



LIVONIA, MICHIGAN USA

*Levius, Fortior, Plus Exerat Obsistens*

# AP UNIVERSITY

**A two-day educational event intended for designers of castings and components in ductile iron, ADI and austempered steel.**

Applied Process  
12202 Newburgh Rd  
Livonia, MI 48150

This is an invitation-only, non-commercial event

AP will provide continental breakfast, and a catered lunch

Attendees are responsible for their own transportation and lodging

Space is limited  
Please contact  
Cynthia Crowley  
today at  
734-744-9937 or

[ccrowley@appliedprocess.com](mailto:ccrowley@appliedprocess.com)

The ductile iron casting process is often the fastest and most economical method to produce engineered components. Cast parts get closer to net shape earlier in the process compared to other manufacturing methods. To fully realize the benefits of this process requires understanding key factors in cast component design. **This class is made to equip engineers with the requisite knowledge to design components in ductile iron and Austempered Ductile Iron (ADI).** A properly designed part in these materials will result in parts that perform better for the end user while offering cost reductions throughout the value chain. **Such parts are lighter, stronger, less expensive, and more wear resistant.** In addition, the benefits of using austempered steel will be explored.

Applied Process is a global leader in metallurgical technology and training. The world-class instructors at this seminar will help you to meet your design goals. The agenda is as follows:

|   |
|---|
| <b>Day 1</b>                                  |
| Introductions/overviews/CEO Welcome           |
| Applied Process history/Aalberts NA Companies |
| Genesis and history of AP University          |
| Student and instructor Introduction           |
| Introduction to Steels and Irons              |
| Production of Ductile Iron                    |
| Finishing Processes                           |
| Fab to Cast – Jeremy Lipshaw                  |
| Lethbridge Iron Works Presentation            |
| Gartland Foundry Presentation                 |
| Castings Producers Panel                      |
| Manufacturing of Steel                        |
| Adjourn - Dinner                              |
| <b>Day 2</b>                                  |
| Overview of Ferrous Heat Treatment            |
| Austempered Cast Irons                        |
| Break   |
| Austempered Steel                             |
| Lunch   |
| ADI 101                                       |
| AGI and CADI                                  |
| Machining of ADI – Angella Sell               |
| Depart for Joyworks Foundry Tour              |
| Foundry Tour – Joyworks Studio                |

All education costs and materials will be covered by Applied Process. In addition, AP will provide box lunches both days as well as dinner on Tuesday (1 Under Craft Beer & Eats, 35780 Five Mile Rd. #2, Livonia, MI 48154). Attendees are responsible for their own transportation and lodging.

Area Lodging:

Detroit Marriott Livonia – 17100 N. Laurel Park Dr., Livonia, MI 48152 Phone: 734-462-3100

Courtyard by Marriott Detroit Livonia – 17200 N. Laurel Park Dr., Livonia, MI 48152 Phone: 734-462-2000

Hilton Garden Inn Plymouth - 14600 N. Sheldon Road, Plymouth, MI 48170 Phone: 734-354-0001

**Applied Process, Inc., Technologies Division, 12202 Newburgh Road, Livonia, MI 48150**

*Note: Attendees are responsible for their own transportation to and from AP. Carpooling is encouraged.*

**Joyworks Studio, 1407 W. Joy Road, Ann Arbor, MI 48105**

## INSTRUCTOR BIOGRAPHIES

Kathy L. Hayrynen, PhD, FASM - Kathy has a BS, MS and PhD in Metallurgical Engineering from Michigan Technological University. Her graduate work focused on production of ductile iron and ADI. Following a post-doctoral research position on Ausformed/Austempered Ductile, Kathy joined the AP companies in 1995. She is currently the Vice President of Research & Development. Kathy is well known in the Austempering world having authored and co-authored many papers on ADI and frequently speaks on said topics. She is a past Chair of the AFS Cast Iron Division, a former President of the Foundry Educational Foundation and a member of the External Advisory Board for the Department of Materials Science & Engineering at Michigan Tech. Kathy has received several industry/academic honors including: an AFS Award of Scientific Merit, an AFS Ray H. Witt Management Award, the Women in Metalcasting Award of Excellence, 5 best paper awards from the AFS Cast Iron Division, the Ductile Iron Society Annual Award, ASM Fellow, ASM Education Foundation George Roberts Award and induction into the MSE Academy at Michigan Tech. More recently, she received an AFS John H. Whiting Gold Medal for her exemplary work in cast iron research and standards, chairing the AFS Technical Council, leadership in streamlining the AFS Cast Iron Division, as well as for advocacy and mentorship of students and women in metalcasting.

Steve Metz - Steve holds a BS and MS degree in Materials Engineering and an MBA from the University of Wisconsin- Milwaukee. He has worked in the metals manufacturing industry for his entire 25-year career. He was with Kohler Company for 14 years where he gained significant experience in quality systems, pattern and tooling design, process engineering, gating/rising design (using traditional and computer modeling methods) and operations management. He then worked for Castalloy (a division of Wheelabrator) as Director of Engineering for a jobbing foundry specializing in alloy white iron, stainless steel, alloy steel and Manganese steel production. Steve joined Applied Process in 2011 after having been a customer of, or a supplier to Applied Process for 19 years. Steve truly enjoys all aspects of the Applied Process value proposition, be it excellence in operations management, assisting customers in developing unique solutions to opportunities or problems as well as direct sales and educating customers through personal visits and presentations.

Angella Sell – Angella is a Research and Development Engineer for Applied Process in Livonia, MI. She received her Bachelor's and Master's degrees in Metallurgical Engineering from the Missouri University of Science & Technology. After graduation, Angella went to work in the ferrous foundry industry in eastern Ohio for five years. There she gained experience as a Plant Metallurgist, a Quality Engineer, and met her husband Dan. Angella has worked for Applied Process since August 2015 and is the immediate past Chair of the ASM Detroit Chapter, a member of the AFS Detroit-Windsor Chapter, and the Secretary of the AFS Cast Iron Division Research Committee.

Jeremy Lipshaw - Jeremy received a Bachelor's in Materials Science and Engineering in 2017 and a Master's in Mechanical Engineering in 2018, both from the University of Michigan. In addition to his studies, Jeremy worked at, and eventually managed Joyworks Studio, a prototype foundry specializing in castings education and ductile iron research. After graduation, he joined Applied Process as a Product Development Engineer where he assists with cycle development, designs lightweight and sustainable casting conversions, characterizes novel heat treatments, and improves internal modeling capabilities. Jeremy also serves as the Vice Chair of the Ductile Iron Society Research Committee.



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Please return to Cynthia Crowley at  
[ccrowley@appliedprocess.com](mailto:ccrowley@appliedprocess.com)  
+1 (734) 744-9937

Name: Click or tap here to enter text.

Title: Click or tap here to enter text.

Company: Click or tap here to enter text.

Address: Click or tap here to enter text.

Phone #: Click or tap here to enter text.

Email: Click or tap here to enter text.

*AP will not distribute this information to third parties.*

Attendance, please check all that apply:

Day One: Class & Lunch  Yes  No

Day One: Dinner - 1 Under Craft Beer & Eats Restaurant  Yes  No

Day Two: Class & Lunch  Yes  No

Day Two: Foundry Tour  Yes  No

Applied Process is a Defense Contractor and must know the citizenship status of all visitors. Please check the box which accurately describes your status (required):

United States Citizen  Green Card Holder  Visa

List type if applicable: Click or tap here to enter text.

*Please report any dietary restrictions, including food allergies. We will do our best to accommodate you.*

*We reserve the right to publish photos on our website and social media sites.*