



**MINUTES OF MEETING  
UNIVERSITY-INDUSTRY RELATIONS ROUNDTABLE  
7 MAY 2018  
PHILADELPHIA, PA., USA**

**Attendees:**

Kelly Dallas, ArcelorMittal USA (Chair)  
Ron Ashburn, AIST  
Laura Bartlett, Missouri S&T  
Rick Bodnar, SSAB Americas  
Wendell Carter, ArcelorMittal Indiana Harbor  
Shannon Clark, ArcelorMittal Dofasco Inc.  
Emmanuel De Moor, Colorado School of Mines  
Neslihan Dogan, McMaster University  
Kelvin Erickson, Missouri S&T  
Terry Fedor, Cleveland Cliffs Inc.  
Kip Findley, Colorado School of Mines  
Steve Hansen, SSAB Americas  
Scott Laurenti, Nucor Steel Utah  
Paul Lynch, Pennsylvania State University  
Sam Matson, Commercial Metals Company  
Chris McKelvey, AIST  
Bimalendu Mukhopadhyay, AIST-India  
Ron O'Malley, Missouri S&T  
Rob Prins, James Madison University  
Laura Shoup, AK Steel Corp.  
John Speer, Colorado School of Mines  
Stacy Varmecky, AIST  
Lori Wharrey, AIST

Karen Arnold, AK Steel Corp.  
Steve Asseff, United States Steel Corporation  
Staci Beiswanger, Steel Dynamics Inc.  
Luis Cabrera, Voestalpine Texas  
Kinnor Chattopadhyay, University of Toronto  
Kester Clarke, Colorado School of Mines  
Mark D. Didiano, AIST  
Bill Emling, SMS group Inc.  
Mark Fedor, Morgan Engineering  
Morgan Ferguson, Steel Dynamics Inc.  
Donald Gray, Purdue University Northwest  
Kolin Keller, Commercial Metals Company  
Tim Lorge, Charter Steel  
Ted Lyon, Hatch Associates  
Tim McCrea, ArcelorMittal USA  
Jack Moreland, Purdue University Northwest  
Jerry Nelesen, AKJ Industries  
Tom Piccone, University of Pittsburgh  
Glenn Pushis, Steel Dynamics Inc.  
Randy Skagen, Nucor Steel Tuscaloosa  
Erin Van Rooy, Charter Steel  
Bryan Webler, Carnegie Mellon University  
Chenn Zhou, Purdue University Northwest

**1.0 CALL TO ORDER AND INTRODUCTIONS**

Ms. Dallas called the meeting to order and welcomed every in attendance.

**2.0 ANTI-TRUST GUIDELINE REVIEW**

Ms. Dallas reviewed the Anti-trust Guidelines provided with the agenda, and noted that the meeting would be held in compliance with the guidelines.

**3.0 COMMITTEE PURPOSE AND OBJECTIVE**

K. Dallas

The AIST Foundation University–Industry Relations Roundtable exists to foster communication between our university network and the steel industry. The committee objectives are to increase the number of professors teaching a steel-related curriculum, and to increase the number of students interested in a career in the steel industry.

#### 4.0 AIST MEMBER CHAPTER OUTREACH UPDATES

Shannon Clark from the Northern chapter shared that their chapter is actively engaged in reaching out to the 8 Material Advantage chapters in their region. Among many other activities geared toward student involvement, they routinely promote the pizza grants and Steel to Students Member Chapter Connection. In particular, they get great participation from students at Ryerson University, and the University of Toronto. She mentioned also that they are considering participation in a science and engineering fair.

Ms. Dallas from the Midwest Member Chapter briefly discussed their annual High School Seminar program, slated for 5 October at Purdue University Northwest. They expect 200-300 students. Their projection for chapter scholarships will be to give out \$42,000 in 2019.

#### 5.0 REAL STEEL VIDEO CONTEST UPDATE

Staci Beiswanger reported in on the student video contest. She shared that 10 entries were received this year, which resulted in 8 videos. Public voting during the month of February yielded more than 3,300 views. The theme of the 2018 contest was "The Importance of People in Steelmaking." Entrants were to identify personnel responsibilities; the evolution of the production, processing and application of iron and steel; and the roles people have in making the steel industry safer. The AIST Foundation received submissions from Brazil, Mexico, India and the United States. The contest committee will select a theme for the 2019 competition.

#### 6.0 FOUNDATION GRANT REPORTS

All recipients of a grant through the AIST Foundation were invited to provide a report on the progress of their project.

##### Kent D. Peaslee Junior Faculty Award:

- **Dr. Bryan Webler, Carnegie Mellon University** – This was my final year of the Peaslee Award. In the last year award funds were used to support an undergraduate research assistant during the summer of 2017. This student worked on high temperature microscopy of steels used for rolling mill rolls. These research positions have been effective at engaging students with the steel industry. My previous summer students now have jobs at Steel Dynamics and Special Metals Corporation. Other funding was used to supplement graduate research projects in areas ranging from high temperature oxidation of steel, to machine learning methods applied to steelmaking processes, to additive manufacturing of steel components. My graduate students have gone on to work for Nucor Steel, Vesuvius, Westinghouse, and the Naval Nuclear Laboratory. I teach elective classes on computational thermodynamics and the corrosion and oxidation of metals, where I utilize many examples related to steel processing and properties. Due in large part to the relationships fostered by my attendance at various events supported by AIST or the Peaslee award travel funds, this year I was also asked to teach the ironmaking/steelmaking/casting portion of the AIST Making, Shaping, and Treating of Steel course. I have also continued to introduce the steel industry to K-12 students. We participated in a high school outreach event at Pittsburgh's Carnegie Science Center with demonstrations of steel types and properties. I visited two local high schools to talk about my work in the steel industry. As a result of one of those visits, a local high school student will work as an intern in my lab this summer on a steel-related research project. This award has been very beneficial to my career development as a junior faculty member whose research focuses on the steel industry. I appreciate very much the AIST Foundation's support.
- Dr. Kinnor Chattopadhyay, University of Toronto
- Dr. Emmanuel De Moor, Colorado School of Mines

##### AIST Foundation Steel Professor:

- Dr. Laura N. Bartlett, Missouri University of Science & Technology

Electrical Engineering Grant:

- **Dr. Kelvin Erickson, Missouri University of Science & Technology** – Development of Steel Continuous Annealing Line Simulation Update. Two undergraduate students were involved in this project. To date we have developed a draft model of the heat furnace section of the line. The students encountered a few problems that hampered progress. The documentation for the Mimic software package was not complete and it required quite a few calls to their technical support line to resolve issues with errors reported by the simulation blocks and to configure the communications with the ControlLogix Emulator that simulated the real programmable logic controller. In addition, the simulation approach outlined in the proposal needed to be modified to fit how Mimic simulated a furnace. The heat furnace simulation produces a steel strip temperature within 50 degrees of the actual furnace. What remains to complete the heat section simulation is more details on the recuperator part of the burner zones. The project will continue with another undergraduate design team starting in the Fall semester. I feel the major hurdles have been overcome and expect the project will be completed within a year, with no additional funds.
- Dr. Donald Gray, Purdue University Northwest

Steel Curriculum Development Grant

- **Dr. Paul Lynch, Pennsylvania State University** – Dr. Lynch gave an overview of the Penn State Behrend campus and the School of Engineering at Penn State Behrend with over 5,000 students and approximately 1,600 in the School of Engineering. The first year of the AIST Steel Curriculum (2017-2018) grant was used to survey the current curriculum and start to work on adding hands on steel properties/ processing/ microstructure labs to the current curriculum. Two students are currently working with Dr. Lynch on the development of the lab modules. The initial development plan is to pilot modules during the 2018-2019 school year and tweak them for the 2019-2020 year. They will be offered to the sophomore/ junior level MATSE faculty with hope that all engineering students taking MATSE can take part in the labs. The last part of the grant will be developing modules for manufacturing process courses focused on how steels behave when processed during welding, machining, etc. Dr. Lynch talked about the Materials and Manufacturing Group (MMG) at Penn State Behrend. This group is home to the AIST and AFS chapter at Behrend. MMG is very active. They held their first Steel to Students night on campus February 2018. Approximately 60 students took part in the event. Ten steel companies attended the event. Three AIST Scholarships were awarded to MMG members this year (2018-2019). Of those, two were intern scholarships and one was engineering scholarship. There were six students at AISTech 2018 with Dr. Lynch.
- **Dr. Rob Prins, James Madison University** – The fairly new program at James Madison University has graduated seven classes and is inclusive of all engineering disciplines. We have used the Steel Curriculum Development Grant to develop Materials Science content that introduces several materials concepts through the lens of steel and also includes laboratory exercises associated with processing, mechanical testing and viewing the structure of steels through metallography. Students participate in hands-on efforts in which they process low carbon steel via a roll, and perform a quench and temper process on A2 Tool steel. Students perform mechanical testing and metallography on samples they have processed as well as on untreated samples. Intention is to let them experience the Process Structure Properties paradigm for themselves.

Don B. Daily Safety Grant

- Dr. John Moreland, Purdue University Northwest

## 7.0 ROUNDTABLE DISCUSSIONS

Ms. Dallas led brief discussion regarding internship hiring and retention.

Companies report more success with students who have done internships and noted the importance of getting them into the plants. We are getting good interviews but the students have many options.

Mr. McCrea reported the competition is very high for these students. ArcelorMittal has seen a 15% increase in retention if the individual had interned with them. One company loses 50% of their new hires in the first five years.

Faculty encouraged companies to not be afraid to grab Freshmen and Sophomores if they are genuinely interested. Also, working with companies on senior projects is beneficial to both the company and the students. The materials science department at the University of Pittsburgh recruits students into steel from among their Freshman class – and they are seeing results.

It was pointed out that moving forward the AIST Foundation scholarships will now all include an internship. It was agreed this was a good decision.

#### **8.0 NEXT MEETING**

The next UIRR meeting will be held on Monday, 9 Oct 2018, 10 a.m. - Noon (eastern) at MS&T18 in Columbus, Ohio.

#### **9.0 ADJOURNMENT**

There being no further business, Ms. Dallas adjourned the meeting.