



# AFS NONFERROUS FOUNDRY BULLETIN

Copper Project Wins Research Award | Nonferrous Foundry Leaders Playing Key Roles Across AFS | AFS Published Books Helping Nonferrous Foundries

## Metalcasting Courses Slated for Summer 2023

The **AFS Institute** has trained more than 90,000 foundry industry employees!

Nonferrous foundry managers and employees will find considerable value in a number of upcoming courses including those listed below:

**Gating & Riser Design 101**  
June 14 – 15 | Schaumburg, IL

**Introduction to Metalcasting**  
June 26 – 28 | Live Online via Zoom

**Design & Optimization for 3D Sand Printing plus Advanced Sensing Technologies**  
June 28 – 30 | Missouri S&T, Rolla, MO

**Casting Cost Estimating**  
July 5 – 7 | Live Online via Zoom

**Casting Design**  
July 19 – 20 | Schaumburg, IL

**Gating & Riser Design 201**  
July 27 – 28 | Schaumburg, IL

**Process Control for Engineers**  
August 3 – 4 | Schaumburg, IL

**Green Sand Molding**  
August 16 – 17 | Schaumburg, IL

**Casting Defect Analysis**  
August 23 – 24 | Schaumburg, IL

**Fundamentals of SPC & Process Capability**  
September 14 – 15 | Schaumburg, IL

Additionally, there are seven nonferrous courses available in the Institute catalog. View it at [afsinc.org/training](https://afsinc.org/training).

Class discounts are available for three or more students from the same company. Please visit [AFSinc.org/training](https://afsinc.org/training) for all of the details, or contact **Lisa Streater** at [lstreater@afsinc.org](mailto:lstreater@afsinc.org).

**Special note:** All AFS Institute courses can be presented on an In-Plant basis in your foundry. Corporate Members receive a 20 percent price advantage. Contact **Jen Christian** at [jchristian@afsinc.org](mailto:jchristian@afsinc.org) to explore these options.

## AFS Fighting for Reshoring and Fair Trade

China joined the World Trade Organization on December 11, 2001. Nobody needs to tell the people of the foundry industry that for more than 20 years now, China has systematically violated its trade agreements through subsidies, currency manipulation, intellectual property violations, and trade manipulation.

The American Foundry Society (AFS) is working with the Administration and members of Congress to continually tighten the rules against unfair foreign trade practices, crack down on meritless exceptions to Buy America policies, and ensure fair trade.

AFS also has been presenting a series of educational programs on reshoring, both for foundry leaders and OEM purchasers and designers of castings, all with the goal to build upon the growing trend of Reshoring. The Society financially supports The Reshoring Initiative, which recently announced that reshoring hit a new high in 2022. May the trend continue and accelerate!



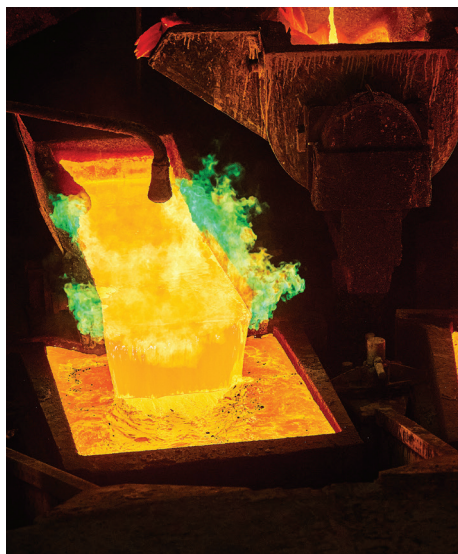
To join our fight for better public policies including fair trade, please contact AFS Washington Representative **Stephanie Salmon** at **202-452-7135** or [ssalmon@afsinc.org](mailto:ssalmon@afsinc.org), and plan to join us at the **AFS Government Affairs Fly-In in Washington** on **June 20-21**, as we come together as an industry to advance and defend the interests of America's foundries, including fair trade, permitting reform, secure energy supplies, and other key issues.

## Future Leaders to Tour Wisconsin Aluminum, Kohler

The AFS Future Leaders in Metalcasting (FLM) annual meeting will be Oct. 23-24 at the Blue Harbor Resort in Sheboygan, WI. It includes two foundry tours, a roundtable with industry peers, a skills integration workshop, and fun networking activities.

FLM is all about promoting succession planning and leadership in our industry. If your foundry does not already have key employees participating in FLM, we invite their involvement! It is open to members of AFS. Visit [AFSinc.org/conferences](https://AFSinc.org/conferences) to learn more about FLM and register for the annual meeting.

## Copper Alloy Workshop Slated for September



The anticipation is building for the **2023 AFS Copper Alloy Workshop**, presented by AFS on **September 27-28** in **Schaumburg, IL**. This workshop is tailored for copper alloy manufacturing professionals at all experience levels. You'll make the most of your two days with 15 expert-led sessions, coupled with making new friends in the industry through business networking.

Topics will include green sand systems, gating and risering, metallurgy, additive manufacturing, quality inspection, foundry safety, and – back by popular demand – a panel on casting defects. *Don't forget to ship a casting with defects or bring it with you for discussion during the defect panel.*

Seating is limited, so we encourage you to register promptly at [AFSinc.org/conferences](https://AFSinc.org/conferences). The workshop is sponsored by Federal Metal Co., Foseco, and Kramer International.

## Nonferrous Foundry Leaders Playing Key Roles Across AFS

Numerous technical and business leaders from Nonferrous foundries are once again in key leadership positions in 2023-2024 at the American Foundry Society.

### Board of Directors

AFS Board members for 2023-2024 include Kiley Eck Hayon (Eck Industries), Andy Renkey (Harmony Castings), Alan Brink (Spring City Electrical Manufacturing) and Amanda Torkelson (Alu-Bra Foundry), whose companies all produce Nonferrous castings. This year's Board President is Brad Muller (Charlotte Pipe & Foundry).

### Aluminum & Light Metals Division

**Chair:** Herb Doty (General Motors)  
**Vice-Chair:** Luke Schimmel (Fairbanks Morse)  
**Secretary:** Anthony Lindert (OshKosh)  
**Secretary-Elect:** Dan Hoefert (Eck Industries)  
**Past Chair:** Adam Loukus (Loukus Tech)

The Aluminum & Light Metals Division has an active year planned, with four research projects underway, several new research endeavors being explored, special projects, and educational programs, plus planning for the 2024 Aluminum Specialty Conference. The Division also is updating the Permanent Mold Handbook.

Membership in the Aluminum & Light Metals Division has increased recently from 70 to

75 AFS members. New members are warmly welcomed. Meetings are held on location with Zoom remote options. The fall meeting is anticipated to be held in October at Missouri S&T University, with a date to be finalized. The Division is also incorporating metalcasting student presentations into some of its meetings.

### Copper Alloys Division

**Chair:** Jim Valentine (Neptune Technology)  
**Vice Chair:** Jacob Johnson (Foseco)  
**Secretary:** Gerald Richard (Magma)  
**Chair-Elect:** Buddy Barnhill (Lee Brass)  
**Past Chair:** Brent Bowles (Lee Brass)

The Division members share expertise in copper, brass, and bronze-related casting. The Division is actively planning the Sept. 27-28 Copper Alloys Workshop in Schaumburg, IL. Contact Kim at [kperna@afsinc.org](mailto:kperna@afsinc.org) to join the Division.

Nonferrous metalcasting leaders are also active on the Research Board, and AFS Technical Council, the latter of which is now chaired by Adam Kopper (Mercury Marine). Just completing a two-year stint as Chair of the Technical Council is David Weiss (Vision Materials).

AFS thanks and appreciates the volunteer members of our technical and management divisions as well as our regional chapters.



**Kiley Eck Hayon**  
Eck Industries



**Andy Renkey**  
Harmony Castings



**Alan Brink**  
Spring City Electrical  
Manufacturing



**Amanda Torkelson**  
Alu-Bra Foundry

## Foundry E-Learning Subscriptions on the Rise

It makes perfect sense. Foundries are only as effective as the employees who comprise their team. Foundry E-Learning from the AFS Institute is the perfect complement to your other training endeavors because workers gain foundry skills and knowledge from the convenience of a computer!

In fact, corporate subscriptions to Foundry E-Learning are up 43 percent over the last several months. Modules include:

Aluminum:	5 modules
Copper:	5 modules
Defect Analysis:	11 modules
Green Sand Molding:	6 modules
Introduction to Metalcasting:	7 modules
No-bake Molding & Cores:	3 modules
Safety & Environment:	2 modules
Sand Testing:	15 modules

Over 20 modules are available in Spanish.

These self-paced metalcasting modules, which typically take 15 to 40 minutes to complete, can be leased a la carte. Corporate Members may also invest in very affordable foundry-wide subscriptions that allow for unlimited usage for all employees at one location! Contact **Jen Christian** at [jchristian@afsinc.org](mailto:jchristian@afsinc.org) to learn more and get started.

## Copper Project Wins Research Award

"Turbulent Gating Effect on C89833," a research project sponsored by the AFS Copper Division, was recently selected as the winner of the 2023 AFS Applied Research Award. Principal Investigator Andy Shea (A.Y. McDonald) was honored for this achievement during Metalcasting Congress 2023 in Cleveland.

AFS Applied Research Award recognizes the Principal Investigators of AFS-funded research projects and the companies that collaborate with them to transfer research and technical development to the metalcasting industry and actively apply research on the factory floor.

## Stay Ahead of the Curve on Additive Manufacturing

Registration is open for the **2023 AFS Additive Manufacturing Conference** to be held **November 7-8** in Dearborn.

Notes AFS Technical Director and additive expert Travis Frush, "Whether you're a foundry operator, casting designer or buyer, or industry supplier, the additive manufacturing revolution is going to shape your career."

Stay ahead of the curve by attending the **2023 Additive Manufacturing Conference**. The agenda includes presentations by experts plus a foundry tour. Registration is open at [AFSinc.org/conferences](https://AFSinc.org/conferences).

## World's Largest Digital Metalcasting Library: Popular AFS Member Benefit

Corporate and Individual Members alike are deepening their understanding of casting quality thanks to AFS's Peters-Robison Metalcasting Library.

More than 16,700 searchable articles are available to AFS members at no charge. In 2022, a total of 12,987 articles were downloaded by AFS members! Articles include:

- 529 articles referencing copper
- 227 articles referencing brass
- 252 articles referencing bronze
- More than 1,000 articles referencing aluminum
- 401 articles referencing investment casting

The Library is named for Butch Peters, who was formerly the CEO of Brillion Iron Works, and Steve Robison, who was a longtime nonferrous foundry employee in California before joining the AFS staff for more than 20 years. Both men, now deceased, were tremendously dedicated to the Library.

The Peters-Robison Library is very easy to use, but for assistance, contact **Bo Wallace** at [bwallace@afsinc.org](mailto:bwallace@afsinc.org).



## Research Projects of Keen Interest to Nonferrous Foundries

Several AFS-funded research projects with promising implications are being executed. Corporate Members help fund AFS research and are the first to receive reports on research outcomes.

- Phase 2 of the **"Quantifying Aluminum Casting Quality Through H Gas"** project is progressing, with principal investigator Dan Hoefert (Eck Industries). The steering committee chair is Dr. Adam Kopper (Mercury Marine).
- Also progressing is another exciting project, **"PVD Coatings to Aid Release for**

**Permanent Mold Castings,"** with principal investigator Dr. Steve Midson (Colorado School of Mines). Chairing the steering committee for this project is Randy Oehlein (Carley Foundry).

- The AFS Molding Division is sponsoring **"Digital Active Clay Measurement in Green Sand"** with principal investigators Dr. James Springstead and Dr. Sam Ramrattan (Western Michigan University).
- **"Effect of Solution Heat Treatment Time on 356 Fatigue Properties,"** a project launched in 2017-2018, is nearly

complete, with its final report coming soon. David Weiss (Vision Materials) is the Principal Investigator.

- Another project led by Principal Investigator David Weiss (Vision Materials) is **"Welding Alloy and Process for Al-Cu Sand Castings."** This important research is nearing completion.

**Maintain your Corporate Membership in good standing status or invest in Corporate Membership to be the first to receive news of breakthrough developments and completed results!**

## Several AFS-Published Books Helping Nonferrous Foundries

Across North America and beyond, nonferrous foundry men and women are benefiting from a number of AFS-published books, available at [AFSinc.org/store](https://www.afsinc.org/store). Some of the newer books include:



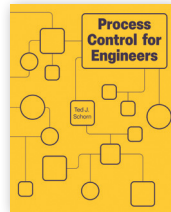
### AFS 2023 Metalcasting Forecast & Trends

Published in 2023. Provides critical information for foundry decision-making and benchmarking. Free for Corporate Members, available for sale for others.



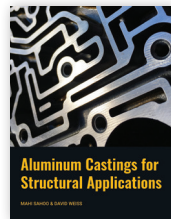
### Foundry Wage & Salary Guides

Published in 2022, these guides are useful data points for benchmarking compensation figures.



### Process Control for Engineers

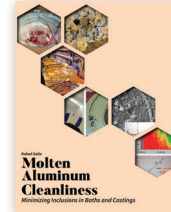
Published in 2023 and authored by Ted Schorn, provides engineers with comprehensive understanding of process control. \$210 for non-members, \$157.50 for Individual Members, \$105 for Corporate Members.



### Aluminum Castings for Structural Applications

Authored by aluminum casting experts Mahi Sahoo and David Weiss. Design engineers, manufacturing engineers, casting engineers, foundry metallurgists and other foundry

staff and management working in the premium quality production of structural castings will benefit from this book.



### Molten Aluminum Cleanliness – Minimizing Inclusions in Baths and Castings

Written by Rafael Gallo, this book tackles impurity issues faced by every aluminum foundry: inclusions and hydrogen gas-caused

porosity. It's filled with practical ways to minimize defects, plus foundry case studies and state-of-the-art molten metal analytical techniques.

AFS offers a 25% discount for Individual Members and 50% discount for Corporate Members on the purchase of these and other books. They're available at [AFSinc.org/store](https://www.afsinc.org/store).



## 2023 Foundry Leadership Summit: Great Speakers, New Friendships

Plan to join leaders from across the metalcasting supply chain at the Foundry Leadership Summit, Sept. 18-20 at the beautiful Omni Grove Park Inn in Asheville, NC.

Nonferrous foundry leaders will be well represented on panel discussions:

- AFS Board member Kiley Eck Hayon (Eck Industries) and Sachin Shivaram (Wisconsin Aluminum) will be on a panel on Opportunities & Challenges Facing Foundries that also includes moderator Brad Muller (Charlotte Pipe & Foundry) as well as Nathan Heisler (Bradken) and Matt Hladke (Grede Castings).
- A second panel will focus on the Future of Motor Vehicles in an Era of Transition and the Implications for Metalcasters. AFS 2nd Vice President David Gilson (Sintercast) will serve as the moderator.

### Topics include:

- Succession Planning for Foundries
- Industry 4.0 for Foundries
- Manufacturing in a New World
- The Future of Motor Vehicles in an Era of Transition
- 2023-2024 Economic Outlook
- The Political and Economic Climate: A View from Washington

Renew friendships and make new friends through extensive business networking, alongside a lineup of world-class speakers. Don't forget to register for the fun golf tournament.

Visit [AFSinc.org/conferences](https://www.afsinc.org/conferences) or contact **Doug Kurkul** at [dkurkul@afsinc.org](mailto:dkurkul@afsinc.org) to learn more.



## Meet Your AFS Metalcasting Technical Staff

This issue of AFS Nonferrous Foundry Bulletin, we highlight the Technical Services team at AFS.



### Brian Began

*Vice President of Metalcasting Technical Services*

One of the top aluminum metalcasting experts in North America, Brian joined the AFS staff in 2021. As Vice President, Metalcasting Technical Services, he heads up the Technical Services programs, conferences, and research projects at AFS.

Like all of the staff at AFS, Brian is committed to providing superior member service. He is liaison to the Aluminum & Light Metals Division and the Copper Alloy Division, and oversees AFS research. He works and travels from Cleveland.

Brian brings experience in key roles at ASM International and Foseco. He has a bachelor's degree in Materials Science & Engineering from Case Western Reserve University and an MBA from Ashland University. Brian advises the U.S. military on casting needs. Contact: [bbegan@afsinc.org](mailto:bbegan@afsinc.org) or **847-824-0181 ext. 228**.



### Greg Kramer

*Technical Director, Environmental, Health & Safety*

Greg brings tremendous expertise in foundry environmental health and safety, drawing on previous experience at ME Global and his master's degree in Environmental, Health & Safety from University of Minnesota-Duluth. He works and travels from Minnesota. Greg is liaison to the Environmental, Health & Safety Division, among other divisions. Contact: [gkramer@afsinc.org](mailto:gkramer@afsinc.org) or **847-824-0181 ext. 224**.



### Travis Frush

*Technical Director of Metalcasting Services*

The newest member of the AFS Technical Services team is Travis, who brings extensive expertise from his previous work at University of Northern Iowa, HyPro, John Deere, and Benton Foundry. Among his areas of specialized knowledge is 3D printing. Travis, who works and travels from Iowa, is liaison to the Additive Manufacturing Division as well as other AFS divisions. Contact: [tfrush@afsinc.org](mailto:tfrush@afsinc.org) or **847-824-0181 ext. 242**.



### Sue Thomas

*Senior Technical Editor*

Sue is the Technical Editor at AFS. A trained engineer, her contributions are seen in the wide variety of AFS technical publications available to metalcasters. Sue combines technical metalcasting knowledge with a meticulous attention to detail, and represents AFS at events such as the annual Metalcasting Congress. She earned a degree in Materials Engineering/Metallurgy from University of Illinois-Chicago. Sue works and travels from the Chicago area. Contact: [stthomas@afsinc.org](mailto:stthomas@afsinc.org) and **847-824-0181 ext. 231**.



### Bo Wallace

*Senior Technical Associate*

Bo joined the AFS team in 2017 as Course Coordinator and has advanced to his current position of Senior Technical Associate. He joined AFS after five years as Foundry Assistant at UNI,

where he earned his B.S. in Manufacturing Technology with a Metalcasting emphasis. Bo plays a key role in the AFS Peters-Robison Technical Library, Members-Only Webinars, Lost Foam Division, and research projects. Like all of the AFS staff, Bo is dedicated to superior member service. Bo works and travels from the Chicago area. Contact: [bwallace@afsinc.org](mailto:bwallace@afsinc.org) or **847-824-0181 ext. 249**.

### Kimberly Perna

*Senior Technical Coordinator*



Kim regularly amazes AFS members with her superb coordination of AFS technical programs, committees, and conferences.

She has been an indispensable member of the AFS team since 2018, and following several promotions, she is now the Senior Technical Coordinator. Kim works and travels from the Chicago area. Contact: [kperna@afsinc.org](mailto:kperna@afsinc.org) or **847-824-0181 ext. 246**.



### Thomas Prucha

*IJMC Editor*

An AFS Gold Medal winner, Tom retired from full-time work with AFS in 2016 and since then has continued to edit the *International Journal of Metalcasting* while working as President of MetalMorphosis LLC. Tom's career included previous work at InterMet, Hayes Lemmerz International, CMI International, and Northern Malleable. He works and travels from the Detroit area. Contact: [tprucha@sbcglobal.net](mailto:tprucha@sbcglobal.net).

### If Hiring and Retaining Workers is a Challenge...Then AFS Can Help!

- The **Wage & Salary Guide** can help you benchmark the right wages and benefits to offer. Find it at [afsinc.org/store](http://afsinc.org/store).
- The **Metalcasting Training & Development Summit**, to be held July 12-14 in Schaumburg, IL, will provide up to 42 metalcasting industry managers and HR directors with insight into today's challenges and solutions. Register at [afsinc.org/conferences](http://afsinc.org/conferences).
- The **AFS Talent Development Division** (formerly HR Division) is now open to all AFS members with an interest in employee recruitment, compensation, training, and retention. Join the Division and learn from your colleagues! Contact **Cathy Potts** at [cpotts@afsinc.org](mailto:cpotts@afsinc.org) to join.
- Employees who receive training are more likely to stay and thrive at your foundry. Explore the skills-development training options at the AFS Institute at [afsinc.org/training](http://afsinc.org/training).

## Corporate Memberships Offer Enhanced Business, Technical Benefits

Since 2017, the number of Corporate Members at AFS has grown from 793 to more than 960. This growth reflects the greatly enhanced member benefits for foundries as well as the Society's commitment to superior member service.

Corporate memberships provide foundries with:

- 1.) Resources to **optimize casting quality** including access to AFS technical experts, Technical Library and Members-Only Webinars.
- 2.) You're the **first to receive summaries of groundbreaking AFS research**.
- 3.) **Metalcasting forecasts** and wage/salary reports that enhance your successful business planning.
- 4.) **New business leads** through three listings in the digital and printed **Casting Source Directory**, which AFS delivers to nearly 12,000 design engineers and casting buyers!
- 5.) **Deepest discounts** on the AFS Job Board, exhibiting at AFS trade shows,

attending AFS conferences, metalcasting publications, Institute courses, and in-plant training.

- 6.) **Join other foundries** in helping AFS fight for the metalcasting industry in Washington, perform casting research, and partner with FEF and our 45 student chapters to prepare the next generation of foundry workers.

To explore **Corporate Membership**, contact **Doug Kurkul (202-294-1479)**, **Ben Yates (847-824-0181 ext. 205)** or **Kim Farrugia (734-308-1171)**. Or email us at [CustomerService@afsinc.org](mailto:CustomerService@afsinc.org).

### AFS Nonferrous Foundry Bulletin Staff

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