

AMC

AMERICAN METALCASTING CONSORTIUM

AMC Technology Review

June 24-25, 2026



AMC Mission



- Connect the metalcasting industry, their technical associations, leading metalcasting research universities, and application engineers in an effective consortium to support DoW's objectives to ***rapidly procure cost-effective, high-quality cast parts*** to meet readiness requirements
- Develop and integrate ***new metalcasting technologies and processes*** to ensure a U.S. manufacturing industrial base that responsively supports the U.S. warfighter

Emergent Metal Casting Solutions (EMCS) Program AMC Projects



DLA Area of Interest	Project Name
A. Improved Alloy Development	Nano-Reinforcement of Aluminum Alloys
	Properties vs Section Thickness – High Elongation Structural Alloys
B. Innovative Simulation and Performance Modeling	Modeling of Oxide Films in High Alloy Steel Castings
C. Design and Process Optimization	Identifying and Controlling Factors to Improve the Production of Thin-Wall Ferrous High-Pressure Die Castings
	Tankless Water Quenching of Production Steel Castings
D. Nondestructive Evaluation or Testing	Advanced Digital Characterization of Component Surfaces



Emergent Metal Casting Solutions (EMCS) Program AMC Projects



DLA Area of Interest	Project Name
E. Testing and Qualification Standards	Quantifying Process Relationships for Surface Defects on Chemically Bonded Sand Systems
F. Molds, Dies and Patterns	Cost-Effective Fast Response and Sustainability for Critical Castings
	Advanced Thermal Management for High Pressure Die Casting
G. Respondent Area of Research Interest	Transition of Steel Casting Technology through Codes, Standards, and Educational Tools
H. Procurement Solutions	Virtual Knowledge Transfer Platforms for Improved Access to Metalcasting Best Practices
	Expansion and Advancement of Integrated Casting Ordering Network (ICON)
	Casting Procurement Readiness and Acquisition Improvement through CAST-IT Supply Center Support

Emergent Metal Casting Solutions (EMCS) Program ACPI Projects



DLA Area of Interest	Project Name
D. Nondestructive Evaluation or Testing	Machine Learning and Artificial Intelligence Algorithm for Defect Characterization and Diagnosis
E. Testing and Qualification Standards	ACPI MMPDS of Alloy into CADS
F. Molds, Dies, and Patterns	Assessment and Model Development of Investment Casting Shell Cracking

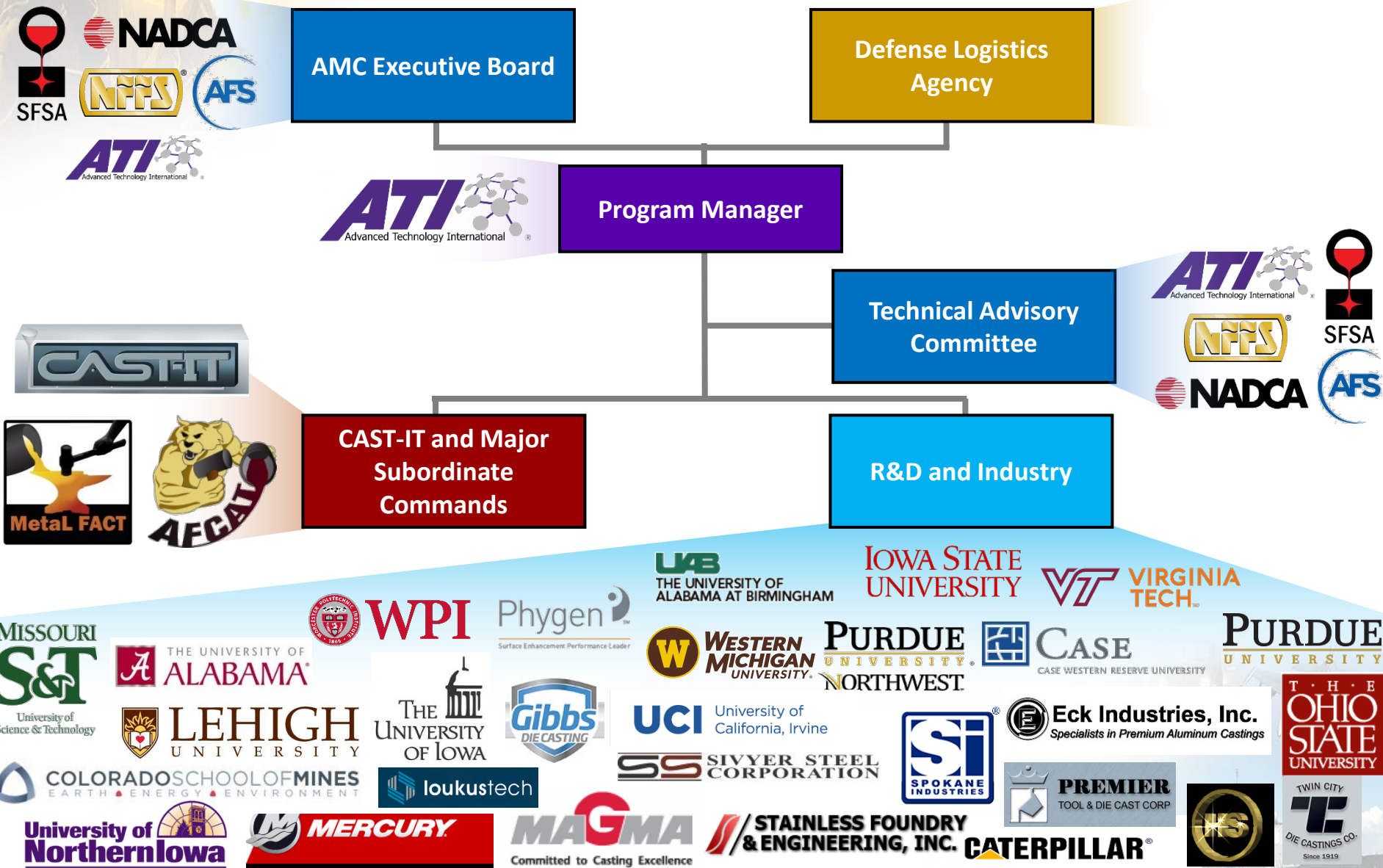




Acknowledgement

AMC's ***Emergent Metal Casting Solutions*** (EMCS) and the ***Aluminum Casting Performance Initiative*** (ACPI) is sponsored by the Defense Logistics Agency – Troop Support, Philadelphia, PA and the Defense Logistics Agency Information Operations, J68, Research & Development, Ft. Belvoir, VA

AMC Organizational Chart



AMC Team Contacts



AMC Executive Director
Julia Spieker



CAST-IT Team Lead
Michelle Truitt



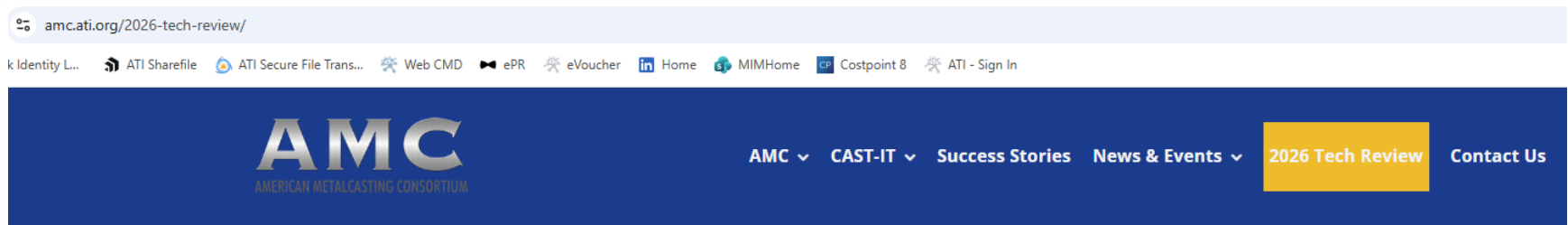
AMC Program Assistant
River Simpson



AMC Website Resources



- Find publicly approved slides, agenda, and more on the AMC website:
 - <https://amc.ati.org/2026-tech-review/>). Complete evaluations for each day



2026 Tech Review



Administrative Items

- **Reception** after today's presentations 6:00 – 8:00 pm
 - *Free drink ticket thanks to ATI*
- **Full breakfast tomorrow** morning 7:30 – 8:30 am
 - Basket for government employees' meal donations
- Handout packet has agenda, attendee list, useful passwords, admin items
- 2027 AMC Technology Review - tentatively **June 9-10, 2027-** location TBD (Chicago O'Hare area)
- JDMTP: project year is represented with a graphic

Duration

1	2	3	4	5
---	---	---	---	---

More Administrative Items

- **Free parking:** press Help button at exit gate, say you are with the AMC Tech Review, and gate will open
- Please remember to **silence your cell phone**
- Location of restrooms and nearest exit
- Please be aware of time constraints
- Success Stories are on back table
- In-person attendees: please use microphone to ask questions
- Remote attendees:
 - Will be muted at all times
 - Raise hand and wait to be acknowledged before asking a question
 - Can also use the chat to type questions

Reminders

- Use AMC Sharepoint site
- Keep DD2345s current
- Comply with US antitrust laws
- Request pre-approval for:
 - All project-related travel (travel being charged to DLA)
 - All project-related papers / presentations for public release

Agenda Day 1

2026 AMC Technology Review Agenda				
Wednesday, June 24 2026 (all times CDT)				
Start	End	Topic	Presenter	Duration
9:30 AM	10:00 AM	Welcome	Julia Spieker, AMC	30
10:00 AM	10:40 AM	CAST-IT	Michelle Truitt, ATI	40
10:40 AM	11:20 AM	Quantifying Process Relationships for Surface Defects on Chemically Bonded Sand Systems	Robert Tuttle, Western Michigan University	40
11:20 AM	12:00 PM	Tankless Water Quenching of Production Steel Castings	Stephen Williams, University of Alabama-Birmingham	40
12:00 PM	1:00 PM	Lunch		60
1:00 PM	1:40 PM	Expansion and Advancement of ICON	Sheila Rayburn, NFFS Mike Chiero, Valor Group	40
1:40 PM	2:20 PM	Modeling of Oxide Films in High Alloy Steel Castings	Richard Hardin, University of Iowa	40
2:20 PM	2:40 PM	Break		20
2:40 PM	3:20 PM	Virtual Knowledge Transfer Platforms for Improved Access to Metalcasting Best Practices	Brian Began, AFS	40
3:20 PM	4:00 PM	Properties vs Section Thickness – High Elongation Structural Alloys	Paul Brancalion, NADCA	40
4:00 PM	4:10 PM	Break		10
4:10 PM	4:50 PM	Transition of Steel Casting Technology through Codes, Standards, and Educational Tools	Dave Poweleit, SFSA Mike Gwyn, Metalcasting Design LLC Jake Richardson, Consultant	40
4:50 PM	5:40 PM	Identifying and Controlling Factors to Improve the Production of Thin-Wall Ferrous High-Pressure Die Castings	Steve Midson, Colorado School of Mines; Sadie Beck, University of Alabama Danny Portillo, University of Alabama	50
5:40 PM	5:45 PM	Day 1 Wrap-Up	Julia Spieker, AMC	5
6:00 PM	8:00 PM	Reception-Lindbergh A&B	-	120

Agenda Day 2

2026 AMC Technology Review Agenda				
Thursday, June 25 2026 (all times CDT)				
<i>Start</i>	<i>End</i>	<i>Topic</i>	<i>Presenter</i>	<i>Duration</i>
7:30 AM	8:30 AM	<i>Breakfast</i>		60
8:30 AM	8:35 AM	Welcome	Julia Spieker, AMC	5
8:35 AM	9:15 AM	Advanced Digital Characterization of Component Surfaces	Frank Peters, Iowa State University	40
9:15 AM	9:55 AM	Nano-Reinforcement of Aluminum Alloys	David Weiss, Loukus Technologies	40
9:55 AM	10:10 AM	<i>Break</i>		15
10:10 AM	10:50 AM	Advanced Thermal Management for High Pressure Die Casting	Carl Soderhjelm, University of California-Irvine (UCI)	40
10:50 AM	11:30 AM	Cost-Effective Fast Response and Sustainability for Critical Castings	Tom Prucha, Metal Morphosis, LLC	40
11:30 AM	12:10 PM	ACPI: Assessment and Model Development of Investment Shell Cracking	Laura Bartlett, Missouri University of Science & Technology	40
12:10 PM	1:10 PM	<i>Lunch</i>		60
1:10 PM	2:00 PM	ACPI: Machine Learning and Artificial Intelligence Algorithm for Defect Characterization and Diagnosis	Brian Began, AFS Carl Soderhjelm, UCI Chris Hinrichs, ML Adjacency Analytics	50
2:00 PM	2:40 PM	ACPI: MMPDS of Alloy Into CADS	Jiten Shah, PDA	40
2:40 PM	3:00 PM	Meeting Wrap Up	Julia Spieker, AMC	20



Icebreaker Question

What is your favorite book or TV series?