

AFS METALCASTING CONGRESS

April 25-27, 2023
Cleveland, OH

Spark Success.

**Metalcasting Congress 2023
Pre-Show Guide**

**April 25-27, 2023
Cleveland, Ohio**

metalcastingcongress.org

Produced by the American Foundry Society | AFSinc.org



Spark Success at Metalcasting Congress 2023

The best in metalcasting technology, products, and networking is coming to Cleveland on April 25-27, 2023. Experience **Metalcasting Congress** and spark success!



Explore the bright future of metalcasting.

From the newest manufacturing tech to the latest breakthroughs in research, **Metalcasting Congress** gives you the first look at the trends and advancements that will shape the metalcasting industry for years to come.

Discover limitless opportunities.

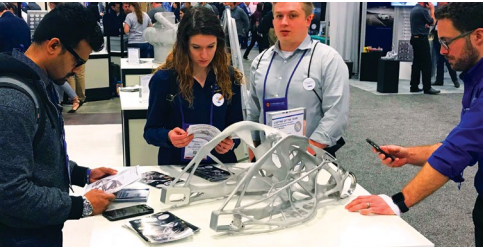
Dive into interactive demonstrations. Talk shop with the experts. And meet face-to-face with top suppliers, metalcasters, and service providers. Discover how you can maximize your operations – and your profitability – at **Metalcasting Congress**.

Network with our industry’s best.

Metalcasting Congress brings together a worldwide community of professionals who aim to grow their businesses and their careers. From industry veterans to rising leaders, you’ll make connections to count on throughout your professional path.

Who Should Attend Metalcasting Congress 2023?

- Foundry Owners and CEOs
- Metalcasting Engineers
- Plant Managers
- HR Managers
- Sales Managers
- Trainers
- Management Trainees
- Supplier Technical Specialists
- Sales Managers
- Parts Buyers
- Parts Designers
- Parts Specialists
- Students in Metalcasting Programs
- Anyone connected to the worldwide metalcasting supply chain



What You’ll Experience at Metalcasting Congress

Supplier Exhibits

Displays from 200-plus new and returning exhibitors serving the entire metalcasting supply chain, providing everything from consumables to equipment to services.

Environmental, Health & Safety Insights

Nothing is more important to metalcasters than workplace safety and environmental stewardship. From presentations delivered by seasoned experts to the newest equipment and services, **Metalcasting Congress** highlights the latest advancements in foundry EHS.

Foundry Exhibits (Cast in North America)

Leading North American foundries will share the latest services and capabilities with designers, buyers, and OEMs in the capstone of the supply chain, the Cast in North America pavilion. Bring your designs and questions.

Lectures, Keynotes, & Special Events

From the Hoyt Memorial Lecture – one of the industry’s most distinguished addresses – to engaging keynotes, banquets, and awards presentations, **Metalcasting Congress** highlights the best in industry knowledge-sharing and honors. Be sure to catch this year’s highly anticipated “Great Debate: Additive Manufacturing vs. Castings vs. Forgings” on April 27!



Education, Knowledge Transfer, & Research

Metalcasting Congress delivers thought-provoking sessions, technical research advancements, AFS Institute classes, and panel discussions on how to improve operations, increase efficiency, enhance quality, and more, across all major processes and alloys. To get the most value, upgrade to the **Education & Knowledge Transfer Pass**.

Selected session topics include:

- Additive Manufacturing
- Casting Design & Purchasing
- Engineering
- Environmental, Health & Safety
- Ferrous & Nonferrous Alloys
- Future Leaders of Metalcasting
- Industry 4.0
- Marketing & Sales
- Melting
- Molding
- Pouring
- Quality Control
- Workforce Development
- Women in Metalcasting



Show Location & Schedule

**Huntington Convention
Center of Cleveland**
300 Lakeside Ave E
Cleveland, OH 44113

Tuesday, April 25

8 a.m. – 4:45 p.m.
**Technical &
Management Sessions**

8 – 10:15 a.m.
**AFS Institute Course:
Metalcasting Process Basics - Part
One**

8 a.m. – 5 p.m.
Exhibitor Set-up

10:30 – 11:30 a.m.
**Keynote Speaker:
Dwier Brown**
Actor, author, and inspirational speaker

11:45 a.m. – 1:15 p.m.
**Volunteer Leadership
Awards Luncheon**
(Ticket required)

1:30 – 4:45 p.m.
**AFS Institute Course:
Metalcasting Process
Basics - Part Two**

6 – 7 p.m.
Annual Banquet Reception
(Cashless bar)

7 – 9 p.m.
Annual Banquet
(Ticket required)

9 p.m.
President's After-Party
(Cashless bar)

Wednesday, April 26

7:30 – 9 a.m.
**Women in
Metalcasting Breakfast**
(RSVP required)

8 a.m. – 4:45 p.m.
**Technical &
Management Sessions**

8 – 10:15 a.m.
**AFS Institute Course:
The 10-Step Method for
Corrective Action - Part One**

9 a.m. – 6 p.m.
Exhibits Open

10:30 – 11:30 a.m.
**Hoyt Memorial Lecture:
John R. “Chip” Keough**
*Chairman of LightSpeed Concepts Inc.,
President of Keotech Inc.*

11:30 a.m. – 1 p.m.
Past President's Luncheon

11:45 a.m. – 12:45 p.m.
**IJMC-FEF Student
Research Competition**

1:30 – 4:45 p.m.
**AFS Institute Course:
The 10-Step Method for
Corrective Action - Part Two**

4:30 – 6 p.m.
Exhibit Floor Reception

6 – 7 p.m.
**Future Leaders of
Metalcasting Reception**
(RSVP required)

6 – 9 p.m.
AFS Alumni Dinner
(AFS Alumni only. Ticket required)

Thursday, April 27

8 – 10:15 a.m.
**Technical &
Management Sessions**

8 – 10:15 a.m.
**AFS Institute Course:
Improving the
Effectiveness of
Visual Inspection**

9 a.m. – 12 p.m.
Exhibits Open

9 a.m.
**Exhibit Floor
Continental Breakfast**

10:30 a.m. – Noon
The Great Debate
A lighthearted “roast”-style debate
on the merits and demerits of additive
manufacturing, casting, and forging.

Schedule is subject to change.

AFS Institute Courses

From the leader in metalcasting education comes select courses for manufacturing professionals. The AFS Institute offers several immersive classes at **Metalcasting Congress**, included free with the **Education & Knowledge Transfer Pass**.



Tuesday, April 25

8 – 10:15 a.m.
**Metalcasting Process Basics
- Part One**

Patrick Kluesner
*Sr. Project Engineer,
Grede Southfield*

1:30 – 4:45 p.m.
**Metalcasting Process Basics
- Part Two**

Patrick Kluesner
*Sr. Project Engineer,
Grede Southfield*

Wednesday, April 26

8 – 10:15 a.m.
**The 10-Step Method for
Corrective Action -
Part One**

Patrick Kluesner
*Sr. Project Engineer,
Grede Southfield*

1:30 – 4:45 p.m.
**The 10-Step Method for
Corrective Action -
Part Two**

Patrick Kluesner
*Sr. Project Engineer,
Grede Southfield*

Thursday, April 27

8 – 10:15 a.m.
**Improving the
Effectiveness of
Visual Inspection**

Ted Schorn
*Vice President Quality & Tech,
Enkei America Inc.*

Schedule is subject to change.

Exhibit at Metalcasting Congress



Feature your business at Metalcasting Congress 2023

Metalcasting Congress 2023 will be the year's best business development opportunity. A very limited number of exhibits for suppliers and metalcasters remain available, but capacity is strictly capped – act quickly to guarantee space! Visit metalcastingcongress.org for contracts, floorplans, exhibitor lists, sponsorship opportunities, and more.

Casting Source Theater Schedule

The Casting Designers & Buyers track at Metalcasting Congress provides hard-to-find training for engineers, supply chain pros, and OEM representatives. Led by experts in their fields, these sessions are included with the Exhibits Pass.

Wednesday, April 26

9:15 – 9:45 a.m.
**From the Forthcoming
Publication: Equipping
Engineering to be Effective**
Ted Schorn
*Vice President Quality & Tech,
Enkei America Inc.*

11:45 a.m. – 12:45 p.m.
Student Technical Research Contest

12:45 – 1:15 p.m.
**Case Study from the 2022 Casting of the
Year Winner: Waupaca Foundry**
Robert Guillaume
*Tooling Engineer,
Waupaca Foundry*

Tim Thill
*Tooling Engineer
Waupaca Foundry*
Clint Waninger
*Tooling Engineer,
Waupaca Foundry*

1:15 – 1:45 p.m.
Things to Consider When Reshoring
Tom Kayser
*Sales and Marketing Manager,
Osco Industries*

1:45 – 2:15 p.m.
**Using the AFS Casting Alloy Data Search
for Casting Design**
Jiten Shah
President, PDA, LLC

Thursday, April 27

9:15 – 9:45 a.m.
Tensile Bar Castings
Mark White
*Technical Director - Aerospace
& Medical Components,
Impro Industries*

Schedule is subject to change.



Keynote & Hoyt Lecture Speakers



Tuesday, April 25, 10:30 – 11:30 a.m.

Fathers, Baseball and Field of Dreams

Dwier Brown
Actor, author, and inspirational speaker

Dwier Brown appeared in one of the most popular movies of all time, *Field of Dreams*, as the father of Kevin Costner’s character. Although he has appeared in scores of films, television shows, and stage productions, including *The Thorn Birds*, *ER*, *Ally McBeal*, and *Murder: She Wrote*, Dwier is still best known for his inspirational “Wanna Have a Catch” scene as Ray Kinsella in that film. Poignant stories from viewers of how seeing the movie changed their own lives, and their relationship with their own father, led Dwier to write the moving memoir, *Build It and They Will Come: Fathers, Fate and Field of Dreams*. He also co-owns the Baseball Hall of Dreams in Dyersville, Iowa, not far from where the film was shot. Dwier will bring his inspirational message to the **American Foundry Society** audience on the first morning of **Metalcasting Congress**.



Wednesday, April 26, 10:30 – 11:30 a.m.

Innovate or Die

John R. “Chip” Keough
*Chairman of LightSpeed Concepts Inc.,
President of Keotech Inc.*

When all inputs are included, energy is over half of the cost of manufactured goods. All metal components start as castings. Metalcasting is the lowest energy, most direct manufacturing line from metallic ores to metal products. The metalcasting industry is the largest recycling body on the planet. However, the metalcasting industry is slow to develop and deploy new products and methods. With Industry 4.0 upon us, we must “Innovate or Die.”

A pioneering metalcasting entrepreneur and dedicated mentor, Hoyt Lecturer John “Chip” Keough is chairman of LightSpeed Concepts Inc. and president of Keotech Inc. (Albion, Michigan). His other roles include serving as an adjunct professor to University of Michigan’s Materials Science and Engineering Department. Some of Keough’s accolades include the 2005 AFS Award of Scientific Merit, 2010 China Foundry Association Award of Merit, and 2014 Foundry Educational Foundation E. J. Walsh Award. In 2018, he received the AFS Pangborn Gold Medal, the society’s highest honor.

The Hoyt Memorial Lecture is one of the industry’s most prestigious annual addresses. It has been a highlight of **Metalcasting Congress** since 1938.



Thursday, April 27, 10:30 a.m. – Noon

The Great Debate: Additive Manufacturing v. Castings v. Forgings

It’s the ultimate question in manufacturing: Which process is best when it comes to making metal components? Metalcasting Congress is bringing together experts from the casting, forging, and additive realms to try to settle this argument once and for all in “The Great Debate.” Part informative presentation, part debate, part lighthearted roast, each process will be represented by two experts who will speak on behalf of their respective industries, highlighting their merits (and their opponents’ demerits) to determine the best of the best.

- | | |
|--|--|
| Moderator:
Vasko Popovski
<i>Ransom & Randolph</i> | Castings:
Randy Oehrlein
<i>Carley Foundry Inc.</i>
Charles Monroe
<i>The University of Alabama</i> |
| Additive Manufacturing:
John Wilczynski
<i>America Makes- National Additive Manufacturing Innovation Institution</i>
Richard Huff
<i>ASTM International</i> | Forgings:
Bud Kinney
<i>Retired from IMT Corporation</i>
Pat Burke
<i>Whitcraft Group</i> |

Thank you to our sponsors

Platinum Sponsors:



Gold Sponsors:



Register Early & Save!

Experience **Metalcasting Congress** two ways:
Education & Knowledge Transfer or Exhibits passes

To take part in everything **Metalcasting Congress** has to offer, including every technical and management session, all AFS Institute courses, keynotes, the Hoyt Memorial Lecture, and the exhibit floor, opt for the all-inclusive **Education & Knowledge Transfer Pass**. If your plan is to view the exhibits plus keynotes and the Hoyt Memorial Lecture only, the **Exhibits Pass** is right for you.

	Exhibits Pass	Education & Knowledge Transfer Pass
Exhibit Floor	•	•
Keynote Speakers	•	•
Hoyt Memorial Lecture	•	•
Cast in North America	•	•
Casting Designers and Buyers Track	•	•
AFS Institute Courses		•
Technical Sessions		•
Management Sessions		•

Significant discounts are available for American Foundry Society members and those who register early. Current student members of AFS receive free admission. You can register online at **metalcastingcongress.org**.

To become a member of AFS, visit **www.afsinc.org/individual-membership** or contact AFS Business Development Manager **Kim Farrugia** at **kfarrugia@afsinc.org** or **1-734-308-1171**.

See the registration form on next page for pricing.

Special events, including the Volunteer Leadership Luncheon and Annual Banquet, require a special ticket offered for purchase at registration. Pricing, details, and sign-up are on the back of the registration form.

Lodging & Travel

AFS has secured special rates for room blocks at several hotels. The host hotel is Hilton Cleveland Downtown, 100 Lakeside Avenue East, Cleveland, OH. Visit **metalcastingcongress.org** for a full list of event hotels.

For more information on housing and airfare, go to **metalcastingcongress.org**.

Connect with Us

The **Metalcasting Congress 2023 App** gives exhibitors and attendees a way to stay connected. The app includes a complete listing of all speakers, searchable directory of all sessions and exhibitors, viewable floor map and much more! Look for the app in April 2023!

Share your experiences with us on social media or keep up to date with the latest developments at **metalcastingcongress.org**.



April 25-27, 2023 | Cleveland, OH

METALCASTING CONGRESS

Mail registration form to:
Metalcasting Congress 2023
American Foundry Society
1695 N. Penny Ln.
Schaumburg, IL 60173
- or -
Register online at:
metalcastingcongress.org
- or -
Fax to:
847-824-7848

Name	Title	Member ID#	
Company		Address	
City	State/Province	Zip/Postal Code	Country
Telephone		E-mail address	
Spouse's Name (if attending)			

Metalcasting Congress 2023 Registration	Early Registration	Standard Registration	Onsite Registration
	Through Feb. 15, 2023	Feb. 16 – April 24, 2023	April 25 – 27, 2023
Members			
Exhibits Pass	\$75	\$85	\$95
Education & Knowledge Transfer Pass	\$540	\$560	\$625
Non-Members			
Exhibits Pass	\$170	\$180	\$190
Education & Knowledge Transfer Pass	\$685	\$725	\$800
Spouse/Domestic Partner	\$40	\$40	\$40

☐ Your email address will be used to communicate all registration information and will also be provided to exhibiting companies. **Please check here if you do not wish to have your email address included in the post-show attendance file provided to exhibiting companies.**

Attention Students and Honorary Members:

☐ **STUDENTS**
Registration for full-time North American college students is complimentary. Please provide a copy of a valid student ID with your registration form and check here.

☐ **HONORARY**
Honorary members receive complimentary registration. Please check here.

Register For:

Members:

- ☐ Exhibits Pass
☐ Education & Knowledge Transfer Pass

Non-Members:

- ☐ Exhibits Pass
☐ Education & Knowledge Transfer Pass

Spouse/Domestic Partner:

- ☐ Spouse/Domestic Partner Registration

Registration Total

Special Events* Total

Final Total

Are you attending the Exhibit Floor Reception on Wednesday, April 26th?

☐ Yes ☐ No

Are you attending the Exhibit Floor Continental Breakfast on Thursday, April 27?

☐ Yes ☐ No

Payment Must Accompany Registration (US Dollars Only)

☐ Check (Payable to American Foundry Society) ☐ American Express® ☐ MasterCard® ☐ Visa®

Credit Card Account Number

Exp Date

CVC (Security Code)

Cardholder's Signature (Required for Processing)

Cardholder's Name (Please Print)

**See backside of form for Special Events tickets, pricing, and descriptions.*

No one under 16 is allowed on the show floor, no cameras are permitted.

Cancellation/Substitution Policy— Cancellations **must be received in writing by March 31, 2023**. Refunds on registration fees will be subject to a \$25 administration fee. Refunds on Special Event tickets will not be subject to the administration fee but must also be in received writing by **March 31, 2023**. There will be **NO REFUNDS after March 31, 2023**. Substitutions will be accepted at any time. Send cancellation requests to **registration@metalcastingcongress.org** or via fax to **847-824-7848**.

Special Event Tickets

	Quantity	Fees
Volunteer Leadership Awards Luncheon \$70 (Tuesday, April 25 11:45 a.m.)		
Annual Banquet \$125 (Tuesday, April 25 Cashless bar reception 6 p.m. Banquet 7 p.m.)		
Alumni Dinner at the Rock & Roll Hall of Fame \$125 (Wednesday, April 26 6 p.m.) Must be AFS Alumni to attend		
	Total	

Special Event Descriptions

Volunteer Leadership Awards Luncheon
Tuesday, April 25 | 11:45 a.m. | \$70

Join us for a fun, fast-paced awards luncheon, which combines the former Division Recognition Luncheon and President’s Luncheon & Annual Business Meeting. Catch up with friends while AFS officers welcome four new board members. The AFS Technical and Management Division chairs will also present key national and divisional awards including the presentation of the Scientific Merit and Service Citation awards.

Scientific Merit Award Winners:
Dr. Steve Dawson (Sintercast)
Rafael Gallo (Pyrotek Inc.)

Service Citation Award Winner:
Kelley J. Kerns (HA International)

Annual Banquet
Tuesday, April 25 | Cashless bar reception 6 p.m.
Banquet 7 p.m. | \$125

Join us for business networking, the presentation of the highest AFS honor, the Gold Medal. The cashless bar opens at 6 p.m. The awards presentation and banquet start at 7 p.m. The President’s After Party starts at 9 p.m. Recommended dress is business formal.

Gold Medal Winners:
Gregory V. Miskinis (Waupaca Foundry, retired)
Thomas J. Slavin (Slavin OSH Group LLC)

Women in Metalcasting Breakfast
Wednesday, April 26 | 7:30 a.m. | RSVP required

This event is open to members of Women in Metalcasting. It includes a continental breakfast and networking with people who work in all facets of the metalcasting industry. For more information or to RSVP for this event, contact the Women in Metalcasting’s liaison **Katie Matticks** at **kmatticks@afsinc.org**.

Future Leaders of Metalcasting Reception
Wednesday, April 26 | 6 p.m.

Join the AFS Future Leaders of Metalcasting for an reception full of networking and fun. All attendees are welcome to come on Wednesday April 26th in Room 16. For more information, contact Future Leaders of Metalcasting’s liaison Cathy Potts at **cpotts@afsinc.org**.

Alumni Dinner at the Rock & Roll Hall of Fame
Wednesday, April 26 | 6 p.m. | \$125

Alumni will experience the Rock & Roll Hall of Fame, touring the special exhibits and permanent installations, while enjoying views of Lake Erie, FirstEnergy Stadium, and the Steamship William G. Mather. *Must be AFS Alumni to attend.*

About Our Host City: CLEVELAND

..... AMERICA’S NORTH COAST

Nestled along Lake Erie’s southern shore, Cleveland is the second largest city in Ohio. Attracting over 18 million visitors annually, Cleveland has become a worldwide destination. Huntington Convention Center of Cleveland is hosting **Metalcasting Congress 2023**, providing over 410,000 square feet of prime meeting and event space. This state-of-the-art space is conveniently located within minutes of exceptional restaurants, art galleries, theaters, shopping, and professional sports venues. The convention center is also just 25 minutes from Cleveland Hopkins International Airport.



ROCK & ROLL HALL OF FAME

Nowhere loves rock n’ roll quite like Cleveland – and nowhere in Cleveland celebrates the legacy of America’s most popular music like the Rock & Roll Hall of Fame! Spanning seven floors, four theaters, and 150,000 square feet, this world-famous museum gives visitors a front-row seat to more than 30 years of induction performance highlights at its all-new Power of Rock Experience.



CLEVELAND MUSEUM OF ART

One of the comprehensive art collections in the nation can be found at the Cleveland Museum of Art. Featuring more than 61,000 objects spanning 6,000 years of artistic heritage, this museum is known as an important international forum for exhibitions, scholarship, and performances. The Cleveland Museum of Art is free to all visitors.



WEST SIDE MARKET

Built in 1912, the West Side Market has been serving the people of Cleveland for more than a century. Its classic architecture, dedicated vendors, and rich history have made it one of the best public markets in the United States.



A CHRISTMAS STORY HOUSE

A Christmas Story House, where the beloved holiday classic was filmed, is open year-round to the public. It’s across the street from the official A Christmas Story House Museum, which features original props, costumes, and memorabilia from the film, as well as hundreds of rare behind-the-scenes photos.

Abridged Show Schedule

Tuesday, April 25, 2023

7 a.m.

Room: 16 Author Chair Breakfast

8 – 9 a.m.

Aluminum & Light Metals Room: 22 Session Chair: Girish Ramdasi Navistar Inc., Aurora, IL	Bond Formation between Aluminum-based Metal Matrix Composites and Aluminum Alloys in Compound Castings (23-052) Effect of Cooling Rate on Microstructure and Physical Properties of Hypereutectic Al-Ce Alloys (23-048)	<i>Luke Osvatic, Pablo Zertuche-Flores, Mason Porter Steffes, Kaustubh Rane, Swaroop Behera, Benjamin Church, and Pradeep Rohatgi, University of Wisconsin-Milwaukee, Milwaukee, WI; David Weiss, Vision Materials, Manitowoc, WI</i> <i>Swaroop Behera, Jenna Van Hoogstraten, Kaustubh Rane, and Pradeep Rohatgi, University of Wisconsin-Milwaukee, Milwaukee, WI; David Weiss, Vision Materials, Manitowoc, WI</i>
Cast Iron Room: 23 Session Chair: David Gilson SinterCast Inc., Naperville, IL	Honorary Lecture: Academia - The Inoculant of the Cast Iron Industry Future Structure (23-123)	<i>Jingjing Qing and Mingzhi Xu, Georgia Southern University, Statesboro, GA</i>
Engineering & Smart Manufacturing Room: 21 Session Chair: Nick Fox John Deere Foundry Waterloo, Abingdon, IL	Panel: Energy, Carbon and Technology: The Connection in Foundries (23-088)	<i>Michael Stowe, Advanced Energy, Raleigh, NC; Bob Baird, General Motors, Carmel, IN; Jeff Krause, HA International LLC, Westmont, IL; Eric Nelson, Dotson Iron Castings, Mankato, MN; Adriano Lima, Magna, Ontario, Canada; Bryant Esch, Waupaca Foundry Inc., Waupaca, WI</i>
Molding Methods & Materials Room: 24 Session Chair: Scott Giese University of Northern Iowa, Cedar Falls, IA Victor Okhuysen California State Poly University, Pomona, CA	Reducing Purging Times for a Turbo Volute Core, Optimizing Quality and Tool Life (23-008) Permeability Pinholes and Porosity (23-099)	<i>Mauricio Velazquez Blandino, Magma Foundry Technologies Inc., Schaumburg, IL</i> <i>Charles Bates, Alchemcast, Auburn, AL</i>

*Schedule subject to change.

8 – 10:15 a.m.

AFS Institute Course Metalcasting Process Basics - Part One (23-115) Patrick Kluesner, Grede- Southfield, Southfield, MI
Room: 19

8:30 – 9:30 a.m.

Room: 26ABC SFSA Cast in Steel Competition

9:15 – 10:15 a.m.

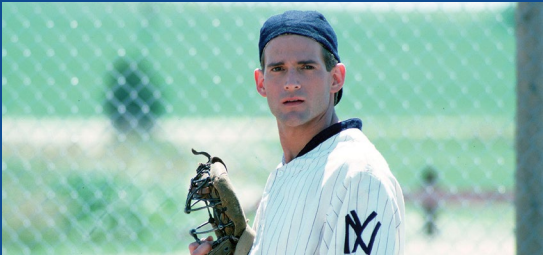
Aluminum & Light Metals Room: 22 Session Chair: Steve Midson Colorado School of Mines, Golden, CO	Microstructure and Mechanical Properties of Cast Aluminum Pistons (23-050) Methodology to Remove or Scale Back the Solution Treatment in the Thermal Processing of the 319-Type Alloy Without Changing Material Properties (23-021)	<i>Andy Wang, Qigui Wang, Dale Gerard, John Yang, and Daniel Wilson, General Motors, Pontiac, MI</i> <i>Robert Mackay and Glenn Byczynski, Nemak US/CAN Business Unit, Windsor, Ontario, Canada</i>
Melting Methods & Materials Room: 21 Session Chair: Mike Mutton Larpen Metallurgical Service, Ludington, MI	Panel: Channel Induction Furnace Refractory (23-132A): Ceramic Loop (23-132C): Moisture in Refractories (23-132D):	<i>Tim Hoyt, Allied Mineral Products, Inc., Columbus, OH</i> <i>Phil Geers, Blasch, Precision Ceramics Inc., Menands, NY</i> <i>Pat Leper, Saveway USA Corp., North Canton, OH</i>
Molding Methods & Materials Room: 24 Session Chair: Brian Rachwitz EJ, East Jordan, MI Greg Jarski American Colloid Co., Iron Mountain, MI	Analysis of Disc-Shape Chemically Bonded Sand Specimens for Process Control in a Working Foundry (23-063) Digital Measurements of Particle Size, Distribution, Shape, and Surface Area from Foundry Sands (23-064)	<i>Sam Ramrattan and Lee Wells, Western Michigan University, Kalamazoo, MI; Alberto Montenegro and Cyntia Morais, AMV, Madrid</i> <i>Sam Ramrattan, Western Michigan University, Kalamazoo, MI; David Myers, Sonny Singh, Gurdeep Singh, and Praveen Kumar Devaraj, Singh Automation, Portage, MI</i>

*Schedule subject to change.

10:30 – 11:30 a.m.

Fathers, Baseball
and Field of Dreams (23-114)

Dwier Brown
Actor, author, and inspirational speaker



11:45 a.m. – 1:15 p.m.

Room: 25BC
Volunteer Leadership
Awards Luncheon

1:30 – 3 p.m.

Cast Iron Room: 23 Session Chair: Eric Nelson <i>Dotson Iron Castings, Mankato, MN</i> Kramer Pursell <i>Metal Technologies Auburn LLC, Columbia City, IN</i>	Small, In-Line Passenger Vehicle Engines- Cast Iron with the Same Weight as Aluminum (23-071) <i>André Ferrarese and Carlos Cabezas, Tupy S/A, Joinville, Brazil; Steve Dawson, SinterCast Ltd., Sunninghill Berkshire, United Kingdom</i>
	Real World Results from Full Process Optimization: How AI Combined with Application Knowledge are Driving Scrap Reduction and Sustainability in Cast Iron Foundries (23-091) <i>Derek Yesmunt, DISA Industries Inc., LaGrange, GA</i>
	Examples of Chunky Graphite Formation in Production of Ductile Iron Castings and Effective Countermeasures (23-055) <i>Haruki Itofuji, Adstefan Casting Solution Center, Yamaguchi, Japan; Yutaka Miyamoto, Ube Steel Co. Ltd., Yamaguchi, Japan; Keita Iwakado, Ohtachuzousyo Co. Ltd., Hiroshima, Japan</i>

Copper Room: 20 Session Chair: Jacob Johnson <i>Foseco, Brook Park, OH</i>	Retrofit of a Manual Pouring System with an Assisted Pouring Device in a Copper Jobbing Foundry (23-051) <i>Ryan Showalter, Fresno Valves & Castings Inc., Selma, CA</i>
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Engineering & Smart Manufacturing Room: 22 Session Chair: Jim Wenson <i>Sinto America, Grand Ledge, MI</i>	Failure Analysis of Large Castings Used in Mineral Ore Processing (23-009) <i>Daniel DeMiglio, ME Global, Minneapolis, MN</i>
	Obtaining Perfect Critical Automotive Safety Components through Behavioral Monitoring and Simulation using Digital Twins (23-012) <i>Javier Nieves, PhD, Argoitz Zabala, and Benat Bravo, Azterlan, Durango, Spain</i>

*Schedule subject to change.

How Mfg. 4.0 Can Help Foundry Industry Provide Supply Chain Resiliency (23-015)

Jerry Thiel and Nathaniel Bryant, University of Northern Iowa, Cedar Falls, IA; Rich Lonardo, Youngstown Business Incubator, Youngstown, OH

Melting Methods & Materials

Room: 21
Session Chair:

Lucas Dix
*ProFound Alloys LLC,
Birmingham, AL*

Panel: Coreless Induction Furnace Induction Furnace Maintenance (23-133A)

Mark Kohler, AJAX Tocco Magnethermic Corp., North Canton, OH

Advancements in Computer and PLC Controls Included Cloud Based Systems (23-133B)

Robert Keshecki, Inductotherm Corp., Rancocas, NJ

New Sintering Process (23-133C)

Dave Lazor, AJAX Tocco Magnethermic Corp., North Canton, OH; Ben Hunsicker, Allied Mineral Products, Inc., Columbus, OH

Steel

Room: 24
Session Chair:

Dr. Robert Tuttle
*Western Michigan University,
Kalamazoo, MI*

Cast a High-Performance Stainless-Steel Sword using Machinable Mold Media (23-059)

Sean M. Derrick and Sam Ramrattan, Western Michigan University, Kalamazoo, MI

Growth Kinetics and Development of the Solid Liquid Interface in Low Carbon and High Alloy Steel Castings Enabled by Confocal Microscopy (23-094)

Katie Kiser, Laura Bartlett, Viraj Athavale, and Mario Buchely, Missouri University of Science & Technology, Rolla, MO

In-depth Analysis of Steel Cooling Curves (23-066)

Dr. Robert Tuttle, Western Michigan University, Kalamazoo, MI

1:30 – 4:45 p.m.

AFS Institute Course Room: 19	Metalcasting Process Basics - Part Two (23-116) <i>Patrick Kluesner, Grede- Southfield, Southfield, MI</i>
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3:15 – 4:45 p.m.

Aluminum & Light Metals Room: 22 Session Chair: Adam Kopper <i>Mercury Marine, Fond du Lac, WI</i>	Impact of Temperature on Cast Iron Chills on Tensile Properties in Aluminum Precisions Sand Casting Process (23-020) <i>Robert Mackay and Glenn Byczynski, Nemak US/CAN Business Unit, Ontario, Canada</i>
	Ruby Anniversary Paper: Theoretical and Practical Aspects of the Modification of Al-Si Alloys (23-140) <i>Geoffrey Sigworth, Harrisonburg, VA</i>

Government Affairs Room: 20 Session Chair: Eric Meyers <i>Oil City Iron Works, Inc., Corsicana, TX</i>	Panel: Hot Topics - Top 5 Issues Facing U.S. Metalcasters from Washington, D.C. in 2023 (23-137) <i>Eric Meyers, Oil City Iron Works, Inc., Corsicana, TX; Stephanie Salmon, AFS Washington Office, Washington D.C.</i>
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*Schedule subject to change.

Lost Foam Room: 23 Session Chair: Jacob Belke <i>Mercury Marine, Fond du Lac, WI</i>	An Investigation of the Viability of Printed Lost Foam Tooling AFS Project 17-18 #03 (23-025) An Investigation into Producing Lost Foam Stainless & Steel in ASTM A351 Grade CF8M (23-026) Loss of Kinetic Zone Pressure Causes Mold Wall Collapse During Filling Across a Glue Joint in Lost Foam Casting (23-027)	<i>Marshall Miller, 3D Systems, Rock Spring, GA</i> <i>Marshall Miller, 3D Systems, Rock Spring, GA</i> <i>Keaton Allen, Missouri University of Science and Technology, Bartlesville, OK; Jacob Belke, Mercury Marine, Oshkosh, WI</i>
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Melting Methods & Materials Room: 21 Session Chair: Alex Croll <i>Waupaca Foundry, Inc., Tell City, IN</i>	Cupola Computer Simulation Reconciliation and Analysis – CRI/ CSR Cupola Coke Trials Update on AFS Research Project (22-135)	<i>Dave Kasun, Kuttner North America, Port Washington, WI</i> <i>Steve Hay, Hay Melting Solutions LLC, South Lyon, MI; Bruce Blatzer, Cary, NC</i>
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Molding Methods & Materials Room: 24 Session Chair: Pete Gravunder <i>Badger Mining Corp, Berlin, WI</i> Mitchell Patterson <i>HA International LLC, Cedar Falls, IA</i>	Panel: That’s Green Sand Molding (23-090)	<i>Tom Arenholz, John Deere Waterloo Works, Waterloo, IA (23-090a)</i> <i>Brian Rachwitz, EJ, East Jordan, MI (23-090b)</i> <i>Al Jacobson, American Colloid Co., Hoffman Estates, IL (23-090c)</i> <i>Michelle Ring, Norican Group (Simpson Technologies), Carmel, IN (23-090d)</i> <i>Chuck Gerth, Amsted Rail, Granite City, IL (23-090e)</i>
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6 – 7 p.m.

Hilton Hotel Center Street BC	Annual Banquet Reception <i>(Cashless bar)</i>
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7 – 9 p.m.

Hilton Hotel - Hope E Ballroom	Annual Banquet <i>(Ticket required)</i>
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9 p.m.

Hilton Hotel - Hope E Ballroom	President’s After-Party <i>(Cashless bar)</i>
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*Schedule subject to change.

Wednesday, April 26, 2023

7 a.m.

Room: 16	Author Chair Breakfast
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7:30 – 8:30 a.m.

Room: 16	Women in Metalcasting Breakfast Thank you to our sponsors:
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8 – 9 a.m.

Aluminum & Light Metals Room: 22 Session Chair: Jose Macedo <i>General Electric Co., Cincinnati, OH</i>	Development of a New Al-Fe-Ni Alloy for Electric Vehicles Application (23-035) Role of Mn, Cr and Sr in the Formation of Fe-containing Intermetallic Phases in Secondary Aluminum Alloys (23-038)	<i>Lei Pan, Francis Breton, and Jerome Fourmann, Rio Tinto, Quebec, Canada</i> <i>Nagasivamuni Balasubramani, PhD; Alan Luo; Michael Moodispaw; Gabriel Garcia, The Ohio State University, Columbus, OH</i>
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Cast Iron Room: 23 Session Chair: Mike Riabov <i>Elkem Silicon Products, Appleton, WI</i> Leonard Winardi <i>Charlotte Pipe & Foundry Co., Charlotte, NC</i>	Welding of Gray and Ductile Iron (23-011) The Influence of Blind Riser Geometry on Feeding Behavior in Cast Iron (23-043)	<i>Trevor Beach, Betz Industries, Grand Rapids, MI</i> <i>Konstantin Nikolov, Magma Foundry Technologies Inc., Schaumburg, IL</i>
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Environmental, Health & Safety Room: 24 Session Chair: Craig Schmeisser <i>Mad River Strategies LLC, New Bremen, OH</i>	Panel: EHS Hot Topics (23-128) Air Quality (23-128a): Water, Waste & Byproducts Management (23-128b): Safety & Health (23-128c):	<i>Jeet Radia, McWane, Inc., Birmingham, AL</i> <i>Bryant Esch, Waupaca Foundry Inc., Waupaca, WI</i> <i>Brent Charlton, Metal Technologies, Inc., Auburn, IN</i>
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*Schedule subject to change.

Melting & High Entropy Alloy Session

Room: 21
Session Chair:
Pete Satre
Allied Mineral Products, LLC,
Columbus, OH

Casting, Forging and Hot Rolling of High-entropy Alloy Ingots (23-010)

Delin Li, CanmetMATERIALS, Ontario, Canada

8 – 10:15 a.m.

AFS Institute Course

The 10-Step Method for Corrective Action - Part One (23-117)

Patrick Kluesner, Grede- Southfield, Southfield, MI

Room: 19

9 a.m. – 6 p.m.

Hall C

Exhibits Open

9:15 – 10:15 a.m.

Additive Manufacturing

Effect of Resin Viscosity on the Physical Characteristics of 3D Printed Sand (23-006)

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

Room: 21
Session Chair:
Dave Rittmeyer
Matthews International Corporation, Pittsburgh, PA

Considering the Effects of Thermo-Mechanical Anisotropy in 3D Printed Silica Sand Molds (23-045)

Dr. Sam Ramrattan, Dr. Robert Tuttle, Dr. Lee Wells, and Juan Wei Foo, Western Michigan University, Kalamazoo, MI

Aluminum & Light Metals

Novel Experimental Method for Metal Flow Analysis using Open Molds for Sand Castings (23-127)

Guha Manogharan and Philip King, Pennsylvania State University, University Park, PA

Room: 22
Session Chair:
Anthony Lindert
Oshkosh Corporation, Oshkosh, WI

Copper

Developing the Natural Filling Technique (23-032)

Evan Letourneau, MAGMA Foundry Technologies, Inc., Schaumburg, IL

Room: 23
Session Chair:
Buddy Barnhill
Lee Brass Co., Anniston, AL

*Schedule subject to change.

Marketing

The Integrated Casting Order Network (ICON) (23-083)

Sheila Rayburn, Non-Ferrous Founders Society, Sturgis, MI

Room: 23
Session Chair:
Cara Lynch
Inductotherm Corp., Rancocas, NJ

Molding Methods & Materials

An Assessment of South African Chromite Sand Crushing Ratio (23-016)

Jonathan Kabasele and Kasongo Nyembwe, University of Johannesburg, Johannesburg, South Africa

Room: 24
Session Chair:
Russell Hector
ASK Chemicals, Dublin, OH

Chromite Sand as a Replacement for Zircon and Zircon/Silica Sand in Shell Applications (23-013)

Kelley Kerns, HA-International, LLC, Westmont, IL; Robert Steele, FACT, Ponte Vedra Beach, FL; Patricia LaFay and Victor LaFay, Common Sense Applications, Cincinnati, OH

9:30 a.m. – 5:30 p.m.

Hall C
AFS HUB

Foundry-in-a-Box Demonstrations

Thank you to our sponsor:



9:15 – 9:45 a.m.

Specialty Engineering & Smart Manufacturing Division Session

From the Forthcoming Publication: Equipping Engineering to be Effective (23-106)

Ted Schorn, Enkei America, Inc., Columbus, IN

Room: Casting Source Theater
Session Chair:
Shannon Wetzel
American Foundry Society, Inc., Schaumburg, IL

10:30 – 11:30 a.m.

Hoyt Memorial Lecture

Innovate or Die (23-103)

Room: 26ABC

John Keough
Joyworks LLC, Ann Arbor, MI



*Schedule subject to change.

11:30 a.m. – 1 p.m.

IL Venetian
The Piccolo Room

Past President’s Luncheon

11:45 a.m. – 12:45 p.m.

Room: Casting
Source Theater

IJMC-FEF Student
Research Competition

12:45 – 1:15 p.m.

Casting Designers and Buyers

Room: Casting Source Theater
Session Chair:
Shannon Wetzel
American Foundry Society, Inc., Schaumburg, IL

Case Study from the 2022 Casting of the Year Winner: Waupaca Foundry (23-120)

Robert Guillaume,Tim Thill, Clint Waninger, Waupaca Foundry Inc., Tell City, IN

1:15 – 1:45 p.m.

Casting Designers and Buyers

Room: Casting Source Theater
Session Chair:
Shannon Wetzel
American Foundry Society, Inc., Schaumburg, IL

Evaluating When to Reshore (23-121)

Tom Kayser, Osco Industries, Portsmouth, OH

1:30 – 3 p.m.

Additive Manufacturing

Room: 21
Session Chair:
Kirk Rogers
M&P Gravity Works LLC, Poland, OH

Panel: Industry Utilization- What has Changed in the Last 8 Years (23-129)

Dave Rittmeyer,Matthews International Corporation, Pittsburgh, PA; Brandon Lamoncha, Humtown Products, Columbiana, OH; Rich Lonardo, Youngstown Business Incubator, Youngstown, OH

Panel: Lions, Tigers and Bears- Where Does Direct AM Fit into Foundry Industry vs. Sand Printing & Robotics and Automation (23-131)

Mark Barfoot, Lincoln Electric, Columbus, OH; Mike Shaffer, Addman Engineering, Bonita Springs, FL; Jason Walker, The Ohio State University, Columbus, OH

Environmental, Health & Safety

Room: 23
Session Chair:
Brent Charlton
Metal Technologies Inc., Auburn, IN

Emission Reduction Potentials in High-Volume Applications (23-095)

Joseph Muniza, BS, ASK Chemicals LLC, Dublin, OH

Emission Control System Design: Understanding the Basics (23-024)

Brian Bakowski, SLR Consulting, Pittsburgh, PA

Engineering & Smart Manufacturing

Room: 24
Session Chair:
Doug Starr
Saudi Mechanical Industries, Strongsville, OH

Improving Manufacturing Applications of Machine Learning by Understanding Defect Classification and the Critical Error Threshold (23-087)

David Blondheim, Jr., Mercury Marine, Fond du Lac, WI

Don’t Leave Cyber Security to your IT Manager: Combating Cyber Threats Facing Foundries (23-019)

Dr. Sudesh Kannan, Co-Power LLC, Schaumburg, IL; Ernest Kubick and Jeffrey Jones, MetalTek International, Waukesha, WI

Women in Metalcasting

Room: 24
Session Chair:
Lizeth Medina-Balliet
Neenah Foundry Co., Neenah, WI

Panel: Fostering a Culture of Innovation or Drive to Growth (23-125)

Emily Bosovich, Kohler Co., Kohler, WI; Garret Davis, American Colloid Co., Chesapeake, VA; Sarah Jordan, Skuld LLC, London, OH; Jay Morrison, Carpenter Brothers Inc., Mequon, WI

Thank you to our sponsors:



1:30 – 4:45 p.m.

AFS Institute Course

Room: 19

The 10-Step Method for Corrective Action - Part Two (23-118)

Patrick Kluesner, Grede- Southfield, Southfield, MI

1:45 – 2:15 p.m.

Casting Designers and Buyers

Room: Casting Source Theater
Session Chair:
Shannon Wetzel
American Foundry Society, Inc., Schaumburg, IL

Using the AFS Casting Alloy Data Search for Casting Design (23-080)

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

*Schedule subject to change.

*Schedule subject to change.

Room: 21
Session Chair:
Kirk Keithly
ExOne, Troy, MI

Sean M. Derrick and Dr. Sam Ramrattan, Western Michigan University, Kalamazoo, MI

Eric MacDonald, University of Texas El Paso, El Paso, TX; Jerry Thiel and Nathaniel Bryant, University of Northern Iowa, Cedar Falls, IA

Room: 23
Session Chair:
Brad Steinkamp
Dura-Bar, Woodstock, IL;
Logan Bader
Caterpillar Inc., Jackson, MO

Gorka Alonso, AZTERLAN, Basque Research and Technology Alliance, BRTA, Durango, Spain; Beñat Bravo, Azterlan, Basque Research and Technology Alliance (BRTA), Durango, Spain; Dr. Doru Stefanescu, The Ohio State University and University of Alabama, Dublin, OH; Ramon Suarez, Veigalan Estudio 2010, Durango, Spain

Roy Stevenson, MAGMA Foundry Technologies,
Schaumburg, IL

Room: 20
Session Chair:
Tom Bye
Dotson Iron Casting,
Mankato, MN

Michael Lenahan, Badger Mining Corp., Berlin, WI;
Angela Dine Schmeisser, St. Mary's Foundry Inc., Saint
Marys, OH; TJ Costello, Charlotte Pipe & Foundry Co.,
Charlotte, NC; Scott Lakey, Lodge Mfg. Co., South
Pittsburg, TN

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Room: 22
Session Chair:
Dr. Robert Tuttle
*Western Michigan University,
Kalamazoo, MI*

Nic Tarzwell, Eagle Group Manufacturers, Muskegon, MI; Andrew Schelke, Sinto America, Grand Ledge, MI

**Schedule subject to change.*

Metalcasting Congress 2023 Pre-Show Guide | 23

James Springstead, Western Michigan University,
Kalamazoo, MI; Brian Rachwitz, EJ, East Jordan, MI;
Michelle Ring, Norican Group (Simpson Technologies),
Carmel, IN

Sairam Ravi
Atek Metal Technologies,
Cedar Falls, IA

Lee Wells and Sam Ramrattan, Western Michigan University, Kalamazoo, MI; Dave Paulsen, Furness Newburge Inc, Versailles, KY

Exhibit Floor Reception

**Future Leaders of
Metalcasting Reception**
(RSVP required)












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AFS Alumni Dinner
(AFS Alumni only. Ticket required)

Thursday, April 27, 2023

Author Chair Breakfast

Room: 23
Session Chair:
Julia Scruton
*Baker Manufacturing Co.,
Evansville, WI*

Yongxian Zhu, Gregory Keoleian, and Daniel Cooper,
University of Michigan, Ann Arbor, MI

Lost Foam	Improving Metal Flow in Lost Foam Casting Through Use of Low Thermal Degradation Hot Melt Adhesives (23-037)	Kyle Bieniewicz, Matt Reich, Nick Soraruf, Ashlyn Steer, and Paul Sanders, Michigan Technological University, Houghton, MI; Jacob Belke, Mercury Marine, Oshkosh, WI
Room: 21 Session Chair: Tedd Sheets <i>Betz Industries, Grand Rapids, MI</i>	Surface Metrology of Resin Bonded Sand and Lost Foam Castings (23-028)	Sarah Jordan, Skuld LLC, London, OH; Christopher Brown, Worcester Polytechnic Institute, Worcester, MA; Katarzyna Peta, Poznan University of Technology, Poznan, Poland

Metalcasting Research	Advances in the Production of In-Situ Nanocomposite Castings (23-097)	David Weiss, Vision Materials, Manitowoc, WI
Room: 24 Session Chair: Adam Loukus <i>Loukus Technologies Inc., Calumet, MI</i>	Role of impurities on the mechanical behavior and phase stability in Al-Ce-Ni hypoeutectic systems (23-110)	Carl Soderhjelm, Diran Apelian, and Benjamin MacDonald, ACRC, Irvine, CA; David Weiss, Vision Materials, Manitowoc, WI

8 – 10:15 a.m.

AFS Institute Course	Improving the Effectiveness of Visual Inspection (23-119)	Ted Schorn, Enkei America, Inc., Columbus, IN
Room: 19		

9 a.m. – Noon

Hall C	Exhibits Open
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9 a.m.

Hall C	Exhibit Floor Continental Breakfast
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9:15 – 9 a.m.

Additive Manufacturing	Additive Manufacturing Division Updates (23-143)	Kirk Rogers, M&P Gravity Works LLC, Poland, OH
Room: 21 Session Chair: Kirk Rogers <i>M&P Gravity Works LLC, Poland, OH</i>		

Aluminum & Light Metals	Panel: US Academic Research Infrastructure Supporting Metal Casting Industry (23-113)	Carl Soderhjelm and Diran Apelian, Advanced Casting Research Center (ACRC), Irvine, CA; Alan Luo, The Ohio State University, Columbus, OH
Room: 22 Session Chair: David Weiss <i>Vision Materials, Manitowoc, WI</i>		


*Schedule subject to change.

Metalcasting Research	Cast Metal-Ceramic Composite Lattice Structures for Lightweight, Energy Absorbing Applications (23-079)	Alan Druschitz and Manuel Umanzor, Virginia Tech, Blacksburg, VA
Room: 24 Session Chair: Mark Osborne <i>Wabtec, Haslet, TX</i>	Meta-modeling Driven Intelligent Manufacturing of Ductile Iron Sand Castings with Near Real Time Corrective Actions to Eliminate Scrap (23-081)	Jiten Shah, Product Development & Analysis LLC, Naperville, IL

9:15 – 9:45 p.m.

Casting Designers and Buyers	Tensile Bar Castings (23-074)	Mark White, Impro Industries, Palm City, CA
Room: Casting Source Theater Session Chair: Shannon Wetzel <i>American Foundry Society, Inc., Schaumburg, IL</i>		

9:30 – 11:30 a.m.

Hall C AFS HUB	Foundry-in-a-Box Demonstrations	Thank you to our sponsor: 
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10:30 a.m. – Noon

Room: 26ABC	Great Debate: Additive Manufacturing v. Castings v. Forgings (23-126)
	<div>Moderator: Vasko Popovski <i>Ransom & Randolph</i></div> <div>Additive Manufacturing: John Wilczynski <i>America Makes- National Additive Manufacturing Innovation Institution, Youngstown, OH</i></div> <div>Richard Huff <i>ASTM International, Lebanon, OH</i></div> <div>Castings: Randy Oehrlein <i>Carley Foundry Inc., Blaine, MN</i></div> <div>Charles Monroe <i>The University of Alabama, Tuscaloosa, AL</i></div> <div>Forgings: Bud Kinney <i>Retired from IMT Corporation, Cleveland, OH</i></div> <div>Pat Burke <i>Pursuit Aerospace</i></div>

Noon

Metalcasting Congress 2023 Closes

*Schedule subject to change.