participants were awarded with a t-shirt, an “I Escaped” ribbon for their conference badge and, most importantly, bragging rights.

The Mobile Steel Escape Room proved to be a rousing success. “It’s been absolutely amazing,” Thompson said at the close of the conference. “Every single one of our time slots filled up and at full capacity. Unfortunately we had to turn some people away because there was so much engagement. At every chance we had the room open and were showing it to people. People had a blast, even if they didn’t get out.”

The Steel Escape Room provided a memorable and exciting interactive experience for conference-goers.

