Molding A Better Future

PRE-SHOW GUIDE
Your Casting Future Starts Now. It’s Time.

Metalcasting Congress is your chance to connect with suppliers, peers and customers. Catch new ideas to enhance and improve your job and your business. This year, take advantage of the heralded technical, management and Institute courses, keynote speakers, shared interest group meetings, and the AFS Hub which is located on the show floor.
Registration Information

Significant discounts are available for those who register early or are AFS members. You can register online any time at www.metalcastingcongress.org. For more information on becoming a member, go to www.afsinc.org/joinafs.

Exhibits registration gives you access to the exhibit floor, keynote speakers, Hoyt Lecture and Wednesday Reception. The Education Pass provides you with everything exhibits provides, **PLUS** AFS Institute courses, and the full technical and management programs.

Additional events such as the Copper Division Luncheon, Division Recognition Luncheon, President’s Luncheon, Annual Banquet, and plant tour require a special ticket available for purchase at the time of registration.

**Registration Hours**
- **Monday 4/2/2018** 4 – 6 p.m.
- **Tuesday 4/3/2018** 7 a.m. – 5 p.m.
- **Wednesday 4/4/2018** 7 a.m. – 5 p.m.
- **Thursday 4/5/2018** 7 a.m. – 12:30 p.m.
<table>
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<tr>
<th>Fees</th>
<th>Early Registration Through February 1</th>
<th>Advanced Registration February 2 - April 2</th>
<th>On-Site Registration April 3 - 5</th>
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<tr>
<td><strong>Members</strong></td>
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<td><strong>Spouse</strong></td>
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**Hotel and Transportation**

AFS has secured rates between $130-$200 per night for room blocks at several hotels. The host hotel is the Hilton Fort Worth (currently limited availability because of early reservations made).

Visit [www.metalcastingcongress.org](http://www.metalcastingcongress.org) for full list of hotels.

**Sheraton Fort Worth Downtown Hotel Co-Headquarter Hotel**
Room Rate: $179 single/double

**Omni Fort Worth Hotel**
Room Rate: $189 single/double

**Hilton Fort Worth Co-Headquarter Hotel – SPACE LIMITED**
Room Rate: $184 single/double

**RESERVATION DEADLINE DATE FOR ALL HOTELS IS MARCH 12, 2018.**

Attendees can also receive airfare discounts on United flights. For more information, on housing and airfare, go to [www.metalcastingcongress.org](http://www.metalcastingcongress.org).
Hoyt Memorial Lecture

Changing Perceptions: The Need for an “Unbalanced Force”
Dan Oman,
Wednesday, April 4, 2018 ~ 10:30 – 11:30 a.m.

Perceptions are a function of information received from many different sources. These perceptions become firmly held beliefs that rarely, if ever, change. Today, the typical perception of the metalcasting industry is that of a smokestack industry utilizing low technology and lacking in challenging career opportunities. This perception remains virtually unchanged since the 1970s. According to Newton’s First Law of Motion, an object moving in space continues to move in the same direction at a constant velocity in the absence of an unbalanced force. In the absence of an unbalanced force, perceptions also will not change. Over the past 40 years many individuals have acted as an unbalanced force to change perceptions. This presentation will examine the common aspects of these efforts so that each of us can have an impact on perceptions.

In the early morning hours of Sept. 23, Dotson Iron Castings experienced a fire that would destroy all of its molding capabilities, completely shut down its operation and require a recovery effort beyond what could ever have been detailed in a disaster recovery plan. Bye will talk about the many twists, turns, and lessons learned throughout the recovery process relating to disaster preparedness.

Economic and Political Update
Stephen Moore
Thursday, April 5, 2018 ~ 10:30 – 11:30 a.m.

Serving as Keynote Speaker on the morning of April 5 will be respected economist Stephen Moore, who was Senior Economic Adviser to the Trump Campaign in 2016.

“Stephen Moore is one of the foremost experts on tax policy and one of the most influential advocates for economic growth,” said Doug Kurkul, CEO of the American Foundry Society. “The insight and perspective he offers will benefit Metalcasting Congress attendees in their business planning and decision-making.”

Moore is currently the Distinguished Visiting Fellow for the Project for Economic Growth at the Heritage Foundation. In prior roles, he was the Founder of the Club for Growth, a member of the Wall Street Journal editorial board, and Founder of the Free Enterprise Fund. Moore was the Co-Founder of the Committee to Unleash Prosperity, alongside Arthur Laffer, Steve Forbes and Larry Kudlow.

The author or co-author of several books, Moore earned a bachelor of arts degree from University of Illinois at Urbana-Champaign. He holds a master’s of arts in economics from George Mason University. Moore’s commentary has often been featured on CNN, Fox News, and other news outlets.
The Hub

Our dedicated area for connecting with AFS staff and other attendees returns this year with the following:

- **AFS Bookstore featuring new titles**
- **Member Services - Make the most of your membership**
- **Makerspace**
- **Casting of the Year display**
- **Demonstrations of the metalcasting e-Learning modules**
- **Hands on demonstrations of Institute classroom learning activities**
- **Meet the authors**
- **And much, much more!**
Show Location
Fort Worth Convention Center
1201 Houston St.
Fort Worth, TX  76102

Fort Worth: City of Cowboys and Culture

Fort Worth is the 16th largest city in the U.S. and welcomes 8.8 million visitors annually. With seven entertainment districts, there’s no shortage of dining, shopping and entertainment amenities. Rich with culture, this area is home to a collection of museums and natural wonders such as the Fort Worth Botanic Gardens. Visit the Stockyards National Historic District for The Fort Worth Herd, the twice-daily cattle drive. With miles of walkable trails, bike sharing, and a free bus service that circulates between downtown hotels and must-see destinations, Fort Worth is one of the most accessible urban areas. The Fort Worth Convention Center is located 17.5 miles from DFW International Airport.
Show Schedule

Tuesday, April 3
8 a.m. – 4:45 p.m.  Technical & Management Sessions
9 a.m. – 5 p.m.  Exhibitor Set-up
10:30 – 11:30 a.m.  Keynote Speaker – Jean Bye
11:30 a.m. – 1 p.m.  Copper Division Luncheon (ticket required)
1:30 – 4:45 p.m.  Institute Course
6 – 7 p.m.  Annual Banquet Reception (cash bar)
7 – 10 p.m.  Annual Banquet (ticket required)

Wednesday, April 4
7:30 – 9 a.m.  Women in Metalcasting Breakfast
8 a.m. – 4:45 p.m.  Technical & Management Sessions
9 a.m. – 6 p.m.  Exhibit Hall Open
10:30 – 11:30 a.m.  Hoyt Memorial Lecture – Dan Oman
11:30 a.m. – 1 p.m.  Division Recognition Luncheon (ticket required)
1 – 4:45 p.m.  Institute Course
2 – 4 p.m.  Future Leaders of Metalcasting
4:30 – 6 p.m.  Reception with Exhibitors
6:30 p.m.  AFS Alumni Dinner (AFS Alumni only)

Thursday, April 5
8 – 10:15 a.m.  Technical & Management Sessions
8 – 10:15 a.m.  Institute Course
9 a.m. – 12 p.m.  Exhibits Open (Continental breakfast 9:30-10:30 a.m.)
10:30 – 11:30 a.m.  Keynote Speaker – Stephen Moore
11:30 a.m. – 1 p.m.  President’s Lunch and Annual Business Meeting (ticket required)
2:30 - 5 p.m.  Plant Tour (ticket required)

*Schedule is subject to change.

www.metalcastingcongress.org
**Special Event Tickets** Congress Registration not required for purchase of special event tickets.

<table>
<thead>
<tr>
<th>Event</th>
<th>Price</th>
<th>Date and Time</th>
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<tr>
<td><strong>Copper Division Luncheon</strong></td>
<td>$55</td>
<td>(Tuesday, April 3 • 11:30 a.m.)</td>
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<tr>
<td><strong>Annual Banquet</strong></td>
<td>$110</td>
<td>(Tuesday, April 3 • Cash Bar Reception 6 p.m. Banquet 7 p.m.)</td>
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<td><strong>Division Recognition Luncheon</strong></td>
<td>$55</td>
<td>(Wednesday, April 4 • 11:30 a.m.)</td>
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<tr>
<td><strong>Alumni Dinner</strong></td>
<td>$100</td>
<td>(Wednesday, April 4 • 6:30 p.m.) Must be AFS Alumni to attend.</td>
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<tr>
<td><strong>President’s Luncheon</strong></td>
<td>$55</td>
<td>(Thursday, April 5 • 11:30 a.m.)</td>
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<tr>
<td><strong>Foundry Tour</strong></td>
<td>$20</td>
<td>(Thursday, April 5 • 2:30 - 5 p.m.) Space is limited, only 60 spots are available.</td>
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**Special Events**  
Most events take place at the Fort Worth Convention Center unless otherwise noted.

**Copper Division Luncheon**  
**Tuesday, April 3 | 11:30 a.m. | Ticket required**  
The Copper Division Luncheon will feature a speaker of general interest from the Fort Worth area and will present the Copper Division Scholarship. It is open to everyone with an interest in copper alloys.

**Annual Banquet**  
**Tuesday, April 3 | Cash Bar 6 – 7 p.m. | Awards, Dinner then Entertainment 7 – 10 p.m. | Ticket required**  
Join us for the presentation of AFS’s highest honor, the Gold Medal. This year’s recipients are John R. Keough, PE and Dr. David V. Neff.

The entertainment for the evening is Dueling Pianos. Joe Phillips and Emmeline are two talented performers who will have everyone tapping their toes and singing along.

Joe Phillips is a keyboardist/vocalist who began his career in the Chicago area touring with several bands and performing as a solo artist. He composed music for corporate events and jingles for radio and TV. Currently, he is the founder of Joe Phillips Production, Inc. and has composed music for hundreds of TV shows. In recent years, he has made his home in Dallas where he composes and performs as a solo artist for events of all types.

Emmeline has been a pianist since the age of four and a songwriter since eleven-and-a-half (because, when you’re young, you count by “halves”). She earned a bachelor of arts in general music at Scripps College where she studied voice, piano and music theory. Emmeline uses her versatile musical palette to explore stories of everyday life that allow each listener to forge an intense and immediate connection.
Women in Metalcasting Breakfast
Wednesday, April 4 | 7:30 a.m.
This event is open to members of the Women in Metalcasting group and features a continental breakfast and networking with women who work in all facets of the metalcasting industry. To RSVP, email Katie Matticks at kmatticks@afsinc.org.

Division Recognition Luncheon
Wednesday, April 4 | 11:30 a.m. | $55 | Ticket required
This luncheon will feature the presentation of the Best Paper and Division awards, as well as the Applied Research and Howard F. Taylor Award.

Future Leaders in Metalcasting Panel
Wednesday, April 4 | 2 - 4 p.m.
Are you interested in hearing from both prospective new future leaders and those that have already started leading the way? Do you want to know what students are looking for in an employer? Do you want to hear some best practices on issues you are currently facing at your location? During the first part of this panel discussion, you will be asking questions of leaders in the metalcasting industry on relevant topics in the industry as well as networking with other professionals. The second half of the panel will consist of students entering the workforce or those recently engaged in the metalcasting industry. Get involved in this interactive discussion and learn ways to attract young talent and also discuss issues facing future leaders every day. Cocktails and appetizers will be provided during this event. To RSVP, email Cathy Potts at cpotts@afsinc.org.

Reception With Exhibitors
Wednesday, April 4 | 4:30 p.m.
Attendees are encouraged to mingle on the show floor with exhibitors. Enjoy snacks and refreshments. Check the “I will attend” box when you register to count you in.

Alumni Dinner
Wednesday, April 4 | 6:30 p.m. | $100 | Ticket required
Grab your cowboy hat or boots and join fellow alumni at the Texas Hall of Fame in the historic Stockyards District for dinner and a guided tour. The Texas Hall of Fame honors those men and women who have excelled in the sport and business of rodeo, and the western lifestyle in Texas. Their 100+ inductees include: Nolan Ryan, Tommy Lee Jones, Trevor Brazile, Don Edwards, George Strait, Lane Frost, Ty Murray, Barry Corbin, Red Steagall, Tuff Hedeman, J.J. Hampton and many more who have their own individual booth containing personal memorabilia to view. (Includes transportation.) Must be AFS Alumni to attend.

President’s Lunch & Annual Business Meeting
Thursday, April 5 | 11:30 a.m. | $55 | Ticket required
Join the annual meeting where the election of AFS officers and directors will be announced. In addition, the AFS Awards of Scientific Merit, Service Citations, Casting of the Year, Corporate Contribution Award and Millionaires Safety Awards will be presented.

Plant Tour
Thursday, April 5 | 2:30 - 5 p.m. | $20 | Ticket required
Join us for a tour of a nearby metalcasting plant, location still being finalized, on Thursday afternoon from 2:30-5 p.m. The AFS Texas Chapter will be hosting the event at a member facility within 30 minutes driving distance from the Fort Worth Convention Center. The registration fee includes round trip transportation as well as a beverage and light snack. The host facility reserves the right to disallow any tour participants that are deemed competitive in nature. Full refunds will be offered if this occurs.
Featured Exhibitors

ABP Induction

American Colloid Company

Ask Chemicals

We advance your casting

Fairmount Santrol

Integrated Sand and Resin Solutions

General Kinematics

Inductotherm
Supplier Exhibitors
(as of 12/21/2017)

Visit the show floor to connect with companies that help solve your problems and improve your bottom line. Don’t forget to swing by the reception on Wednesday, April 4 from 4:30 – 6 p.m.

ABP Induction LLC.
Ajax Tocco Magnethermic Corp.
Albarrie Environmental Services Ltd.
Alcoa USA Corp.
Allied Mineral Products Inc.
American Colloid Co.
AMETEK Foundry Products
Anderson Global
Angstrom Inc.
AnyCasting Software Co. Ltd.
Applied Process Inc.
Asco Carbon Dioxide Inc.
ASK Chemicals
ATD Engineering & Machine
B&L Information Systems Inc.
Badger Mining Corp.
Blast Cleaning Technologies
Bosello High Technology
C M H Manufacturing Co.
Capital Refractories Inc.
CARBO Industrial Technologies
Carrier Vibrating Equipment Inc.
Champion Chisel Works Inc.
Didion International Inc.
Ductile Iron Society
Dustmaster Enviro Systems
Eccomelt LLC.
Electric Controls & Systems Inc.
Elementar Americas
Elkem Foundry Products
Empire Systems Inc.
Engis Corporation
Equipment Manufacturers Intl. Inc.
ERIEZ
ETA Engineering Inc.
ExOne
EZG Manufacturing
Fairmount Santrol
FATA Aluminum LLC.
FEF
Finite Solutions Inc.
Flexovit USA Inc.
Flow Science Inc.
Foseco
Foundry Solutions & Design
General Kinematics Corp.
Goff Inc.
Gradient Lens Corp.
Green Packaging Inc.
GreenSand Controls Inc.
Guardian Software Systems Inc.
HA International LLC.
Henschel Andromat Inc.
Hickman Williams & Co.
Hoosier Pattern Inc.
Houghton International Inc.
Humtown Products
Hunter Foundry Machinery Corp.
IMERYS
Induction Iron Inc.
Inductotherm Corp.
Innovative Analytical Solutions
Itochu Ceratech Corp.
Joest
Joy Mark Inc.
Junker Inc.
King Tester Corp.
Kittyhawk Products
Kodiak Group
Kuttner LLC.
Laempe + Reich Corp.
LECO Corporation
Lindberg/MPH
Magma Foundry Technologies Inc.
Matrix Sensors LLC.
Morgan Molten Metal Systems
MPM Infosoft Pvt. Ltd.
Non-Ferrous Founders Society
Norican Group
NorthStar Products
Norton/Saint-Gobain Abrasives
NovaCast Solutions USA Inc.
OmniSource Corp.
Palmer Mfg & Supply Inc.
Perfect Patterns Inc.
Peter E Macler Assoc. PLLC
Piller Induction
Refcotec
Refractory & Insulation Supply
Rimrock Corp.
Roberts Sinto Corp.
Saveway USA Corp.
Schust Engineering Inc.
Selee Corporation
Simpson Technologies Corp.
solidThinking Inc.
Southeastern Foundry Products & Foundry Coatings Inc.
Superior Graphite Co.
Synchro ERP Ltd.
TDJ Group Inc.
TeeMark Manufacturing Inc.
The Hill & Griffith Co.
Thermtronix Corp.
THORS eLearning Solutions
Tinker Omega Mfg LLC.
Top Cat Air Tools
Transmet Corp.
Ultraseal America Inc.
U-Metco Inc.
Unimin Corp.
United Refractories Co.
Verder Scientific Inc.
Versevo Inc.
Viking Technologies
Vulcan Engineering Co Inc.
Zerust Corrosion Solutions

Cast in North America Exhibitors
(as of 12/21/2017)

Cast in North America showcases the capabilities of North American metalcasters for buyers and designers. It is the premier marketplace for casting end-users.

Atlas Foundry Co Inc.
Bremen Castings Inc.
Charlotte Pipe & Foundry Co.
Decatur Foundry Inc.
Dotson Iron Castings
LeClaire Manufacturing Co.
Lethbridge Iron Works Co. Ltd.
McConway & Torley LLC.
Monarch Industries Ltd.
Osco Industries Inc.
Pier Foundry & Pattern Shop
Product Development & Analysis LLC.
Rochester Metal Products Corp.
Waupaca Foundry Inc.
Webster Industries Inc.
Education Program

TUESDAY, APRIL 3

8 – 9 a.m.
Panel: Multiple Alloys Scrap Management: Alloy Issues, Segregation, and In-Plant Management (18-126)

James Michel, Copper Development Association, New York, NY; Mike Galvin, Buck Co., Inc., Quarryville, PA

Tags: Nonferrous

Research into the Quantitative Evaluation of Casting Surfaces Using 3D Laser Scanning (18-090)

Nathaniel Bryant, University of Northern Iowa, Cedar Falls, IA

Tags: Engineering & Technology

Use of X-Bead and Inline Hot Air Expanders for Lost Foam Patterns II (18-134)

Melissa Wallum, StyroChem Canada Ltd., Baie-D’urfe, QC, Canada

Tags: Molding

Use of Novel Lost Foam Technology for 9000 lbs and Beyond for Steel and Other Ultra-Low Carbon Alloys (18-135)

Will Jeffs, Castings Technology International, Rotherham, West Yorkshire, UK

Tags: Molding

The Twin Chamber Cokeless Furnace for Ferrous Castings at Low Emissions (18-017)

Baha Abulnaga, Mazdak International Inc (dBA Splitvane Engineers Inc), Sumas, WA

Tags: Environmental, Health & Safety, Ferrous, Engineering & Technology, Business of Metalcasting

8:30 – 10 a.m.
Panel: Preparing for the Metalcasting Workplace of Tomorrow (18-151)

Tags: Business of Metalcasting, Professional Development

9:15 – 10:15 a.m.
Panel: Core Production and Tooling Design Optimization Using Numerical Core Blowing Simulation (18-127)

Jarek Olszak, Laempe + Reich Corp., Trussville, AL; Mauricio Velazquez Blandino, Magma Foundry Technologies Inc., Schaumburg, IL

Tags: Nonferrous, Molding

The Development of Lost Foam Casting in China (18-136)

Guo Peng, Huazhong University of Science & Technology, Guanshankou District, China

Tags: Molding

3-D Printing of Lost Foam Tooling (18-137)

Marshall Miller, Flowserve, Irving, TX

Tags: Molding, Engineering & Technology
David Ailor, American Coke and Coal Chemicals Institute, Washington, D.C.; David Kasun, Kuttner LLC, Port Washington, WI
Tags: Ferrous

**10:30 – 11:30 a.m.**

**Keynote/Honorary Lecture: Disaster Recovery – Everyone’s Worst Nightmare (18-150)**
(Sponsored by the AFS Cast Iron Division)
Jean Bye, Dotson Iron Castings, Mankato, MN
Tags: Engineering & Technology, Business of Metalcasting

**1:30 – 3 p.m.**

**Evolution of Aluminium Cylinder Head Alloys (18-116)**
Francis Breton, Rio Tinto, Saguenay, QC, Canada
Tags: Nonferrous

**Evaluation of A New High Temperature Cast Aluminum Alloy for Cylinder Head Applications (18-034)**
Qigui Wang, Devin Hess, General Motors, Pontiac, MI; Xinyan Yan, Alcoa Technical Center, New Kensington, PA; Francis Caron, Alcoa Technical Center, Deschambault, QC, Canada
Tags: Casting Design & Purchasing, Nonferrous, Engineering & Technology

**An Aluminum Casting Alloy for High Performance Engines (18-069)**
David Weiss, Eck Industries, Inc., Manitowoc, WI
Tags: Casting Design & Purchasing, Nonferrous, Engineering & Technology

**Solidification Pattern of Silicon Alloyed Ductile Cast Irons (18-022)**
Stelian Stan, Iulian Riposan, Mihai Chisamera, Politehnica University of Bucharest, Romania; Michael Barstow, Consultant Metallurgist, Napa, CA
Tags: Casting Design & Purchasing, Ferrous

**Modeling the Variation of Tensile Properties of High Silicon Ductile Iron (18-040)**
Peter Hammersberg, Kenneth Hamberg, Chalmers University of Technology, Gothenburg, Sweden; Henrik Borgstrom, Swerea SWECAST AB, Jonkoping, Sweden; Joachim Lindkvist, Volvo Powertrain, Gothenburg, Sweden; Lars-Erik Björkergren, LEB Casting Technology, Jönköping, Sweden
Tags: Casting Design & Purchasing, Engineering & Technology

**Effect of Non-Metallic Inclusions on Solidification of Inoculated SGI (18-083)**
Simon Lekakh, Missouri University Science and Technology, Rolla, MO
Tags: Ferrous

Panel: Safety in the Foundry - Tips and Tools for Achieving a Safer Workplace (18-124)
Tom Slavin, Slavin OSH Group LLC, Chicago, IL; Shawn Sexauer, Neenah Foundry Co., Neenah, WI; Ted Schorn, Enkei America, Inc., Columbus, IN
Tags: Environmental, Health & Safety, Nonferrous

Panel: An Update on the Latest Trends in Ferrous Charge Materials (18-121)
Lenny Basaj, Metal Technologies Ravenna Ductile Iron Plant, Ravenna, MI; David Borsuk, Sadoff Iron & Metal Co., Fond du Lac, WI; Gene Holloway, Hickman Williams & Co., Oakbrook, IL; Tim Hogan, National
TUESDAY

Material Trading, Elk Grove Village, IL
Tags: Ferrous

Pig Iron: A Value-Adding Feedstock for Ferrous Castings (18-045)
Chris Barrington, International Iron Metallics Association, Guildford, Surrey, UK
Tags: Ferrous, Business of Metalcasting

1:30 – 4:45 p.m.
AFS Institute: Virtual Casting Process (18-146)
Bo Wallace, AFS Institute, Schaumburg, IL
Tags: Casting Design & Purchasing, Professional Development

3:15 – 4:45 p.m.
Metallurgical Properties Inside a Tilt Poured Permanent Mold Structural Aluminum AlSi7Mg03 (A356) Casting (18-011)
Franco Chiesa, Quebec Metallurgy Center, Trois-Rivières, QC, Canada; Jeremy Carignan, Centre de Métallurgie du Québec, Trois-Rivières, QC, Canada; David Lesavasseur, Gheorghe Marin, Quebec Metallurgy Center, Trois-Rivières, QC, Canada; Michel Jutras, Powercast Manufacturing Inc., St-Eustache, QC, Canada
Tags: Nonferrous, Engineering & Technology

Defining True Production Costs While Meeting Optimal Casting Quality (18-049)
John Hambleton, Magma Foundry Technologies, Inc., Schaumburg, IL
Tags: Ferrous, Nonferrous, Engineering & Technology, Business of Metalcasting

Panel: Money Saving Ideas/Problems Solved Using Six Sigma (18-143)
Lizeth Medina-Alatorre, Neenah Foundry, Neenah, WI; Brandon Reneau, Caterpillar Inc., Mapleton, IL; Roxanna Stein, Waupaca Foundry Inc., Tell City, IN; Joe Renze, John Deere Foundry, Waterloo, IA; Ray Staral, Dura-Bar, Woodstock, IL
Tags: Ferrous, Engineering & Technology

Branding Yourself: How to Use Social Media to Invent or Reinvent Yourself (18-154)
Erik Deckers, Pro Blog Service, Orlando, FL
Tags: Business of Metalcasting

Panel: Channel Induction Refractory Installation, Maintenance and Safety (18-140)
John Walsh, Saint Gobain Ceramics, Worcester, MA; Johnny Hill, Martin Foundry, Dallas, TX; Jack McMillin, Ajax Tocco Magnethermic Corp, Warren, OH; Bill Matarazzo, Inductotherm Corp., Rancocas, NJ; Pat Leper, Saveway USA Corp., North Canton, OH
Tags: Ferrous

What Impact Will 3-D Metal Printing Have on Investment Casting? (18-109)
Tom Mueller, Mueller AMS, New Berlin, WI
Tags: Molding, Business of Metalcasting

Firing Time/Temperature Effect on Investment Shells Thermos-Mechanical Properties (18-050)
Mingzhi Xu, Missouri Univ. of Science & Technology, Rolla, MO; Joe Govro, MetalTek International, Pevely, MO; Madison Wooley, Scott Vogel, Wayne Pugh, Missouri Univ. of Science and Technology, Rolla, MO
Tags: Ferrous, Nonferrous, Molding, Engineering & Technology, Business of Metalcasting
### Morphology and Residual Strength of Modified Single Component Sodium Silicate Bonded Sands (18-108)

Farai Banganayi, Kasongo Nyembwe, University of Johannesburg, Johannesburg, Gauteng, South Africa; Hartmut Polzin, Technische Universität Bergakademie, Freiberg, Germany

Tags: Molding

#### WEDNESDAY, APRIL 4

**8 – 9 a.m.**

**MultiMaterial Casting - Practical Foundry Guidelines (18-082)**

Carl Soderhjelm, Diran Apelian, Worcester Polytechnic Institute, Worcester, MA

Tags: Nonferrous, Engineering & Technology, Business of Metalcasting

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**Creating Knowledge From Big Data in Metal Casting Operations (18-120)**

Adam Kopper, Brunswick Corp, Fond du Lac, WI; Ning Sun, Diran Apelian, Worcester Polytechnic Institute, Worcester, MA

Tags: Nonferrous, Engineering & Technology, Business of Metalcasting

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**Integrating Your Quality Management System With Your Enterprise Resource Planning System (18-117)**

Patrick McCrevan, B&L Information Systems, Inc., Bridgman, MI

Tags: Engineering & Technology, Business of Metalcasting

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**Hot Permeability (18-037)**

Sam Ramrattan, Prayag Patel, Dariush Moradinezhad, Western Michigan University, Kalamazoo, MI

Tags: Ferrous, Nonferrous, Molding, Engineering & Technology

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**3-D Visualization of Thermal Distortion in Disc-Shaped Chemically Bonded Sand Specimens (18-038)**

Pavel Ikonomov, Jorge Rodriguez, Alamgir Choudhury, Sam Ramrattan, Western Michigan University, Kalamazoo, MI

Tags: Ferrous, Nonferrous, Molding, Engineering & Technology

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**New Tools for Casting Design and Simulation Engineers (18-139)**

Jiten Shah, Product Development & Analysis LLC, Naperville, IL

Tags: Casting Design & Purchasing, Engineering & Technology

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**9:15 – 10:15 a.m.**

**Understanding Barium as a Modifier in Al-Si Alloys (18-068)**

David Weiss, Eck Industries, Inc., Manitowoc, WI; Thomas Wood, Michigan Technological University, Houghton, MI

Tags: Ferrous, Engineering & Technology

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**Influence of Strontium and Aluminum Oxides on Porosity Formation in Al-Si Castings (18-098)**

Agnes Samuel, Fawzy Samuel, Université du Québec à Chicoutimi, Chicoutimi-Saguenay, QC, Canada; Herbert Doty, General Motors, Pontiac, MI; Salvador Valtierra Gallardo, Nemak, S.A., Garza Garcia, Mexico

Tags: Nonferrous
Influence of Mn and S on the Microstructure of Cast Iron (18-091)
Richard Gundlach, Element Materials Technology, Wixom, MI
Tags: Ferrous

Influence of Mn-S Balancing on Fatigue Strength in Cast Iron (18-094)
Richard Gundlach, Element Materials Technology, Wixom, MI
Tags: Ferrous

Panel: EH&S Hot Topics and Washington Update (18-131)
Jeet Radia, McWane Inc., Birmingham, AL; Holly Hurst, McWane Ductile - Utah, Provo, UT; Jeff Hannapel, The Policy Group, McLean, VA; Stephanie Salmon, AFS Washington Office, Washington, D.C.
Tags: Environmental, Health & Safety

Panel: Work Hardening: How to Overcome Obstacles (18-145)
Sara Timm; Waupaca Foundry Inc., Waupaca, WI; Emily Shedlarski, Hubbell Power Systems, Leeds, AL; Sandy Calabrese; General Motors, Defiance, OH; Laura Grondin, Virginia Industries Inc., Rocky Hill, CT
Tags: Business of Metalcasting, Professional Development

Silver Anniversary Lecture: Processing of Foundry Sands for Re-Use Within the Foundry - Past, Present and Future (18-141)
Robert Voigt, Penn State University, University Park, PA
Tags: Molding, Engineering & Technology

Effect of Water Quality on Green Sand Properties (18-009)
Bo Wallace, AFS Institute, Schaumburg, IL; Sairam Ravi, Jerry Thiel, University of Northern Iowa, Cedar Falls, IA
Tags: Ferrous, Nonferrous, Molding

10:30 – 11:30 a.m.
Hoyt Memorial Lecture: Changing Perceptions: The Need for an “Unbalanced Force” (18-103)
Dan Oman, Haley & Aldrich Inc., Ann Arbor, MI

1:30 – 3 p.m.
Challenges in the Design and Manufacture of Efficient, Downsized ICE Cylinder Heads (for future vehicles) (18-133)
Denis Massinon, Montupet SA, Livonia, MI
Tags: Casting Design & Purchasing, Nonferrous

Thermal Treatment of Al-Mg-Ce Alloys (18-070)
David Weiss, Eck Industries, Inc., Manitowoc, WI
Tags: Casting Design & Purchasing, Nonferrous, Engineering & Technology, Business of Metalcasting

Effects of Transition Elements and Si Content on the Tensile Properties of an Al-Cu Alloy at Ambient and High Temperature (18-101)
Ahmed Ibrahim, Agnes Samuel, Fawzy Samuel, Université du Québec à Chicoutimi, Chicoutimi-Saguenay, QC, Canada; Herbert Doty, General Motors, Pontiac, MI
Tags: Nonferrous
A Novel Inoculant Promoting a Type A Graphite Structure in Gray Iron While Minimizing Slag Generation in Pouring Boxes (18-043)

Cathrine Hartung, Elkem Foundry Products, Kristiansand, Norway; Matthew Liptak, Elkem Materials Inc., Pittsburgh, PA

Tags: Ferrous, Engineering & Technology, Business of Metalcasting

Shrinkage Induced Gas Porosity Model for Analysis of Solidification Shrinkage in Castings (18-030)

Sung-Bin Kim, Dong-Hoon Roh, Young-Hoon Yim, AnyCasting Software Co., Ltd., Seoul, South Korea; Doru Stefanescu, University of Alabama and Ohio State University, Dublin, OH

Tags: Ferrous, Engineering & Technology

Stop Name Calling - Identify Casting Defects by Appearance to Reduce Scrap (18-067)

Dr. Sudesh Kannan, Co-Power LLC, Schaumburg, IL; Abhishek Pathak, Kautex Textron Inc., Muskegon, MI; Tom Cobett, Tom Cobett and Associates, Strongsville, OH

Tags: Casting Design & Purchasing, Ferrous, Nonferrous, Molding, Engineering & Technology, Business of Metalcasting

Silica Source Reduction - Determining Feasibility (18-130)

Trent Blake, Keramida, Indianapolis, IN

Tags: Environmental, Health & Safety, Business of Metalcasting

Panel: Understanding and Implementing the New OSHA Silica Rule (18-132)

Tom Slavin, Slavin OSH Group LLC, Chicago, IL; Bob Scholz, TRC Solutions, Brookfield, WI; Fred Simpson, McWane Inc., Birmingham, AL; Stephanie Salmon, AFS Washington Office, Washington, D.C.

Tags: Environmental, Health & Safety

Panel: Defects, Coating and Additives (18-128)

Jeff Cieplewski, Prince Minerals LLC, Milwaukee, WI; Jay Morrison, Carpenter Brothers Inc., Mequon, WI; Sam Ramrattan, Western Michigan University, Kalamazoo, MI

Tags: Molding

Preliminary Investigation and Method to Determine Resin Content For 3-D Sand Printers (18-053)

Kip Woods, University of Northern Iowa, Cedar Falls, IA; Michael Richardson, Sudhir Trikha, HA International, Westmont, IL

Tags: Ferrous, Nonferrous, Molding, Engineering & Technology, Business of Metalcasting

AFS Institute: Identifying the Correct Casting Defect (18-147)

Shelly Dutler, AFS Institute, Schaumburg, IL

Tags: Casting Design & Purchasing, Professional Development, Ferrous, Nonferrous, Molding

1:30 – 4:45 p.m.

Casting of the Year Case Study

Tags: Casting Design & Purchasing, Business of Metalcasting
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<th>Time</th>
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<th>Panelists</th>
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<td>2 – 4 p.m.</td>
<td>Panel: Today's Students, Tomorrow's Future Leaders in Metalcasting</td>
<td>(18-148)</td>
<td>Professional Development</td>
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<td>3:15 – 4:45 p.m.</td>
<td>Influence of Core Variables in Aluminum Semi-Permanent Mold Dimensions (18-077)</td>
<td>Russ Stein, Michigan Technological Univ., Houghton, MI; Randy Oehrlein, Carley Foundry, Inc, Blaine, MN</td>
<td>Nonferrous, Molding, Engineering &amp; Technology, Business of Metalcasting</td>
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<td>The Influence of Sand Mold/Core Properties on the Solidification of Aluminum Alloy (18-093)</td>
<td>Sritama Kar, ASK Chemicals LP, Dublin, OH; Gregory Sturtz, Xianping Wang, Ashland Chemicals, Dublin, OH</td>
<td>Nonferrous</td>
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<td>Analysis of Permanent Mold Distortion in Aluminum Casting (18-138)</td>
<td>Lynn Ferguson, Zhichao Li, Justin Sims, Dante Solutions Inc., Cleveland, OH; David Schwam, Case Western Reserve University, Cleveland, OH; David Neff, Consultant, Willoughby, OH</td>
<td>Nonferrous</td>
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<td>A Comparative Study of Crystal Growth in Cast Iron and in Analogous Systems - Part I: Crystallization Mechanisms in Graphite and Analogous Hexagonal and Cubic Systems (18-031)</td>
<td>Doru Stefanescu, University of Alabama and Ohio State University, Dublin, OH; Gorka Alonso, Pello Larrañaga, Esther de la Fuente, Ramon Suarez, IK4-Azterlan, Durango, Spain</td>
<td>Ferrous, Engineering &amp; Technology</td>
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<td>A Comparative Study of Crystal Growth in Cast Iron and in Analogous Systems - Part II: Experimental Work on Cast Iron and the Multi-Mechanism Theory of Graphite Crystallization (18-032)</td>
<td>Doru Stefanescu, University of Alabama and Ohio State University, Dublin, OH; Gorka Alonso, Pello Larrañaga, Esther de la Fuente, Ramon Suarez, IK4-Azterlan, Durango, Spain</td>
<td>Ferrous, Engineering &amp; Technology</td>
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<td>Exploit Industrial Internet of Things for Increased Production &amp; Lower Cost (18-081)</td>
<td>James Wiczer, Sensor Synergy, Inc., Vernon Hills, IL; Brian Reinke, TDI Energy Solutions, Lemont, IL</td>
<td>Engineering &amp; Technology, Business of Metalcasting</td>
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<td>Think Like a Storyteller: Turning Numbers into Narrative (18-123)</td>
<td>Kerry Edelstein, Research Narrative, Inc., Los Angeles, CA</td>
<td>Business of Metalcasting, Professional Development</td>
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<td>Case Study: Reducing Shrinkage in Aluminum Castings Using Thermal Management of PUCB Resin System (18-100)</td>
<td>Brodie Biersner, HA International, Westmont, IL; Sairam Ravi, Scott Giese, Univ. of Northern Iowa, Cedar Falls, IA</td>
<td>Ferrous, Nonferrous</td>
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<td>Virtual Design of Experiments and Optimization of Core Production (18-046)</td>
<td>Mauricio Velazquez Blandino, Magma Foundry Technologies Inc., Schaumburg, IL; Ingo Wagner, Joerg Sturm, MAGMA GmbH, Aachen, Germany</td>
<td>Ferrous, Nonferrous, Molding, Engineering &amp; Technology, Business of Metalcasting</td>
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Using Disc-shaped Specimen Tests to Classify Chemically Bonded Sand Systems (18-035)
Prayag Patel, Lee Wells, Sam Ramrattan, Western Michigan University, Kalamazoo, MI
Tags: Molding, Engineering & Technology

THURSDAY, APRIL 5

8 – 9 a.m.
Sheet Metal Mold Casting (SMMC) Process - A Novel Process for Production of Sand Castings (18-056)
Pravash Maity, Consultant, Jalandhar, Punjab, India
Tags: Nonferrous, Molding, Engineering & Technology, Business of Metalcasting

Forced Cooling of Semi-Permanent Molds for Fine Grain Ferrous Castings (18-115)
Nick Moroz, Pedro Guillen, Detroit Materials, Wixom, MI; Rish Mitra, ESI-NA, Farmington Hills, MI
Tags: Casting Design & Purchasing, Nonferrous

Efficiency of Solid Inclusion Removal from the Steel Melt by Ceramic Foam Filter: Design and Experimental Validation (18-048)
Soumava Chakraborty, Ronald O’Malley, Laura Bartlett, Mingzhi Xu, Missouri University of Science & Technology, Rolla, MO
Tags: Ferrous, Engineering & Technology, Business of Metalcasting

Influence of Rare Earth Additions on the Structure of HY100 (18-062)
Robert Tuttle, Saginaw Valley State University, University Center, MI
Tags: Ferrous

8 – 10:15 a.m.
Panel: Additive Manufacturing (18-144)
Marshall Miller, Flowserve, Irving, TX; Travis Frush, University of Northern Iowa, Cedar Falls, IA; Tom Mueller, Mueller AMS, New Berlin, WI; Jiten Shah, Product Development & Analysis LLC, Naperville, IL; Jerry Thiel, University of Northern Iowa, Cedar Falls, IA
Tags: Casting Design & Purchasing, Molding

AFS Institute: Managing Professional Interactions in a Diverse Workforce
Presented in cooperation with AFS HR Committe and Women in Metalcasting
Tags: Business of Metalcasting, Professional Development

9:15 – 10:15 a.m.
Effect of Nonmetallic Inclusions on Impact Toughness in High Strength Lightweight Steels With Different Sulfur Additions (18-033)
Tags: Casting Design & Purchasing, Ferrous, Engineering & Technology

10:30 – 11:30 a.m.
Keynote Presentation: Economic & Political Update
Stephen Moore
Tags: Business of Metalcasting