



# 2023 AMUG CONFERENCE

EDUCATION & TRAINING CONFERENCE

March 19-23 | Hilton Chicago | Chicago, Illinois, USA



## 2022 ADVANCED CONCEPT WINNER

"Metal 3-D Printing Raises the Bar for the Army's Jointless Hull Program"  
Nanci Hardwick, MELD Manufacturing



## 2022 ADVANCED FINISHING WINNER

"Mars Attacks"  
Bill Braune, Dinsmore, Inc.



## 2022 MEMBER'S CHOICE WINNER

"Metal 3D Printed Bathroom Faucet"  
Jung Kyu Im and Daniel Goncalves, Custom Prototypes



# **WELCOME TO 2023 AMUG CONFERENCE**



# TABLE OF CONTENTS

PRESIDENT WELCOME LETTER	4
AMUG ATTENDEE PARTICIPATION	5
GENERAL INFORMATION	6
AMUG ONLINE PLANNER AND MOBILE APP	7
FEATURED SPEAKERS	8
AGENDA-AT-A-GLANCE	8-9
KEYNOTE SPEAKERS	10
INNOVATORS AWARD	11
SCHOLARSHIP WINNERS	12-13
TECHNICAL COMPETITION	14
TECHNICAL COMPETITION HISTORY	15
PRE-CONFERENCE ACTIVITIES	16
AMUG CONFERENCE AGENDA	
SATURDAY - SUNDAY	17
MONDAY	18-19
TUESDAY	20-21
WEDNESDAY	22-23
THURSDAY	24-25
AMUGEXPO	26
AMUGEXPO FLOORPLAN	27
HILTON CHICAGO	
OVERVIEW AND MAP KEY	28-29
LOWER LEVEL	30
LOBBY LEVEL	31
2ND FLOOR	32
3RD FLOOR	33
4TH FLOOR	34
5TH FLOOR	35
8TH FLOOR	36
AMUG HISTORY	37
DINO AWARDS AND RECIPIENTS	38-39
AMUG BOARD AND COMMITTEES	40-43
AMUG AWARDS AND RECOGNITIONS	44
VENDOR THANK YOU	45
2023 AMUG CONFERENCE SPONSORS	46-47

**Welcome to the 2023 AMUG Conference.** Our conference started in 1988 with just a handful of people meeting to share knowledge of the revolutionary new technology of 3D printing. These users pioneered a unique concept of a network 'For Users, By Users' as opposed to a users' group that is run by a company. This autonomous freedom of AMUG has contributed a voice that encourages the AM industry to create hardware, software, materials and applications based on the users' needs and input.



That's me on the right in 2001 at the 3D Systems Users Group (3DSUG) at the Hilton Sandestin Beach Golf Resort and Spa in Miramar Beach, Florida. This was taken 10 years before it became the Additive Manufacturing Users Group (AMUG).

My first experience attending the conference as a user was in 1991. It was a truly open environment with discussions of everything from basic part orientation to the advanced algorithms involved in part-building parameters. But the most important things that I walked away with were the relationships developed with others in the same industry, friends that I could rely on for solutions and advice to get the most out of my AM equipment.

First-time attendees, we are diligent in our efforts to deliver that same experience to you, one that is both memorable and profitable for those that join us. If you are a returning attendee, you already realize the value of attending the AMUG Conference.

The AMUG Conference is the 'jewel' of the Additive Manufacturing community, and it would be impossible to view just one facet of this unique gem. What makes the AMUG Conference special? Is it the army of volunteers that organizes an event from the perspective of owners and operators? Is it the technical exchange of knowledge from presentations and hands-on training? Is it the networking and camaraderie of other users? These are just some of the reflections from the gemstone. But what makes AMUG truly special is in the center of this jewel—YOU. The jewel gains its brilliance from attendees that are willing to share and be part of this immersive experience with others.

While I am honored to serve as president of AMUG for 2023, it is my privilege to work with the many dedicated, passionate and talented people that make up our 20 committees, individuals who volunteer their time, expertise and skills in organizing this event year after year. Their contributions create **an experience like no other** in the industry. We encourage more users to participate and share their insights to grow the opportunity for others within the AM industry. Remember, this conference is "For Users, By Users".

So, welcome to the 2023 Additive Manufacturing Users Group Conference. Take advantage of all the activities, networking and training that it offers.

A handwritten signature in black ink, reading "M. Abshire".



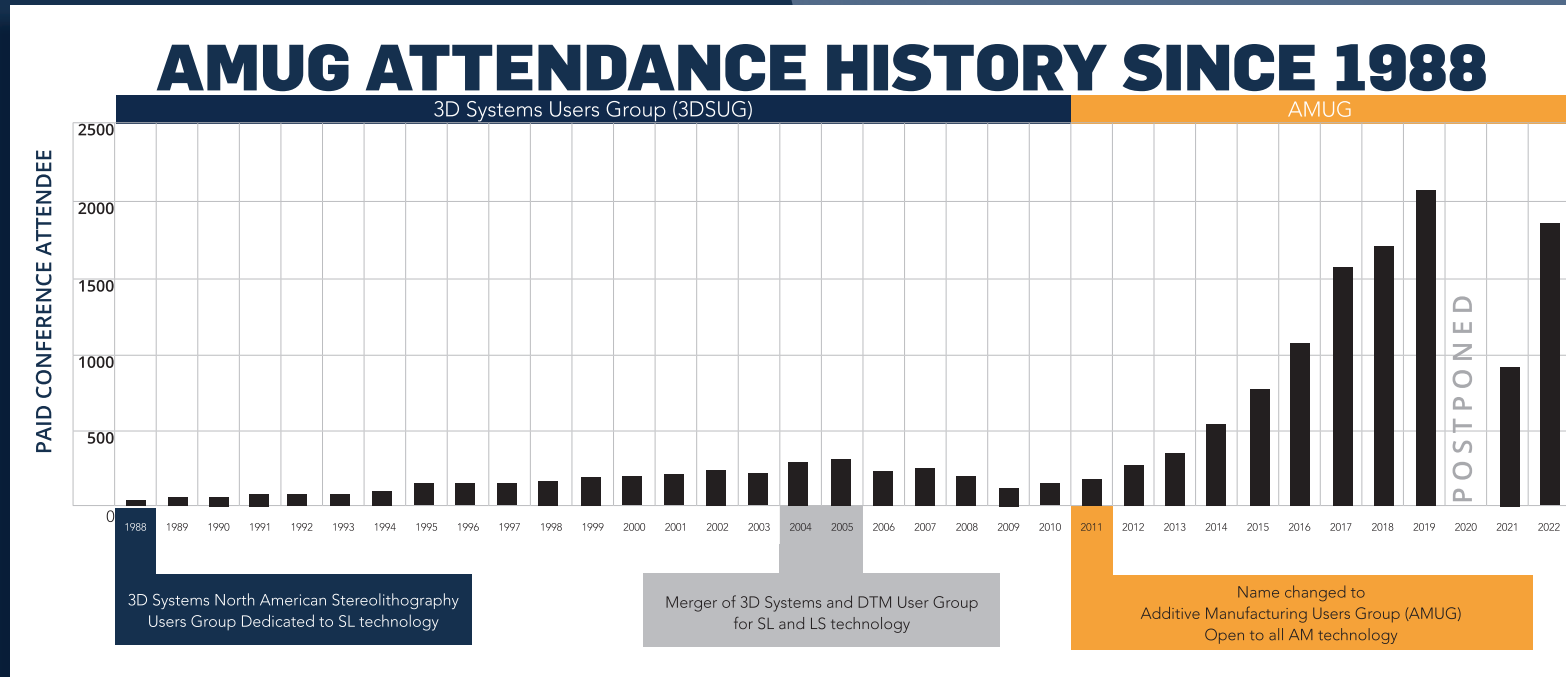
Mark Abshire, AMUG President  
president@amug.com



# AMUG ATTENDEE PARTICIPATION

"For Users, By Users" is both AMUG's philosophy and its guiding principle. Every presentation, panel, roundtable, workshop, sponsor and exhibitor passes through one simple filter: does it provide value to AM users? That is the crux of "For Users." We then turn to users to provide the content and count on them to make the conference valuable, memorable and unique. That is the "By Users" component.

Percentage of Attendance by industry based on global presence at the 2022 AMUG Conference



- AEROSPACE**  
Aerospace and Space 10%
- AUTOMOTIVE**  
Automotive 5%
- CONSUMER**  
Consumer Products 5%
- EDUCATION**  
Educational Institutes 3%
- GOVERNMENT**  
Government, Military, and Defense 10%
- MEDICAL**  
Medical and Dental 7%
- SUPPLIER**  
AM Industry Suppliers 11%
- SERVICE PROVIDER**  
Service Provider 35%
- OTHER**  
Non-specified Industry 14%

## AMUG Attendee and Country Participation

(Attendee numbers only reflects paid conference attendees in attendance. Does not include no-shows, nor exhibitors or sponsors not participating as a paid conference attendee).

2012	2013	2014	2015	2016	2017	2018	2019	2020	2021*	2022
262 attendees	361 attendees	527 attendees	888 attendees	1061 attendees	1548 attendees	1705 attendees	2064 attendees	Postponed	862 attendees	1865 attendees
17 countries	16 countries	17 countries	26 countries	23 countries	27 countries	29 countries	32 countries		10 countries	21 countries

\*Global and Company  
Travel Restrictions due to  
pandemic

## AMUG CONFERENCE

AMUG Conference begins Sunday, March 19 at 3:00pm with a New Member Welcome, followed by the start of the AMUGexpo at 4:00pm. AMUG Conference concludes Thursday, March 23 at 10:00pm. See Agenda-at-a-Glance pages 8-9.

## REGISTRATION AND BADGE PICKUP HOURS

Sunday, March 19:	10:00am - 8:00pm
Monday, March 20:	7:00am - 8:00pm
Tuesday, March 21:	7:00am - 4:00pm
Wednesday, March 22:	7:00am - 6:00pm
Thursday, March 23:	7:00am - 11:00am

All pre-conference Training and Certification Courses require additional registration and fee. See page 16-17.

## AMUGEXPO HOURS

### AMUGEXPO AND DINNER

Sunday, March 19: 4:00pm -10:00pm

### AMUGEXPO

Monday, March 20: 10:00am - 2:30pm

### AMUGEXPO, TECHNICAL COMPETITION, AND DINNER

Monday, March 20: 6:00pm - 10:00pm

Diamond and Platinum booths are open all week - see daily schedule for times. AMUGexpo is part of the AMUG Conference. Separate tickets or attendance for the AMUGexpo are not available. AMUGexpo is open to all registered conference attendees and registered AMUGexpo booth staff.

## DINING

Your AMUG Conference attendee pass includes all meals from Sunday evening through Thursday evening.

## OFF-SITE EVENT AND DINNER

Conference attendees have full access to all conference activities including the AMUG Tuesday-night Off-Site Event and Dinner (surprise location!). Conference attendees have the option of bringing a guest for an additional fee, which can be purchased at the registration desk.

Bus Schedule	Hilton Chicago	Palmer House
Line up for Buses begins at:	5:15pm	5:15pm
Buses Board at:	5:15pm	5:20pm
Buses leave at:	5:15pm - 5:30pm Buses begin departing as soon as 55 people are on bus	5:30pm
Bus Leads	Dir, Event & Hospitality, Thomas Sorovetz AMUG Volunteer Bus Lead, Kevin Ayers	Red Oak Representative
<b>You must wear your conference badge to board the bus.</b> We suggest you wear closed-toe shoes and comfortable clothing appropriate for indoor and outdoor activities.		

## IMPORTANT! BOARD OF DIRECTORS ELECTION

Attention all AMUG Members! The AMUG Board of Directors election will take place via the AMUG mobile app or in-person ballot. All paid conference attendees are eligible to vote. Voting will take place Sunday, March 19 at 10:00am to Tuesday, March 21 at 9:00pm (local conference time). All AMUG Conference attendees are considered AMUG Members, *even first-time attendees*.

## BUSINESS MEETING

The AMUG Business Meeting will take place Wednesday, March 22 at 11:00am. The Business Meeting is for AMUG Conference attendees only. The 2023-2025 Board of Directors will be announced at the meeting. Please make sure to attend!

## WIFI

WIFI is available for free throughout the entire hotel and in your room. Code for the WIFI will be available through the mobile app and signage at registration.

## NAME BADGES REQUIRED

Wear your AMUG badge at all times during the conference, as it is required for entry to all sessions and evening activities. Badges are mandatory for the Tuesday night event. Badges are issued to the registered individual and may not be used by others. A valid ID is required to obtain your AMUG badge.

## SAFETY AND SECURITY

Please do not leave your belongings or conference materials unattended in session rooms or in the general area of the hotel. Should you have any issues during your stay, please contact Thomas Sorovetz, mobile: +1 (734) 320-6310, or visit the AMUG Office on the Lobby Level near the AMUG Registration desk.

## EVENT CONDUCT AND SAFETY - WE VALUE YOU

AMUG is committed to providing a safe, productive, and welcoming environment to all participants, including staff and vendors. AMUG has no tolerance for discrimination, harassment, or bullying in any form at AMUG-related events and activities. In addition, suitcasing or outboarding is prohibited at AMUG Conference. AMUG Conference Organizer reserves the right to escort any individual from AMUG Conference who is reported to be soliciting in the exposition and who is not an AMUG Conference sponsor or exhibitor. AMUG Conference Organizer encourages attendees to support the paid sponsors and exhibitors who, in turn, are supporting the industry. AMUG Conference Organizer also encourages you not to listen to a sales pitch from a non-sponsor or exhibitor. Participants are expected to adhere to these principles and respect the rights of others.

### How to Report an Issue:

1. Report directly to on-site contacts: Thomas Sorovetz, Director, Events & Hospitality, Elizabeth Goode, AMUG Principal Consultant or any AMUG Board of Director member. Thomas Sorovetz is the primary coordinator to help participants contact venue security or local law enforcement, provide safety escorts, or otherwise assist those experiencing harassment to feel safe for the duration of the event.
2. Report an issue through the mobile app. Use the Report an Issue button in the mobile app to report event conduct and safety concerns.



ENHANCE YOUR EXPERIENCE AT AMUG 2023 WITH THE

# AMUG ONLINE PLANNER AND MOBILE APP

The AMUG Online Planner and Mobile App will provide the most current information on schedule changes, cancellations, room changes, and conference notifications. Make it a habit to check the Online Planner or Mobile App for the most current information.

## AMUG ONLINE PLANNER

The AMUG Online Planner is the place to start and return to during the conference and after the conference.

Everything that will be found in the mobile app is also found on the AMUG Online Planner. Create your schedule with the Online Planner by first setting up your account with your Username (email address used to register) and Registrant ID found on your confirmation email.

Access the online planner at: <https://2023amug.eventscribe.net/>

## AMUG MOBILE APP

Use the AMUG Mobile App to:

- Build your conference schedule by favoriting the presentations and events you would like to attend
- View PDFs of presentations and take notes (presentations will be made available on the morning of the scheduled presentation)
- Network with AMUG Attendees (view contact information and message within the app - contact information available if agreed by attendee)

- Vote in the App for AMUG Board of Directors 2023-2025 and the Technical Competition Member's Choice Award
- Evaluations for presentations and conference survey
- Participate in AMUG Daily - new item for general morning sessions
- Report an Issue
- Find out more about the AMUG Organization, Bylaws and Volunteering

## ACCESS DURING THE CONFERENCE

AMUG Full-Conference attendees receive access to all content within the app including all course materials, presentations, evaluations, election for the Board of Directors, and voting for Member's Choice.

Expo Booth Staff receive access to non-course materials (AMUGexpo floor plan and information, no presentation/slide access, or conference-only activity).

## ACCESS AFTER THE CONFERENCE

Both the Online Planner and Mobile App are accessible after the conference. Proceedings, Business Meeting minutes, election results and content for sessions will be made available. New information will be added and presentations will be available for a year. AMUG encourages all speakers to upload a presentation for attendees to access after the conference, should a presentation be missing please contact that speaker for a copy.

## STEP 1. DOWNLOAD THE EVENTSCRIBE APP & SEARCH FOR AMUG 2023

### FIRST

Search for "eventScribe" in the Apple App Store or Google Play Store OR scan the QR Code below to go directly to eventScribe.

Scan the QR Code to download the eventScribe App



### SECOND

INSTALL and OPEN the app then search for 2023 AMUG Conference, SELECT the event:

"AMUG 2023"

CLICK the icon to launch your app.



## STEP 2. LOGIN TO THE AMUG CONFERENCE EVENT APP

To start using the event app, select "Login" and enter your:

Username (email address you registered with for the conference)

and

Registrant ID (this is the registration identification you received when you registered)

Don't worry, this information will be provided on the back of your badge.

## STEP 3. SHARE YOUR PROFILE WITH ATTENDEES

When you access the app, you will be asked to set up your profile. In order for attendees to connect with you make sure to check YES to share your contact details with attendees. Turn push notifications ON for the app. AMUG will send out important updates and reminders throughout the day.



# FEATURED SPEAKERS

## EMCEE AMUG BOARD & CHAIRS



Todd Grimm  
T.A. Grimm & Associates  
AMUG Emcee

## KEYNOTE



Rob Ducey, LAIKA Studios  
Nicholas Jacobson, CU Anschutz Medical Campus

## SCHOLARSHIP WINNERS



Guy E. Bourdeau Scholarship  
Brent Griffith, Student  
Penn State University  
Randy Stevens Scholarship  
Les Kalman, Associate Professor  
Western University

## TECHNICAL COMPETITION WINNERS



## INNOVATORS SHOWCASE



Diana Kalisz, 3D Systems

## KEYNOTE



Max Haot, Launcher

# AGENDA

PRE-CONFERENCE ACTIVITY	PRE-CONFERENCE ACTIVITY
SATURDAY, MARCH 18, 2023	SUNDAY, MARCH 19, 2023
<p>SUPPLEMENTARY CONFERENCE TRAINING AND CERTIFICATION</p> <p>ASTM ASTM Certificate Course (2 day course) Establishing an Additive Manufacturing Facility for Critical Part Production 9:00am-5:00pm <a href="#">More info on page 16</a></p>	<p>SUPPLEMENTARY CONFERENCE TRAINING AND CERTIFICATION</p> <p>ASTM ASTM Certificate Course (continuation) Establishing an Additive Manufacturing Facility for Critical Part Production 9:00am-3:00pm <a href="#">More info on page 16</a></p> <p>OFF-SITE TOURS</p> <p>DMG MORI - Technology Tour <a href="#">More info on page 16</a></p> <p>Impossible Objects - Technology Tour <a href="#">More info on page 16</a></p>
<b>AMUG CONFERENCE ACTIVITY BEGINS</b>	
<p>REGISTRATION OPEN 10:00AM-8:00PM</p> <p>SPEAKER CENTER AND APP DESK OPEN 10:00AM-6:00PM</p> <p><b>CONFERENCE PROGRAM</b> New Member Welcome 3:00pm-4:00pm First-time conference attendees welcome and introduction to the AMUG Conference.</p> <p>AMUGexpo and Networking Dinner - ALL EXHIBITS OPEN <b>EXPO OPEN</b> 4:00pm - 10:00pm Join us Sunday night for the AMUGexpo Opening. Enjoy a buffet dinner and beverages as you tour the AMUGexpo. AMUGexpo (Conference Attendees and Badge Holding Diamond, Platinum, Gold, and Exhibitor Booth Staff - AMUG does not sell AMUGexpo only passes)</p>	





# - A T - A - G L A N C E

AMUG CONFERENCE			
MONDAY, MARCH 20, 2023	TUESDAY, MARCH 21, 2023	WEDNESDAY, MARCH 22, 2023	THURSDAY, MARCH 23, 2023
<p>REGISTRATION OPEN 7:00am-8:00pm</p> <p>SPEAKER CENTER AND APP DESK OPEN 7:00am-12:30pm 1:00pm-4:30pm</p> <p>BREAKFAST 7:00am-8:00am</p> <p><b>CONFERENCE PROGRAM</b> Insights and Highlights 8:00am-10:00am AMUG Welcome AMUG Conference Highlights 2023 Scholarship Winners 2023 Board Election Process Diamond Sponsor Insights and Highlights</p> <p>Break 10:00am-10:30am</p> <p>AMUGexpo <b>EXPO OPEN</b> 10:00am-2:30pm (note: sessions begin at 1:30pm) ALL EXHIBITS OPEN</p> <p>Networking Lunch buffet during AMUGexpo 12:00pm-1:15pm</p> <p>AMUG and Sponsor Speaking and Training Sessions 1:30pm - 2:30pm</p> <p>Break 2:30pm-3:00pm</p> <p>AMUG and Sponsor Speaking and Training Sessions 3:00pm - 5:30pm</p> <p>AMUGexpo, Technical Competition and Networking Dinner <b>EXPO OPEN with Technical Competition</b> 6:00pm - 10:00pm Enjoy a buffet dinner and beverages as you tour the AMUGexpo. AMUGexpo (Conference Attendees and Badge Holding Diamond, Platinum, Gold, and Exhibitor Booth Staff - AMUG does not sell AMUGexpo only passes)</p>	<p>REGISTRATION OPEN 7:00am-4:00pm</p> <p>SPEAKER CENTER AND APP DESK OPEN 7:00am-12:30pm 1:00pm-3:30pm</p> <p>BREAKFAST 7:00am-8:00am</p> <p><b>CONFERENCE PROGRAM</b> KEYNOTE Rob Ducey, LAIKA Studios Nicholas Jacobson, CU Anschutz Medical Campus 8:00am-9:00am</p> <p>2023 DINO 25TH ANNIVERSARY 2023 DINO Awards Announced Distinguished INnovator Operator (DINO) Presentation 9:00am-10:00am</p> <p>Break 10:00am-10:30am</p> <p>AMUG and Sponsor Speaking and Training Sessions 10:30am - 12:00pm</p> <p>Networking Lunch 12:00pm-1:15pm</p> <p>AMUG and Sponsor Speaking and Training Sessions 1:30pm - 2:30pm</p> <p>Break 2:30pm-3:00pm</p> <p>AMUG and Sponsor Speaking and Training Sessions 3:00pm - 4:00pm</p> <p>Board Buses for Off-Site Dinner Location: It's a Secret 5:15pm - 5:30pm Hilton Chicago: Buses board at 5:15pm Palmer House: Buses board at 5:30pm Everyone must wear their AMUG badge or show their purchased ticket to board the bus. Everyone must take the bus to the off-site dinner location. No third party rides allowed. Do not line up for the bus before 5:15pm. Once a bus is full with 55 people it will depart for the event.</p> <p>AMUG Off-Site Dinner and Event 6:00pm - 10:00pm Open to all AMUG Members (All Attendees with Full Conference Pass). Those with Expo Staff badges and guests must have a purchased ticket to attend.</p> <p>Transportation provided. Additional dinner tickets are available for purchase.</p>	<p>REGISTRATION OPEN 7:00am-6:00pm</p> <p>SPEAKER CENTER AND APP DESK OPEN 7:00am-12:30pm 1:00pm-4:00pm</p> <p>BREAKFAST 7:00am-8:00am</p> <p><b>CONFERENCE PROGRAM</b> INNOVATORS SHOWCASE Diana Kalisz 8:00am-9:00am</p> <p>2022 Technical Competition Winners 9:00am-9:30am The 2022 AMUG Technical Competition winners will provide a presentation on their winning applications</p> <p>INTERNATIONAL REPORT 9:30am-10:00am</p> <p>Break 10:00am-10:30am</p> <p>2023 Technical Competition Winners Announced 10:30am-11:00am</p> <p>AMUG Business Meeting 11:00am-12:00pm Open to all full-conference pass attendees. <b>New 2023-2025 AMUG Board Members Announced</b></p> <p>Networking Lunch 12:00pm-1:15pm</p> <p>AMUG and Sponsor Speaking and Training Sessions 1:30pm - 2:30pm</p> <p>Break 2:30pm-3:00pm</p> <p>AMUG and Sponsor Speaking and Training Sessions 3:00pm - 5:30pm</p> <p>Dinner - It's the 1893 Chicago Worlds Fair - Steampunk Style 6:00pm-10:00pm An event for all Conference Attendees and Badge Holding Diamond and Platinum Booth Staff. Enjoy a night of great food, games, and more.</p>	<p>REGISTRATION OPEN 7:00am-11:00am</p> <p>SPEAKER CENTER AND APP DESK OPEN 7:00am-12:30pm</p> <p>BREAKFAST 7:00am-8:00am</p> <p><b>CONFERENCE PROGRAM</b> KEYNOTE Max Haot, Launcher 8:00am-9:00am</p> <p>2022 Technical Competition Members Choice Award Presentation 9:00am-9:15pm</p> <p>2023 Technical Competition Members Choice Award Announcement 9:15am-9:30pm</p> <p>AMUG Preparation for 2024 and Closing Statements Member Feedback with AMUG Board of Directors 9:30am-10:00am</p> <p>Break 10:00am-10:30am</p> <p>AMUG and Sponsor Speaking and Training Sessions 10:30am - 12:00pm</p> <p>Networking Lunch buffet in Diamond and Platinum booth area 12:00pm-1:15pm</p> <p>AMUG and Sponsor Speaking and Training Sessions 1:30pm - 2:30pm</p> <p>Break 2:30pm-3:00pm</p> <p>AMUG and Sponsor Speaking and Training Sessions 3:00pm - 5:30pm</p> <p>Family Dinner &amp; Closing 6:00pm - 10:00pm An event for all Conference Attendees and Badge Holding Diamond and Platinum Booth Staff.</p> <p>AMUG Closing Dinner is the official closing event at the AMUG Conference. Family dinner, music and activities.</p> <p><b>CONFERENCE CONCLUDES</b></p>

Don't Miss!  
**AMUG**  
**Technical Competition**  
Monday, March 20 at the  
AMUGexpo  
6:00pm-10:00pm

Members Choice Voting  
continues Tuesday, March 21  
**Technical Competition on display**  
on the Lower Level in Salon B  
for Members Choice Award voting

# KEYNOTE SPEAKERS



**TUESDAY, MARCH 21**

**8:00AM - 9:00AM**

**INTERNATIONAL BALLROOM**

Collaborations Between an Animator, an Architect, and a Surgeon: The Keys to Impactful Innovation in Medicine



Speakers: Rob Ducey, LAIKA Studios  
Nicholas Jacobson, CU Anschutz Medical Campus



**THURSDAY, MARCH 23**

**8:00AM - 9:00AM**

**INTERNATIONAL BALLROOM**

High-Performance, Low-Cost Liquid Propulsion  
Enabled by AM

Speaker: Max Haot, Launcher

**Tuesday, March 21, 2023**

**Collaborations Between an Animator, an Architect, and a Surgeon: The Keys to Impactful Innovation in Medicine**

Rob and Nick met at AMUG 2019, having connected over a little-known 3D modeling and printing technique at the time called 'bitmap printing'. Since this time, they have leveraged their unique workflows and toolsets to collaborate on the development of new and exciting applications for 3D bitmap printing in medicine. This collaboration has resulted in innovative designs for Pediatric Epilepsy, Cardiology, and Cleft Palate with new ideas emerging daily. In this talk they will discuss their unique collaboration, provide a history of their individual methods, dive into some of their innovations, and share their vision for future explorations. Throughout this talk they hope to inspire you to think outside the silos of your fields and search for new ideas through untraditional collaborations. Because the keys to a great innovation might be sitting right next to you.

**Thursday, March 23, 2023**

**High-Performance, Low-Cost Liquid Propulsion  
Enabled by AM**

Max will take the AMUG stage on Thursday, March 23, to share an overview of the breakthrough additive manufacturing innovations by Launcher in its E-2 liquid rocket engine and the Orbiter space tug programs. The E-2 is a closed-cycle, high-performance rocket engine that contains multiple AM-produced copper alloy components, capable of boosting a 150 kg payload into low Earth orbit (LEO) using the firm's Launcher Light Vehicle, scheduled for launch in 2024.

Max Haot is the Founder & CEO of Launcher, a Hawthorne, California, aerospace company founded in 2017 with the goal to develop the world's most efficient rockets and transfer vehicles to deliver small satellites to orbit. Prior to Launcher, Max was Founder and CEO of Mevo, a live streaming camera maker that was acquired by Logitech in 2021; and Founder and CEO of Livestream, an Enterprise live video software as a service (SaaS) provider acquired by IAC/Vimeo in 2017. Max has over 20 years of experience as an entrepreneur and a lifelong passion for space.



Wednesday, March 22, 2023

2023 Innovators Award Recipient

Diana Kalisz, Vice President, Materials, 3D Systems

Diana Kalisz has been part of 3D Systems for more than 30 years – joining the company in 1989 after beginning her career in aerospace. She has worked in a variety of capacities including managing printer, software and materials programs as well as leading the company's overall engineering organization. Under her leadership, 3D Systems has commercialized dozens of products to facilitate the maturation of rapid prototyping as well as true production applications. In her current role, Diana is focused on materials development for the company's Figure 4 platform. She has a specific focus on Figure 4 materials directly used for many types of production applications.

Diana Kalisz has worked in additive manufacturing for over 30 years. Her entire additive manufacturing career has been with one company, 3D Systems. Following her career in aerospace, she joined 3D Systems as a project manager for the large-format SLA 500, the second stereolithography machine offered by the company.

Diana has managed, in various capacities, the engineering and development programs for the company's hardware, software, and materials solutions. Before her current position, she served as Vice President, Engineering.

Presently, Diana is 3D Systems' Vice President, Materials, focusing on developing production applications for the company's Figure 4 platform. She works with customers and her 3D Systems colleagues to enable the use of Figure 4 solutions from selection (printer, materials, and software) through development to meet the needs of those deploying additive manufacturing as part of their production workflow.

Diana is a member of P.E.O., a women's philanthropic educational organization that supports higher education for women through scholarships, grants, awards, loans, and stewardship. This small organization has raised and given hundreds of millions of dollars to support women's education over its 153-year history.

# INNOVATORS AWARD

**WEDNESDAY, MARCH 22**  
**INTERNATIONAL BALLROOM**  
**8:00AM - 9:00AM**



2023 AMUG Innovators Award Recipient  
Diana Kalisz, 3D Systems

# GUY E. BOURDEAU STUDENT SCHOLARSHIP

Brent Griffith's foray into the world of additive manufacturing (AM) began during his undergraduate studies when he received a LaserCut RepRap Mendel 3D Printer kit as an early graduation gift. Despite the initial challenges of printing on the machine (in 2009) and the relatively rough quality of the printed objects by today's standards, this experience ignited a deep passion within him for AM that has endured over time. In pursuit of this passion, he constructed several homemade or kit-built machines, incorporating custom-designed parts, including entire hot ends, that showcase his ingenuity and technical expertise.

After completing his mechanical engineering degree at Brigham Young University-Idaho, Brent ventured into the oil industry, where he engaged in research and development work that frequently involved additive-manufactured parts for his experiments. He subsequently acquired an Ultimaker for personal use, which he employed to produce small objects for sale online, leading to a side business that grew rapidly, with a B2B arm that catered to clients requiring prototypes and showpieces for trade shows. This B2B arm was eventually acquired by one of his clients, and Brent continued consulting through them. Brent's consultancy services were in high demand, enabling him to help firms integrate AM into their products and thought processes.

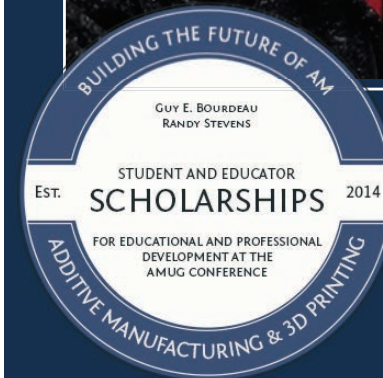
More recently, Brent has been managing Labconco's AM program, overseeing the company's expanding fleet of printers and leveraging design for additive manufacturing (DFAM) principles to enhance existing products. His contributions have yielded significant cost savings for the company, streamlined assembly procedures, resolved supply chain issues, and accelerated the development of new products. Moreover, his use of AM parts has been incorporated into nearly every major product manufactured by Labconco.

In his quest to deepen his expertise in AM, Brent returned to school at Penn State University, where he is pursuing a master's degree in Additive Manufacturing and Design, focusing his research on MEX to Metal AM and personnel protection in AM. Brent's experiences have made him acutely aware of the potential health hazards associated with AM. He is working to advance research in this area to develop safety standards that will help safeguard AM users.

When not immersed in work or academic pursuits, Brent finds time to teach youth groups the intricacies of AM, applying 3D printing to a diverse range of activities, from designing topology-optimized, multi-material pinewood derby cars to crafting custom lightsabers. His mentorship has inspired many young people to pursue their interests in 3D printing, with many acquiring their own printers and applying them to an array of creative projects, including household items, robotics competitions, and custom Lego pieces.



**BRENT GRIFFITH**  
Student  
Penn State University



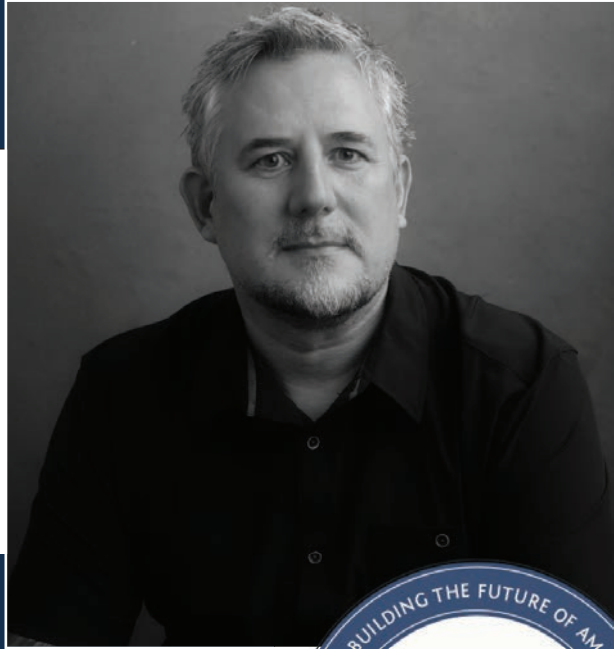
## GUY E. BOURDEAU SCHOLARSHIP RECIPIENTS

- 2015 - Kaiyi Jiang, The University of Texas at Austin
- 2016 - Dr. Yaser Shanjani, Stanford University School of Medicine
- 2017 - Claire Belson, University of Alabama
- 2018 - Daniel Delgado Camacho, The University of Texas at Austin
- 2019 - Victoria Sears, University of Michigan
- 2020 - Kate Schneidau, University of Louisville
- 2021 - Sean Dobson, University of Cincinnati

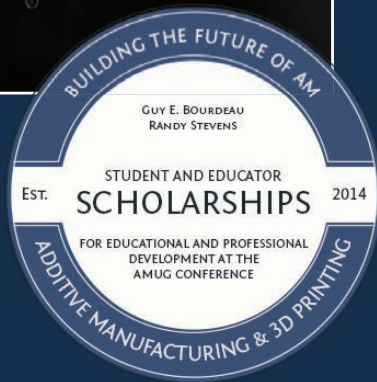


2023 Financial Supporter of Guy E. Bourdeau Scholarship

# RANDY STEVENS EDUCATOR SCHOLARSHIP



**LES KALMAN**  
Associate Professor  
Western University



## RANDY STEVENS SCHOLARSHIP RECIPIENTS

- 2015 - Lydia Nelson, Whitman-Hanson Regional High School
- 2016 - Dr. Nathan Patterson, Milwaukee School of Engineering
- 2017 - Dr. Haijun Gong, Georgia Southern University
- 2018 - Dr. Emrah Celik, PhD, University of Miami
- 2019 - Wenchao Zhou, University of Arkansas
- 2020 - Chris Kaminsky, Muskegon Community College
- 2021 - John Sorvillo, Westwood Prep Academy at New Beginnings

Dr. Les Kalman graduated with a DDS in 1999 and then completed additional training as a GPR in 2000, both from Western University. His solo private dental practice focused on digital dentistry, implants, hospital dentistry and externally-funded patient-based clinical research. He maintained a position as an adjunct clinical professor at Western in the departments of oral surgery, periodontics, prosthodontics and emergency. He then transitioned to full-time academics in 2011. He is currently an educator and researcher as an assistant professor in Restorative Dentistry at the Schulich School of Medicine & Dentistry at Western University.

His teaching encompasses the supervision of senior dental students in radiology. He remains the course director and main lecturer for two third year didactic courses (1) Diagnosis & Treatment Planning and (2) Patient Management. He has also developed and instructed a novel digital dentistry course, which employed an experiential learning hands-on program with digital scanning, CAD/CAM and 3D printing. For graduate students, he instructs the GPR and OMFS residents on implant complications, digital dentistry and 3D printing.

His research focuses on medical devices and technologies, with an emphasis on additive manufacturing and software solutions. He remains active with externally-funded investigations, has delivered conference talks, presentations and CE courses locally, nationally and internationally and has more than 60 research publications, reviews, book chapters, editorials and case reports. He holds two patents, a trademark and has translated technologies to industry.

He served on the Board of Directors for the University of Western Ontario Faculty Association and the Canadian Association of Public Health Dentistry. He currently serves on the Standards Council of Canada; the Ambassadors Circle, Advanced Credentialing Committee and the Board of Directors for the International Congress of Oral Implantologists. He has been recognized as an Academic Associate Fellow (American Academy of Implant Dentistry), Fellow, Master and Diplomate (International Congress of Oral Implantologists), Fellow (Academy of Osseointegration), Fellow (American College of Dentist) and Fellow (International Academy of Dental-Facial Esthetics). He is a Schulich Alumni of Distinction, received the Merck Patients First award and was a Consumer Electronic Show (CES) Innovation Award Honoree for Software and Mobile Apps.



2023 Financial Supporter for the Randy Stevens Scholarship



# 2022 TECHNICAL COMPETITION WINNERS

The AMUG Technical Competition provides a forum for users of additive manufacturing technologies to display their unique applications as well as their finishing capabilities.

## ADVANCED CONCEPTS

The Advanced Concepts category recognizes individuals and their companies for exemplary work with additive manufacturing technologies. Entries in this category will "push the envelope" for a particular technology or a combination of technologies. Unique applications, processes, and/or utilization are desired in this category.

## ADVANCED FINISHING

The Advanced Finishing category has been created to recognize the efforts of those whom we often overlook when evaluating a model. The designers and engineers may hatch a concept, but it is often the parts finishers, model makers, painters and others that bring a prototype to life.

ADVANCED CONCEPTS



2022 ADVANCED CONCEPTS WINNER  
"Metal 3-D Printing Raises the Bar for the Army's Jointless Hull Program"  
Nanci Hardwick, MELD Manufacturing

ADVANCED FINISHING



2022 ADVANCED FINISHING WINNER  
"Mars Attacks"  
Bill Braune, Dinsmore, Inc.

## 2023 AMUG Technical Competition at the AMUGexpo

**Monday, March 20**  
**6:00pm-10:00pm**  
**Salon B, Lower Level**

Visit the Technical Competition in Salon B during the AMUGexpo. Entries in both Advanced Concepts and Advanced Finishing will be on display. During the night, DINO judges will evaluate the entries and select a winner in each category.

### 2022 TECHNICAL COMPETITION WINNERS PRESENTATION

**Wednesday, March 22 at 9:00am**  
**International Ballroom, 2nd Floor**

2022 ADVANCED CONCEPTS WINNER  
"Metal 3-D Printing Raises the Bar for the Army's Jointless Hull Program"  
Nanci Hardwick, MELD Manufacturing

2022 ADVANCED FINISHING WINNER  
"Mars Attacks"  
Bill Braune, Dinsmore, Inc.

**2023 Winners Announced**  
**Wednesday, March 22 at 10:30am**  
**International Ballroom, 2nd Floor**  
2023 Technical Competition Winners announced

### MEMBERS CHOICE

**View all Technical Competition Entries!**  
**Monday, March 20 - Wednesday, March 22**  
**Open During Conference Hours**  
**Salon B, Lower Level**

Technical Competition entries will be on display in Salon B on the Lower Level until 4:00pm on Wednesday, March 22.  
Voting for Members Choice will be open from Monday, March 20 at 6:00pm until Tuesday, March 21 at 9:00pm.

**MEMBER'S CHOICE AWARD**  
**Thursday, March 23 at 9:00am**  
**International Ballroom, 2nd Floor**

2022 MEMBER'S CHOICE WINNER  
presents at 9:00am  
2023 Member's Choice Winner will be announced at 9:15am



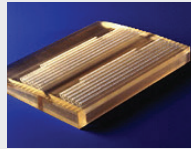
2022 MEMBER'S CHOICE WINNER  
"Metal 3D Printed Bathroom Faucet"  
Jung Kyu Im and Daniel Goncalves, Custom Prototypes

# TECHNICAL COMPETITION HISTORY

## A LOOK BACK AT THE 90'S AND USER INNOVATION WITH STEREOLITHOGRAPHY



1994 SL Excellence Award Winner  
Rear Wiper Motor Cover  
Ford Motor Company



1995 SL Excellence Award Winner  
Pressurized Wing Design  
Northrop Grumman  
Boris Fritz



1996 SL Excellence Award Winner  
SL Prototype Exhaust Manifold  
Ford Motor Company



1997 SL Excellence Award Winner  
Surface-Mount Adapters for the Electronics Industry  
Pure Fluid Magic

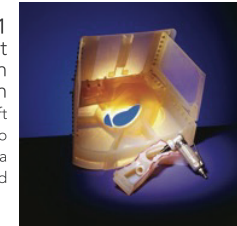


1998 SL Excellence Award Winner  
Thin Shell Nickel Tooling  
Tupperware

The Technical Competition dates back to 1994. Initially known as the SL Excellence Award Under the 3D Systems Users Group, the competition highlighted the advances with stereolithography. As the Users Group evolved into AMUG and opened its membership to all additive manufacturing technology, the AMUG Technical Competition has become a highly sought after peer award. The Technical Competition is judged by users of additive manufacturing technology making the award the ultimate recognition For Users, By Users.

2001  
Aircraft Repair Kit  
Northrop Grumman  
Chris Ferren

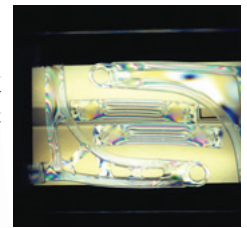
Aircraft Repair Kit, which is used for in-the-field aircraft modifications. The kit comprises a guide unit that attaches to the inside of the aircraft, allowing a tool to pinpoint the area to be modified or repaired



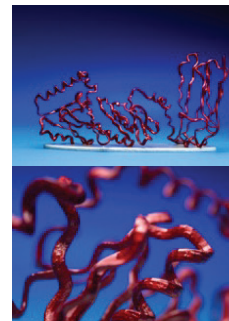
2001  
Fire-suppression service unit for the M1A1/A2 Main Battle Tank  
Benet Laboratories, research arm of the U.S. Army  
Tim O'Connor



2001  
"Stressfreezing" scaled prototype  
automotive components  
DaimlerChrysler  
Thomas Sorovetz



2006  
Flexible Wing from  
Cirrus Design made  
from DuraForm Flex.  
Northern Lights  
Technology Center



2019  
Cello  
University of Wisconsin  
Maddie Frank  
Frank's entry, a 3D-printed electric cello was both innovative and elegant with an artistic, abstract interpretation of the instrument's classic look. Through laborious effort and carefully thought-out techniques, Frank translated the distressed elements, wood grains, and overall character of the original to her 3D-printed version.



**Sunday, March 19 - Thursday, March 23**  
**8th Street Registration, Lobby Level**

# REGISTRATION SPEAKER CENTER MOBILE APP

## SUNDAY, MARCH 19

Registration and Badge Pick-up 10:00am - 8:00pm  
Speaker Center and Mobile App 10:00am - 6:00pm

## MONDAY, MARCH 20

Registration and Badge Pick-up 7:00am - 8:00pm  
Speaker Center and Mobile App 7:00am - 12:30pm  
1:00pm - 4:30pm

## TUESDAY, MARCH 21

Registration and Badge Pick-up 7:00am - 4:00pm  
Speaker Center and Mobile App 7:00am - 12:30pm  
1:00pm - 3:30pm

## WEDNESDAY, MARCH 22

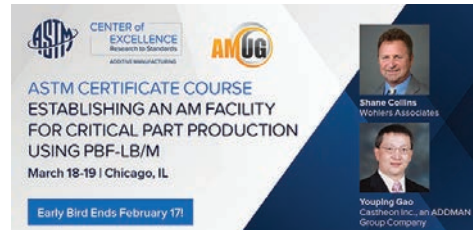
Registration and Badge Pick-up 7:00am - 6:00pm  
Speaker Center and Mobile App 7:00am - 12:30pm  
1:00pm - 4:00pm

## THURSDAY, MARCH 23

Registration and Badge Pick-up 7:00am - 11:00am  
Speaker Center and Mobile App 7:00am - 12:30pm

# PRE-CONFERENCE ACTIVITIES

## Saturday and Sunday Certification Course



### ASTM Certificate Course Establishing an Additive Manufacturing Facility for Critical Part Production

**Course Dates:**  
Saturday, March 18 (9:00am – 5:00pm)  
Sunday, March 19 (9:00am – 3:00pm)

**Course Location:**  
Hilton Chicago, Chicago, IL  
before the 2023 AMUG Conference

**Course Instructors:**  
Shane Collins, Wohlers Associates powered by ASTM International  
Dr. Youping Gao, Casttheon Inc., an ADDMAN Group Company

**Cost:** \$699.00 (early bird rate-ends February 17); \$849.00 after  
**Register:** <https://na.eventscloud.com/ereg/index.php?eventid=728821&>  
**Maximum class size:** 40

This course is aimed at individuals with existing experience in AM, who wish to understand all the information needed to update an existing facility or create a new facility for the purpose of manufacturing safety critical parts using the laser powder bed fusion (PBF-LB/M) process with metal powders.

The 2-day training course is based on ISO and ASTM standards. The course will provide detailed instruction on all aspects of the operations from feedstock selection and qualification to processing and post processing (IQ, OQ, PQ) using real life candidate parts from the attendees.

Approximately two weeks after the course, there will be an online exam for those that wish to obtain a certificate.

Topics covered include:

#### Day 1

- Equipment selection based on candidate parts and ROI calculations
- Facility considerations, requirements, and controls
- Establishing factory and site acceptance tests
- Workflow and efficiency
- Make or buy decisions with post processing
- Machine calibration and certification
- Metallurgical process qualification

#### Day 2

- QMS for all powder bed fusion work instruction
- Digital twin definition
- Part qualification considerations
- Business plans and growth strategy
- Personnel training requirements
- Preventive maintenance
- Manufacturing plan creation
- Inspection and NDE for production
- Considerations for NASA 6030 spec
- In-situ monitoring

## Sunday Off-Site Tours

On Sunday, March 19, 2023, AMUG Conference attendees can tour DMG MORI or Impossible Objects.

Please note that advanced registration is required and there is a cap on the number of people that can attend. Transportation between the Hilton Chicago and the Off-Site Tours will be provided by sponsoring company.

Offsite tour information can be found on the AMUG website: <https://www.amug.com/tours/>

### Tour DMG MORI

AMUG is pleased that DMG MORI Chicago is once again opening its doors to AMUG members for an exclusive offsite tour of their Hoffman Estates facility. The tour will provide an in-depth look at their AM process chain, including the design and programming phase to building and finishing components.

### Tour Impossible Objects

Impossible Objects invites you to tour its Northbrook facility. The tour will provide members with a look into applications of their CBAM composite printing process, as well as a stroll through the factory floor.



## THE MANUFACTURING LOOP

*presented by AMUG and SME*

**Sunday, March 19 - Thursday, March 23**  
2nd Floor across from Normandie Lounge

As Rapid Prototyping evolved into Additive Manufacturing (AM), one of the shared visions has been to put AM on the manufacturing floor to produce production components, inserts for tooling, end of arm robotics, fixtures, gauges, and more. One of the barriers to widespread adoption of this vision has been the understanding of the complexities of traditional manufacturing, such as equipment, Geometric Dimensioning and Tolerancing (GD&T), and tooling.

With the goal of bridging this knowledge gap, the AMUG organization and SME have teamed up for a second year to present a compilation of manufacturing videos called "The Manufacturing Loop". These short videos (provided by SME) will showcase several traditional manufacturing processes, such as CNC Machining, Injection Molding, Finishing Processes, and more. The videos will also provide an overview on other areas of manufacturing, including GD&T, and automation on the manufacturing floor. These videos are a valuable resource for individuals and organizations looking to expand their knowledge of manufacturing and better adopt additive manufacturing onto their factory floor.

The Manufacturing Loop will be on display during the AMUG Conference on the second floor, across from the Normandie Lounge. There will be a poster next to each of the video monitors that outlines what is highlighted in each video, and a QR Code with a link so you can access the content at a later date. Access will also be available through the AMUG mobile app.

BOOTH AREA		PRE-CONFERENCE PROGRAMS ADDITIONAL REGISTRATION AND COSTS APPLY		SPONSOR AND EXHIBITOR ACTIVITY	AMUG PROGRAM - VOLUNTEER ACTIVITY
AMUGexpo CLOSED					
AMUGexpo Closed	8:00am - 9:00am			AMUGexpo Sponsor and Exhibitor set-up continues	
Sponsor and Exhibitor Move-In and Setup 8:00am - 8:00pm	9:00am - 5:00pm	ASTM Certificate Course Establishing an Additive Manufacturing Facility for Critical Part Production  Location: PDR 2, 3rd Floor, Hilton Chicago Saturday, March 18 9:00 am – 5:00 pm  ASTM Certification Course continues Sunday, March 19 9:00 am – 3:00 pm  Cost: \$699.00 (early bird rate-ends February 17); \$849.00 after  Register: <a href="https://na.eventscloud.com/ereg/index.php?eventid=728821&amp;">https://na.eventscloud.com/ereg/index.php?eventid=728821&amp;</a>  Maximum class size: 40		Location: Salon A, C, and D All setup to be completed by Sunday, March 19 at 1:00pm	AMUG Program Set-Up with Volunteers
AMUGexpo CLOSED	5:00pm - 12:00am	ALL AREAS CLOSED			

## AMUG CONFERENCE BEGINS SUNDAY, MARCH 19, 2023

BOOTH AREA		PRE-CONFERENCE PROGRAMS ADDITIONAL REGISTRATION AND COSTS APPLY		SPONSOR AND EXHIBITOR ACTIVITY	AMUG PROGRAM	
AMUGexpo CLOSED  Sponsor and Exhibitor Move-In and Setup 8:00am - 1:00pm	8:00am-8:30am	ASTM Certificate Course Establishing an Additive Manufacturing Facility for Critical Part Production  Location: PDR 2, 3rd Floor, Hilton Chicago ASTM Certification Course continues Sunday, March 19 9:00 am – 3:00 pm  Cost: \$699.00 (early bird rate-ends February 17); \$849.00 after  Register: <a href="https://na.eventscloud.com/ereg/index.php?eventid=728821&amp;">https://na.eventscloud.com/ereg/index.php?eventid=728821&amp;</a>  Maximum class size: 40		Sponsors and Exhibitors continue setting up		
	8:30am-9:00am					
	9:00am-9:30am					
	9:30am-10:00am					
AMUGexpo CLOSED	10:00am				REGISTRATION OPEN Location: Lobby Level  10:00am - 8:00pm Badge Pick-up  10:00am-6:00pm Speaker Center Mobile App Center	
	1:00pm			AMUGexpo area closed for cleaning		
	3:00pm	Pre-Conference Activities conclude at 3:00pm		Sponsors and Exhibitors allowed into area.		NEW MEMBER WELCOME Derek Ellis, New Member Chair Location: Grand Ballroom, 2nd Floor 3:00pm - 4:00pm
AMUGexpo OPEN 4:00pm - 10:00pm	4:00pm-10:00pm	AMUGEXPO OPENS (Conference Attendees and Badge Holding Diamond, Platinum, Gold, and Exhibitor Booth Staff - AMUG does not sell AMUGexpo only passes)  AMUGexpo   Dinner and Networking Salon A, C, D, Lower Level				

BOOTH AREA	TIME	SESSIONS AND ACTIVITIES			LOCATION
AMUGexpo Area CLOSED	7:00am - 8:00am	BREAKFAST Networking Breakfast - Conference Attendees and Badge Holding Diamond, Platinum, Gold, and Exhibitor Booth Staff			Location: Grand Ballroom, Normandie Lounge, Boulevard, 2nd Floor
		AMUG Program - Open to all AMUG Members (All Attendees with Full Conference Pass)			
	8:00am - 10:00am	AMUG INSIGHTS AND HIGHLIGHTS AMUG Welcome Insights with AMUG President, Mark Abshire AMUG Conference Highlights with AMUG Director, Education & Conference, Jordan Weston 2023 Scholarship Winners Highlights with AMUG Scholarship Committee Chair, Rajeev Kulkarni and Scholarship Winners Guy E. Bourdeau Winner - Brent Griffith, Penn State University Randy Stevens Winner - Les Kalman, Western University Diamond Sponsor Insights and Highlights - what you need to know, with Todd Grimm, T.A. Grimm & Associates			Location: International Ballroom, 2nd Floor
AMUGexpo OPEN 10:00am - 2:30pm	10:00am - 10:30am	BREAK			Location: AMUGexpo area in Salon A, B, C, and D, Lower Level
	10:30am - 12:00pm	AMUGexpo Opens at BREAK			Location: AMUGexpo area in Salon A, B, C, and D, Lower Level
	12:00pm - 1:15pm	LUNCH Networking Lunch - Conference Attendees and Badge Holding Diamond, Platinum, Gold, and Exhibitor Booth Staff			Location: AMUGexpo area in Salon A, B, C, and D, Lower Level
		BREAKOUT SESSIONS BEGIN			
		AMUG Program - Open to all AMUG Members (All Attendees with Full Conference Pass)			
	Track	Aerospace, Transportation, Defense	AM Metal Technologies	Healthcare (Medical & Dental)	Scanning and Metrology
	Room Floor	International Ballroom NORTH 2nd Floor	International Ballroom SOUTH 2nd Floor	Continental A Lobby Level	Continental B Lobby Level
AMUGexpo CLOSED 2:30pm - 6:00pm	1:30pm - 2:30pm	PRESENTATION (I) Additive Manufacturing in the Automotive Industry - Potentials, Requirements and Current Barriers Maximilian Binder BMW Group	PANEL (II) Metal Additive Post-Processing, Surface Finishing Panel MODERATOR: Paul Gradl, NASA Marshall Space Flight Center PANELISTS: Ray Amin, Extrude Hone Tim Hall, Faraday Technology, Inc. Justin Michaud, REM Surface Engineering Jim Ringer, Tech Met Inc. JT Stone, MicroTek Finishing	PRESENTATION (I) 30 MIN 3D Printed Phantoms – Working with Radio Opaque Materials Patrick Gannon Ricoh USA, Inc PRESENTATION (I) 30 MIN Realizing the Value Proposition of Point-of-Care Manufacturing Natalia von Windheim The Ohio State University	WORKSHOP (B) An Introduction to Basic Measurement and Metrology for Additive Manufacturers WORKSHOP LEAD: Giles Gaskell, Hexagon WORKSHOP FACILITATORS: Mark Abshire Bob Diaz, College of Southern Nevada Derek Ellis, Authentise
	2:30pm - 3:00pm	BREAK			Location: Continental Foyer (Lobby Level), International Foyer (2nd Floor), 3rd Floor Hallway
	3:00pm - 4:00pm	PRESENTATION (I) Qualification of Additively Manufactured Aerospace Hardware Humna Khan ASTRO Mechanical Testing Laboratory Jonathan Cohen MIMO Technik	PRESENTATION (I) Adopting and Adapting Additive Standards for Metal Additive: A Case Study Garrett Hawkins Optisys	WORKSHOP (I) Consensus Building Exercise in Designing and Presenting AM Process Validations WORKSHOP LEAD: Meredith Vanderbilt, Empirical Technologies	WORKSHOP (B) Scanning and Metrology WORKSHOP LEAD: Giles Gaskell, Hexagon WORKSHOP FACILITATORS: Derek Ellis, Authentise Bob Renella, GoEngineer Arthur Young-Spivey, Direct Dimensions
AMUGexpo OPEN 6:00pm - 10:00pm	4:00pm - 4:30pm	TRANSITION - NO BREAK			
	4:30pm - 5:30pm	PRESENTATION (A) Explorations into Printing Thin Wall Geometries for Heat Exchanger Applications Shazaer Yusef Boeing	PRESENTATION (I) Innovative Technology for a Gas Turbine: 3D-Printed Turbine Vane with In-Wall Cooling Tad Steinberg Magnus Hallberg Siemens Energy Additive Mfg.	PRESENTATION (B) 30 MIN Utilization of Various Additive Manufacturing Technologies at Mayo Clinic Victoria Sears Mayo Clinic PRESENTATION (I) 30 MIN Additive Manufacturing Applications for Intelligent Medical Device Implants Kirk Gronda, Cirtec Medical Caroline Alting, Restor3D Joe Copley, Cirtec Medical	PANEL (I) Measurement, Metrology and 3D Scanning for Additive Manufacturing MODERATOR: Bob Renella, GoEngineer PANELISTS: Giles Gaskell, Hexagon Derek Ellis, Authentise Bob Diaz, College of Southern Nevada Arthur Young-Spivey, Direct Dimensions
	5:30pm - 6:00pm	ALL SESSIONS CLOSE AT 5:30PM			
AMUGexpo OPEN 6:00pm - 10:00pm		AMUGexpo (Conference Attendees and Badge Holding Diamond, Platinum, Gold, and Exhibitor Booth Staff - AMUG does not sell AMUGexpo only passes)			
	6:00pm - 10:00pm	AMUGEXPO OPEN Location: Salon A, C, and D, Lower Level	DINNER Networking Dinner - Conference Attendees and Badge Holding Diamond, Platinum, Gold, and Exhibitor Booth Staff Location: Salon A, B, C, and D, Lower Level	TECHNICAL COMPETITION Location: Salon B, Lower Level  Member's Choice Voting open in the AMUG Mobile App	

TIME	SESSIONS AND ACTIVITIES				LOCATION			
7:00am - 8:00am	BREAKFAST Networking Breakfast - Conference Attendees and Badge Holding Diamond, Platinum, Gold, and Exhibitor Booth Staff				Location: Grand Ballroom, Normandie Lounge, Boulevard, 2nd Floor			
	AMUG Program - Open to all AMUG Members (All Attendees with Full Conference Pass)							
8:00am - 10:00am	AMUG INSIGHTS AND HIGHLIGHTS AMUG Welcome Insights with AMUG President, Mark Abshire AMUG Conference Highlights with AMUG Director, Education & Conference, Jordan Weston 2023 Scholarship Winners Highlights with AMUG Scholarship Committee Chair, Rajeev Kulkarni and Scholarship Winners Guy E. Bourdeau Winner - Brent Griffith, Penn State University Randy Stevens Winner - Les Kalman, Western University Diamond Sponsor Insights and Highlights - what you need to know, with Todd Grimm, T.A. Grimm & Associates				Location: International Ballroom, 2nd Floor			
10:00am - 10:30am	BREAK				Location: AMUGexpo area in Salon A, B, C, and D, Lower Level			
10:30am - 12:00pm	AMUGexpo Opens at Break				Location: AMUGexpo area in Salon A, B, C, and D, Lower Level			
12:00pm - 1:15pm	LUNCH Networking Lunch - Conference Attendees and Badge Holding Diamond, Platinum, Gold, and Exhibitor Booth Staff				Location: AMUGexpo area in Salon A, B, C, and D, Lower Level			
	BREAKOUT SESSIONS BEGIN							
	SPONSOR PROGRAM - Open to all AMUG Members (All Attendees with Full Conference Pass)							
Track	Platinum Speaking Session	Platinum Speaking Session	Diamond Speaking Session	Diamond Speaking Session	Diamond Speaking Session	Diamond Training Session	Diamond Training Session	Diamond Training Session
Room Floor	Marquette Room 3rd Floor	Joliet Room 3rd Floor	Waldorf 3rd Floor	Astoria 3rd Floor	Williford A 3rd Floor	Williford B 3rd Floor	Williford C 3rd Floor	PDR2 3rd Floor
1:30pm - 2:30pm	3D SYSTEMS PRESENTATION (B) New Applications from Recent Advances in AM Technologies Brent Stucker 3D Systems	RENISHAW PRESENTATION (I) The Underneath of Supportless Low Angle Printing in Laser Powder Bed Fusion Mathieu Brochu, McGill University John Laureto, Renishaw	STRATASYS PRESENTATION (I) Automakers Accelerate Production with New Powder Bed Technology MODERATOR: Fadi Abro, Stratasys PANELISTS: Jonathan Dankenbring, Rivian Automotive Dallas Martin, Toyota North America Kevin Sheehy, Stratasys Direct Manufacturing	EOS PRESENTATION (I) Exploring Viable Copper Solutions for Additively Manufactured Space Applications Ankit Saharan EOS North America Ally Maly Launcher	GOENGINEER PRESENTATION (I) Expert Strategies and Tricks of the Trade Using Polymer AM Richard Cromwell GoEngineer	MELTIO PRESENTATION (I) Opening New DED Horizons Through Dedicated Tool Path Generation Lukas Hoppe Meltio	WÜRTH ADDITIVE GROUP WORKSHOP (A) The Future of Supply Chain is Digital - Corporate Conversations Mikhail Gladkikh AJ Strandquist Würth Additive Group	EVONIK PRESENTATION (B) 30 MIN How Efficient Polyamide 12 Production Drives Sustainable 3D Printing Lisa Mueller, Yanfeng Lu Amanda Verissimo Evonik  PRESENTATION (I) 30 MIN Just When You Thought It Was Safe To Go Back Into Water Mike Scianna Evonik
2:30pm - 3:00pm	BREAK				Location: Continental Foyer (Lobby Level), International Foyer (2nd Floor), 3rd Floor Hallway			
3:00pm - 4:00pm	ESSENTIUM PANEL (B) Responding to the Additive Manufacturing Adoption Climate Panel MODERATOR: Blake Teipel, Essentium PANELISTS: Will Chiang, Essentium Garrett Harmon, Essentium Nirup Nagabandi, Essentium Elisa Teipel, Essentium	MATERIALISE PANEL (A) AM Cybersecurity Challenges: How to Protect Data in Highly Connected Manufacturing Environments MODERATOR: Nora Toure, Materialise PANELISTS: Chris Adkins, Materialise Edward Herderick, NSL Analytical Services Mark Cotteleer, Deloitte	DMG MORI PRESENTATION (I) Blue Laser DED- Innovated Applications Nils Niemeyer DMG MORI	TEKNA PRESENTATION (I) Metal AM: An Overview from Plasma Atomized Powders to Quality L-PBF Parts Amir Nobari, Tekna Swathi Vunnam, AddUp Inc	DYNDRITE PRESENTATION (I) Aconity, SLM, EOS, and Renishaw Users, Accelerating Materials and Process Development Harshil Goel Dyndrite	FORMLABS WORKSHOP (A) Advanced Ceramic and Metal Coatings for SLA and SLS Parts Chris Adams Peter Unger Formlabs	ADDITEC PRESENTATION (I) Additive Manufacturing for Defense Brian Matthews ADDITEC  session to repeat on Tuesday	GE ADDITIVE WORKSHOP (I) EBM Build Process Analyzer: Understanding a Build Job's Performance Dave Bartosik GE Additive
4:00pm - 4:30pm	TRANSISTION - NO BREAK							
4:30pm - 5:30pm	ADDUP PRESENTATION (I) Rethinking the Production Line with 3D-Printed Extrusion Dies Sammy Passell AddUp	RP AMERICA  Closed Session	NEXA3D PRESENTATION (I) Industrializing Desktop 3D Printing Michael Currie Nexa3D	Closed Session	Closed Session	Closed Session	Closed Session	Closed Session
5:30pm - 6:00pm	ALL SESSIONS CLOSE AT 5:30PM							
	AMUGexpo (Conference Attendees and Badge Holding Diamond, Platinum, Gold, and Exhibitor Booth Staff - AMUG does not sell AMUGexpo only passes)							
6:00pm - 10:00pm	AMUGEXPO OPEN Location: Salon A, C, and D, Lower Level		DINNER Networking Dinner - Conference Attendees and Badge Holding Diamond, Platinum, Gold, and Exhibitor Booth Staff Location: Salon A, B, C, and D, Lower Level			TECHNICAL COMPETITION Location: Salon B, Lower Level  Member's Choice Voting open in the AMUG Mobile App		



BOOTH AREA	TIME	SESSIONS AND ACTIVITIES				LOCATION
Diamond and Platinum Sponsors Booth Area CLOSED  7:00am - 10:00am	7:00am - 8:00am	<b>BREAKFAST</b> Networking Breakfast - Conference Attendees and Badge Holding Diamond and Platinum Booth Staff				Location: Grand Ballroom, Normandie Lounge, Boulevard, 2nd Floor
		AMUG Program - Open to all AMUG Members (All Attendees with Full Conference Pass)				
	8:00am - 9:00am	<b>KEYNOTE:</b> Collaborations Between an Animator, an Architect, and a Surgeon: The Keys to Impactful Innovation in Medicine Rob Ducey, LAIKA Studios Nicholas Jacobson, CU Anschutz Medical Campus				Location: International Ballroom, 2nd Floor
	9:00am - 10:00am	<b>AMUG ACKNOWLEDGEMENTS</b> Celebrating 25 Years of DINO 2023 DINO Awards   Distinguished INnovator Operator Awards - AMUG Director-at-Large and DINO Committee Chair, Gary Rabinovitz,				Location: International Ballroom, 2nd Floor
Diamond and Platinum Sponsors Booth Area OPEN  10:00am - 12:00pm	10:00am - 10:30am	<b>BREAK</b>				Location: Continental Foyer (Lobby Level), 3rd Floor Hallway
		<b>BREAKOUT SESSIONS BEGIN</b>				
		AMUG Program - Open to all AMUG Members (All Attendees with Full Conference Pass)				
	Track	Aerospace, Transportation, Defense	Education and Training	AM Materials	Software	AM Non-Metal Technologies
	Room Floor	International Ballroom NORTH 2nd Floor	International Ballroom SOUTH 2nd Floor	Continental A Lobby Level	Continental B Lobby Level	Salon C Lower Level
	10:30am - 12:00pm	<b>PANEL (I)</b> Advanced Product Quality Planning (APQP) Process in Additive Manufacturing MODERATOR: Ted Anderson, GE PANELISTS: Cody Cochran, Azoth 3D Carl Dekker, Met-L-Flo Inc Jay Haubenstricker, Ford Motor Company Brennon White, GM	<b>PRESENTATION (B)</b> 1 HR Introduction to Additive Manufacturing and Key Safety Considerations Paul Bates ASTM <b>PRESENTATION (I)</b> 30 MIN Environmental Benefits of Additive Manufacturing - A Comparative Life Cycle Assessment Sherri Monroe Additive Manufacturer Green Trade Association (AMGTA)	<b>PANEL (I)</b> State-of-the-Art in Vat Photopolymerization: Where We Are and Where We Are Going MODERATOR: Callie Higgins, National Institute of Standards and Technology PANELISTS: Andrew Graves, Covestro Additive Manufacturing Stephanie Benight, Tactile Materials Solutions Mike Idacavage, Radical Curing Technologies Neil Cramer, Arkema	<b>PRESENTATION (I)</b> 45 MIN DFAM Opportunities and Enablement Steven Szymczek 3D Printing Mentality <b>PRESENTATION (A)</b> 45 MIN Flexible Titanium - Novel Computational Modeling of Advanced Structures for Hyper-Strain Applications Matthew Shomper Tangible Solutions	<b>WORKSHOP (B)</b> Concrete Rheology for Additive Manufacturing - Workshop WORKSHOP LEAD: Alex Roschli, Oak Ridge National Laboratory WORKSHOP FACILITATORS: Oak Ridge National Laboratory Team Celeste Atkins Thomas Feldhausen Brian Post (Note: this session takes place in Salon C)
Booth Area CLOSED for Lunch  12:00 - 1:30pm	12:00pm - 1:15pm	<b>NETWORKING LUNCH</b> Networking Lunch - Conference Attendees and Badge Holding Diamond and Platinum Booth Staff				Location: Grand Ballroom, Normandie Lounge, Boulevard, 2nd Floor
	Track	Aerospace, Transportation, Defense	Education and Training	AM Materials	Software	Metal Casting
	Room Floor	International Ballroom NORTH 2nd Floor	International Ballroom SOUTH 2nd Floor	Continental A Lobby Level	Continental B Lobby Level	Continental C Lobby Level
Diamond and Platinum Sponsors Booth Area OPEN  1:30pm - 4:00pm	1:30pm - 2:30pm	<b>PRESENTATION (I)</b> Various Applications and Associated Lessons Learned for Unmanned Aerial Systems for Defense Stephen Fournier General Atomics Aeronautical Systems Inc.	<b>PANEL (B)</b> Workforce Development Panel MODERATOR: Jeannine Kunz, SME PANELISTS: Ed Tackett, Wurth Additive Group Rajeev Kulkarni, 3D Systems Austin Schmidt, Additive Engineering Solutions	<b>PRESENTATION (I)</b> Applying Machine Learning to Enable Rapid Material Property Allowables Development for Additive Manufacturing Annie Wang Servol	<b>PRESENTATION (B)</b> Scaling AM at Deutsche Bahn: Driven by Automation of Repetitive Design Processes Ole von Seelen trinckle Stefanie Brickwede Deutsche Bahn	<b>PRESENTATION (B)</b> Metallurgy 101 for Additive Manufacturing Miranda Moschel Kymera International Sarah Jordan Skuld LLC
	2:30pm	<b>BREAK</b>				Location: Continental Foyer (Lobby Level), International Foyer (2nd Floor), 3rd Floor Hallway
	3:00pm - 4:00pm	<b>PRESENTATION (I)</b> Metal Additive Manufacturing for Rocket Engines: Successes and Failures Paul Gradl NASA Marshall Space Flight Center	<b>WORKSHOP (B)</b> <b>PART I</b> Silicone Molding & Polyurethane Casting Bill Molitor Rampf Group, Inc  <i>Part II of Workshop will be held Wednesday March 22 at 1:30pm Requires attendance at Part I</i>	<b>PRESENTATION (I)</b> Role of Data Management for Materials Development and Validation Mike Vasquez 3Degrees	<b>PANEL (I)</b> Use of Data in Additive Manufacturing Operations MODERATOR: Andre Wegner, Authentise PANELISTS: Steve Fournier, General Atomics Aeronautical Systems Yan Lu, NIST Nicholas Mulé, Boeing	<b>PANEL (I)</b> 3D Printing in the Foundry - Expensive Toy or Real Engineering Tool? MODERATOR: Thomas Becker, ACTech North America, Inc PANELISTS: Dave Rittmeyer, Matthews International Yoya Fukuda, Kimura Foundry America Thomas Sorovetz, T.A. Sorovetz LLC
	4:00pm - 5:00pm	<b>ALL SESSIONS CLOSE AT 4:00PM</b>				
Diamond and Platinum Sponsors Booth Area CLOSED  4:00pm - 10:00pm		AMUG Program - Open to all AMUG Members (All Attendees with Full Conference Pass) and Guests with a Paid Off-Site Event Ticket				
	5:00pm	Hilton Chicago	Palmer House	<b>Important Information</b> <ul style="list-style-type: none"> <li>• Badges are required to board the bus and attend the Off-site Dinner and Event.</li> <li>• All attendees must take the AMUG bus to attend the event. Due to safety and security, AMUG does not allow for 3rd party transportation.</li> <li>• Guest passes may be purchased at the AMUG Registration Desk prior to 4:00pm, Tuesday, March 21, 2023.</li> <li>• All guest must be accompanied by an AMUG Member (full conference attendee).</li> <li>• Do not line up for the bus before 5:15pm. Buses will begin boarding at 5:15pm.</li> </ul>		
	5:15pm - 5:30pm	Board Buses for Off-Site Dinner and Networking Event - see mobile app for details Buses Queue and Board at E. Balbo Drive (near hotel registration)	Board Buses for Off-Site Dinner and Networking Event - see mobile app for details Buses Queue and Board at S. Wabash Ave			
	6:00pm - 10:00pm	Tuesday Night Off-Site Dinner and Event				

# TUESDAY, MARCH 21, 2023

TIME	SESSIONS AND ACTIVITIES				LOCATION			
7:00am - 8:00am	BREAKFAST Networking Breakfast - Conference Attendees and Badge Holding Diamond and Platinum Booth Staff				Location: Grand Ballroom, Normandie Lounge, Boulevard, 2nd Floor			
	AMUG Program - Open to all AMUG Members (All Attendees with Full Conference Pass)							
8:00am - 9:00am	KEYNOTE: Collaborations Between an Animator, an Architect, and a Surgeon: The Keys to Impactful Innovation in Medicine Rob Ducey, LAIKA Studios Nicholas Jacobson, CU Anschutz Medical Campus				Location: International Ballroom, 2nd Floor			
9:00am - 10:00am	AMUG ACKNOWLEDGEMENTS Celebrating 25 Years of DINO 2023 DINO Awards   Distinguished INnovator Operator Awards - AMUG Director-at-Large and DINO Committee Chair, Gary Rabinovitz,				Location: International Ballroom, 2nd Floor			
10:00am - 10:30am	BREAK				Location: Continental Foyer (Lobby Level), 3rd Floor Hallway			
	BREAKOUT SESSIONS BEGIN							
	SPONSOR PROGRAM - Open to all AMUG Members (All Attendees with Full Conference Pass)							
Track	Platinum Speaking Session	Platinum Speaking Session	Diamond Speaking Session	Diamond Speaking Session	Diamond Speaking Session	Diamond Training Session	Diamond Training Session	Diamond Training Session
Room Floor	Marquette Room 3rd Floor	Joliet Room 3rd Floor	Waldorf 3rd Floor	Astoria 3rd Floor	Williford A 3rd Floor	Williford B 3rd Floor	Williford C 3rd Floor	PDR2 3rd Floor
10:30am - 11:30am	XACT METAL  Closed Session	MIDWEST PROTOTYPING PRESENTATION (B) Building AM Factories Jim Wise Midwest Prototyping A Prototek Company Carlos Zwickler, AM-Flow	FORMLABS PRESENTATION (I) Mass Customization Is Here: Customer Case Studies From Formlabs Jessie Bergau Kevin Padden Formlabs	MELTIO PRESENTATION (I) Mold-Making with DED and Dual Wire Giorgio Olivieri Meltio	WÜRTH ADDITIVE GROUP PRESENTATION (A) Supercharging Additive Manufacturing with Software Doug Kenik Markforged	DMG MORI PRESENTATION (I) Hybrid Manufacturing and Automation in Selective Laser Melting Lennart Tasche DMG MORI	TEKNA PRESENTATION (B) Plasma Atomized Ti64 Powders with Improved Properties for L-PBF Applications Yevgeni Brif Tekna	GOENGINEER WORKSHOP (I) Snap, Crack & Pop: Hands-on Material Testing Tim Crennen, Sam Cheney, Richard Cromwell, Simon Pinter, Bob Renella, Judah Sher, Jake Wenzel GoEngineer
11:30am - 12:00pm	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed
12:00pm - 1:15pm	NETWORKING LUNCH Networking Lunch - Conference Attendees and Badge Holding Diamond and Platinum Booth Staff				Location: Grand Ballroom, Normandie Lounge, Boulevard, 2nd Floor			
Track	Platinum Speaking Session	Platinum Speaking Session	Diamond Speaking Session	Diamond Speaking Session	Diamond Speaking Session	Diamond Training Session	Diamond Training Session	Diamond Training Session
Room Floor	Marquette Room 3rd Floor	Joliet Room 3rd Floor	Waldorf 3rd Floor	Astoria 3rd Floor	Williford A 3rd Floor	Williford B 3rd Floor	Williford C 3rd Floor	PDR2 3rd Floor
1:30pm - 2:30pm	DINSMORE, AN ADDMAN GROUP COMPANY PRESENTATION (I) Leverage Advanced Materials and Processes to Create Custom Solutions and Client Loyalty Jay Dinsmore Dinsmore, an ADDMAN Group Company	SIEMENS PRESENTATION (I) Insights from Industrializing AM Rich Stephenson Chris Weber Siemens	EVONIK PRESENTATION (B) A Faster Launch of New Materials in Powder Bed Fusion Will Scharnberg Amanda Verissimo Evonik Ray Jones, Farsoon	GE ADDITIVE PRESENTATION (I) How GE Additive's M Line Solves Stitching Problems for Multi-Laser Production Nick Buhr GE Additive	ADDITEC PRESENTATION (I) Additive Manufacturing for Defense Brian Matthews ADDITEC  repeat session	STRATASYS PRESENTATION (A) HOW-TO: Increase Part Accuracy Via 3D Scanning In Print Prep Software James Page, Victor Gerdes Stratasys	EOS WORKSHOP (I) kNow Supports, Experience the Science Behind Support Free Metal LPBF Michael Wohlfart, Fabian Alefeld EOS North America  session to repeat on Thursday	DYNDRITE PRESENTATION (B) Part 1: Aconity, SLM, EOS, and Renishaw Materials and Process Development Steve Walton Dyndrite
2:30pm - 3:00pm	BREAK				Location: Continental Foyer (Lobby Level), International Foyer (2nd Floor), 3rd Floor Hallway			
3:00pm - 4:00pm	ARKEMA INC PRESENTATION (I) Improving Sustainability for Industrial Additive Manufacturing with More Sustainable Materials Steve Serpe, Jeffrey Klang Arkema Inc.	BOSTON MICRO FABRICATION PRESENTATION (B) Why 3D Printing Small, High-Value Parts Makes Sense for End-Use Production John Kawola Boston Micro Fabrication Troy Holland Samtec Inc	Closed Session	Closed Session	Closed Session	Closed Session	NEXA3D PRESENTATION (B) XiP Ease of Use Demonstration Michael Currie Nexa3D  session to repeat on Thursday	Closed Session
4:00pm - 5:00pm	ALL SESSIONS CLOSE AT 4:00PM							
	AMUG Program - Open to all AMUG Members (All Attendees with Full Conference Pass) and Guests with a Paid Off-Site Event Ticket							
5:00pm	Hilton Chicago			Palmer House		Important Information		
5:15pm - 5:30pm	Board Buses for Off-Site Dinner and Networking Event - see mobile app for details		Board Buses for Off-Site Dinner and Networking Event - see mobile app for details		• Badges are required to board the bus and attend the Off-site Dinner and Event. • All attendees must take the AMUG bus to attend the event. Due to safety and security, AMUG does not allow for 3rd party transportation. • Guest passes may be purchased at the AMUG Registration Desk prior to 4:00pm, Tuesday, March 21, 2023. • All guest must be accompanied by an AMUG Member (full conference attendee).			
	Buses Queue and Board at E. Balbo Drive (near hotel registration)		Buses Queue and Board at S. Wabash Ave					
6:00pm - 10:00pm	AMUG Off-Site Dinner and Networking Event				• Do not line up for the bus before 5:15pm. Buses will begin boarding at 5:15pm.			

BOOTH AREA	TIME	SESSIONS AND ACTIVITIES				LOCATION	
Diamond and Platinum Sponsors Booth Area CLOSED 7:00am - 1:30pm	7:00am - 8:00am	BREAKFAST Networking Breakfast - Conference Attendees and Badge Holding Diamond and Platinum Booth Staff				Location: Grand Ballroom, Normandie Lounge, Boulevard, 2nd Floor	
		AMUG Program - Open to all AMUG Members (All Attendees with Full Conference Pass)					
	8:00am - 9:00am	Innovators Showcase with Diana Kalisz, 3D Systems Todd Grimm sits down for a fireside chat with the recipient of the 2023 AMUG Innovators Showcase Award Diana Kalisz with 3D Systems				Location: International Ballroom, 2nd Floor	
	9:00am - 9:30am	2022 Advanced Concepts Winner Presentation Metal 3-D Printing Raises the Bar for the Army's Jointless Hull Program, Nanci Hardwick, MELD Manufacturing 2022 Advanced Finishing Winner Presentation Mars Attacks, Bill Braune, Dinsmore, Inc.					
	9:30am - 10:00am	International Report AMUG International Committee Chair, Stefan Ritt					
	10:00am - 10:30am	BREAK				Location: International Ballroom (back of room), 2nd Floor	
	10:30am - 11:00am	2023 Technical Competition Winners Announced Advanced Concepts and Advanced Finishing - AMUG Technical Competition Committee Chair, Bonnie Meyer				Location: International Ballroom, 2nd Floor	
	11:00am - 12:00pm	AMUG Annual Business Meeting for all AMUG Members AMUG Organization Update - AMUG President, Mark Abshire Review 2022 Business Meeting Minutes - AMUG Secretary, Leslie Frost Treasurers Report - AMUG Treasurer, Vince Anewenter Board of Director Election Results - AMUG Past President and Nominating Committee Chair, Carl Dekker					
	12:00pm - 1:15pm	NETWORKING LUNCH Networking Lunch - Conference Attendees and Badge Holding Diamond and Platinum Booth Staff				Location: Grand Ballroom, Normandie Lounge, Boulevard, 2nd Floor	
		BREAKOUT SESSIONS BEGIN					
	AMUG Program - Open to all AMUG Members (All Attendees with Full Conference Pass)						
	Track	AM Metal Technologies	Education and Training	Healthcare (Medical and Dental)	Scanning and Metrology	Metal Casting	
	Room Floor	International Ballroom NORTH 2nd Floor	International Ballroom SOUTH 2nd Floor	Continental A Lobby Level	Continental B Lobby Level	Continental C Lobby Level	
Diamond and Platinum Sponsors BOOTH AREA OPEN 1:30pm - 5:30pm	1:30pm - 2:30pm	PRESENTATION (I) De-Mystifying LPBF Throughput Ajay Krishnan EWI	WORKSHOP (B) PART II Silicone Molding & Polyurethane Casting Bill Molitor Rampf Group, Inc  Continuation of Part I of Workshop held Tuesday March 21 at 3:00pm Requires attendance at Part I	PRESENTATION (B) Why Dental is a Leader in Additive Manufacturing and a Look Forward Stuart Steinbock ODL Dental Lab	PRESENTATION (B) X-ray Computed Tomography Andrew Ramsey Nikon Metrology Inc.	PRESENTATION (B) HPDC Casting Process Overview and the Role of 3D Printed Inserts Kirk Mrozek MAGMA Foundry Technologies  PRESENTATION (I) Investment Castings: Process Fundamentals, Tooling Methods and Overview of Common Casting Defects Victor Villarini TriTech Titanium Parts LLC	
	2:30pm - 3:00pm	BREAK				Location: Continental Foyer (Lobby Level), International Foyer (2nd Floor), 3rd Floor Hallway	
	3:00pm - 4:00pm	PANEL (I) A Review of Current Thermal Process Technologies and Their Applications MODERATOR: Shane Collins, ASTM PANELISTS: Chad Beamer, Quintus Technologies LLC Steve Feldbauer, Abbott Furnace Noel Brady, Paulo Michael Nappi, Bodycote	PRESENTATION (B) Hybrid Manufacturing: How Fundamental Scientific Research Translates to Industrial Impact Thomas Feldhausen Oak Ridge National Laboratory	PRESENTATION (A) Additive Manufacturing for the Regulated Environment - Validating Workflows Steven Pollack SPMT Consulting, LLC	PRESENTATION (B) Aerospace and Space Computed Tomography Case Studies for AM Parts Jacob Rickter Pinnacle Industrial X-Ray Laboratory (PiXL)	PRESENTATION (I) Additive Manufacturing is Changing Investment Casting Thomas Mueller Mueller AMS	
	4:00pm - 4:30pm	TRANSITION - NO BREAK					
		AM Metal Technologies	Education and Training	Healthcare (Medical and Dental)	Scanning and Metrology	AM Non-Metals Technology	
	4:30pm - 5:30pm	PRESENTATION (I) Laser Wire DED of Ti6-4 - From Initial R&D to Finalizing MRL Chad Henry GKN Aerospace	PRESENTATION (B) Heat Treatment 101 Sarah Jordan Mark DeBruin Skuld LLC	PRESENTATION (I) Using 3D Printing to Enable Medical Device Manufacturing at Point of Care Brian Strzelecki, Dmitry Levin, Arri Willis Veterans Health Administration	PANEL (A) CT Scanning and Digital Radiography for Additive Manufacturing MODERATOR: Giles Gaskell, Hexagon PANELISTS: Andrew Ramsey, Nikon Metrology Inc. Jacob Rickter, Pinnacle Industrial X-Ray Laboratory (PiXL) Roger Wende, Volume Graphics	PANEL (B) So You Want To Start an Additive Manufacturing Business: A Panel Discussion MODERATOR: Paul DeWys, Forerunner 3D Printing PANELISTS: Chris Beck, Innovative 3D Manufacturing Kason Knight, i-SOLIDS Mike Littrell, CIDEAS Inc.	
Diamond and Platinum Sponsors Booth Area CLOSED 5:30pm - 10:00pm	5:30pm - 6:00pm	ALL SESSIONS CLOSE AT 5:30PM					
		AMUG Program (Conference Attendees and Badge Holding Diamond and Platinum Booth Staff)					
	6:00pm - 10:00pm	AMUG Celebrates the 1893 Chicago World's Fair - Steampunk Style Dinner and Evening Activites				Location: Grand Ballroom, Normandie Lounge, Boulevard, 2nd Floor	



# WEDNESDAY, MARCH 22, 2023

TIME	SESSIONS AND ACTIVITIES					LOCATION			
7:00am - 8:00am	BREAKFAST Networking Breakfast - Conference Attendees and Badge Holding Diamond and Platinum Booth Staff					Location: Grand Ballroom, Normandie Lounge, Boulevard, 2nd Floor			
	AMUG Program - Open to all AMUG Members (All Attendees with Full Conference Pass)								
8:00am - 9:00am	Innovators Showcase with Diana Kalisz, 3D Systems Todd Grimm sits down for a fireside chat with the recipient of the 2023 AMUG Innovators Showcase Award Diana Kalisz with 3D Systems					Location: International Ballroom, 2nd Floor			
9:00am - 9:30am	2022 Advanced Concepts Winner Presentation Metal 3-D Printing Raises the Bar for the Army's Jointless Hull Program, Nanci Hardwick, MELD Manufacturing 2022 Advanced Finishing Winner Presentation Mars Attacks, Bill Braune, Dinsmore, Inc.								
9:30am - 10:00am	International Report AMUG International Committee Chair, Stefan Ritt								
10:00am - 10:30am	BREAK					Location: International Ballroom (back of room), 2nd Floor			
10:30am - 11:00am	2023 Technical Competition Winners Announced Advanced Concepts and Advanced Finishing - AMUG Technical Competition Committee Chair, Bonnie Meyer					Location: International Ballroom, 2nd Floor			
11:00am - 12:00pm	AMUG Annual Business Meeting for all AMUG Members AMUG Organization Update - AMUG President, Mark Abshire Review 2022 Business Meeting Minutes - AMUG Secretary, Leslie Frost Treasurers Report - AMUG Treasurer, Vince Anewenter Board of Director Election Results - AMUG Past President and Nominating Committee Chair, Carl Dekker								
12:00pm - 1:15pm	NETWORKING LUNCH Networking Lunch - Conference Attendees and Badge Holding Diamond and Platinum Booth Staff					Location: Grand Ballroom, Normandie Lounge, Boulevard, 2nd Floor			
	BREAKOUT SESSIONS BEGIN								
	SPONSOR PROGRAM - Open to all AMUG Members (All Attendees with Full Conference Pass)								
Track	Platinum Speaking Session	Platinum Speaking Session	Diamond Speaking Session	Diamond Speaking Session	Diamond Speaking Session	Diamond Training Session	Diamond Training Session	Diamond Training Session	
Room Floor	Marquette Room 3rd Floor	Joliet Room 3rd Floor	Waldorf 3rd Floor	Astoria 3rd Floor	Williford A 3rd Floor	Williford B 3rd Floor	Williford C 3rd Floor	PDR2 3rd Floor	
1:30pm - 2:30pm	SANDVIK ADDITIVE MANUFACTURING PRESENTATION (I) 30 MIN Sustainable Production of Inert Gas Atomised Metal Powders for Additive Manufacturing Paul Davies, Eleonora Bettini Sandvik Additive Manufacturing  PRESENTATION (I) 30 MIN New Metal Powder Developments for Additive Manufacturing Paul Davies, Eleonora Bettini Sandvik Additive Manufacturing	RAPIDIA TECH INC PRESENTATION (I) Benefits of A Metal Paste Feedstock Tom Curran Rapidia Tech Inc	EOS PRESENTATION (A) Scaling and Maturing Additive Manufacturing Supply Chains Fabian Alefeld, Ankit Saharan EOS North America	DMG MORI PRESENTATION (B) Innovations in Hybrid DED Enabling More Advanced Applications Scott Hill DMG MORI	NEXA3D PRESENTATION (I) Pushing the Limits of Powder Bed Fusion Kevin McAlea Nexa3D	FORMLABS WORKSHOP (I) Manufacture Silicone Parts with SLA Printed Molds Evan Fisher Formlabs	ADDITEC PRESENTATION (I) Multi-Material Additive Manufacturing Sriram Manoharan Brian Matthews ADDITEC  session to repeat on Thursday	GE ADDITIVE WORKSHOP (B) GE Additive's Amp™: Single-Source Build-Preparation Software Nic Sabo GE Additive	
2:30pm - 3:00pm	BREAK					Location: Continental Foyer (Lobby Level), International Foyer (2nd Floor), 3rd Floor Hallway			
3:00pm - 4:00pm	FARSOON TECHNOLOGIES PRESENTATION (I) FLIGHT TECHNOLOGY - Scaling up Powderbed Fusion with Fiber Lasers Johnny Zhu, Farsoon Technologies Steve Kubiak, JABIL	ARBURG, INC. PRESENTATION (I) Building Multi-Material Parts with Thermoplastics for Medical/ Aerospace/Industrial Applications with ARBURG's Freeformer Printer Martin Neff ARBURGadditive	TEKNA PRESENTATION (I) Ultra-dense Powder Made with RF Plasma Atomized Particles Deliver Speed and Sustainability Jerome Pollak Tekna Adam Hopkins Uniformity Labs	GOENGINEER PRESENTATION (B) The Journey to Scalable Metal AM Brent Hansen, Velo3D Tyler Reid, GoEngineer	STRATASYS PANEL (I) How OpenAM Ecosystems are Driving the Development of High-Performance Photopolymers MODERATOR: Eric Yeung, Stratasys PANELISTS: Rebecca Fecteau, BASF Andrew Graves, Covestro Daniel Rothfuss, Loctite Mike Scianna, Evonik	EVONIK  Closed Session	MELTIO PRESENTATION (I) DED Parameters Development: Combining Mechanical Properties with Surface Finish Lukas Hoppe Meltio	Closed Session	
4:00pm - 4:30pm	TRANSITION - NO BREAK								
4:30pm - 5:30pm	AXTRA 3D, INC. PRESENTATION (I) Axtra3D Hybrid PhotoSynthesis (HPS) Deep Dive Paul Spoliarsky Gianni Zitelli Axtra3D, Inc.	ADDITIVE INDUSTRIES NORTH AMERICA INC PRESENTATION (I) The Advantages of a Highly Automated LPBF System on the Process and Product Quality Assurance Martina Riccio Additive Industries North America	Closed Session	DYNDRITE PRESENTATION (I) Aconity, SLM, EOS, and Renishaw Users, Accelerating Materials and Process Development Harshil Goel Dyndrite	Closed Session	WÜRTH ADDITIVE GROUP PANEL (A) Best Safety Practices of Industrial Additive: Bringing Maturity to Employee Safety MODERATOR: AJ Strandquist, Würth Additive Group PANELIST: Würth Additive Group Team Jacob Ayers Anthony Sparks Ed Tackett	Closed Session	Closed Session	
5:30pm - 6:00pm	ALL SESSIONS CLOSE AT 5:30PM								
	AMUG Program (Conference Attendees and Badge Holding Diamond and Platinum Booth Staff)								
6:00pm - 10:00pm	AMUG Celebrates the 1893 Chicago World's Fair - Steampunk Style Dinner and Evening Activities					Location: Grand Ballroom, Normandie Lounge, Boulevard, 2nd Floor			

BOOTH AREA	TIME	SESSIONS AND ACTIVITIES				LOCATION			
Diamond and Platinum Sponsors Booth Area CLOSED  7:00am - 10:30am	7:00am - 8:00am	BREAKFAST Networking Breakfast - Conference Attendees and Badge Holding Diamond and Platinum Booth Staff				Location: Grand Ballroom, Normandie Lounge, Boulevard, 2nd Floor			
		AMUG Program - Open to all AMUG Members (All Attendees with Full Conference Pass)							
	8:00am - 9:00am	KEYNOTE: High-Performance, Low-Cost Liquid Propulsion Enabled by AM Max Haot, Launcher				Location: International Ballroom, 2nd Floor			
	9:00am-9:30am	2022 AMUG Members Choice Winner Presentation Metal 3D Printed Bathroom Faucet, Jung Kyu Im and Daniel Goncalves, Custom Prototypes 2023 AMUG Members Choice Winner Announced - AMUG Technical Competition Committee Chair, Bonnie Meyer							
	9:30am-10:00am	AMUG Preparation for AMUG 2024 and Member Feedback Introduction of new AMUG Board of Directors and member feedback - AMUG Director, Education & Conference, Jordan Weston							
	10:00am-10:30am	BREAK				Location: Continental Foyer (Lobby Level), 3rd Floor Hallway			
Diamond and Platinum Sponsors Booth Area Open  10:30am - 1:30pm		BREAKOUT SESSIONS BEGIN							
		AMUG Program - Open to all AMUG Members (All Attendees with Full Conference Pass)							
	Track	AM Metal Technologies		Education and Training		AM Materials	Software	Metal Casting	
	Room Floor	International Ballroom NORTH 2nd Floor		International Ballroom SOUTH 2nd Floor		Continental A Lobby Level	Continental B Lobby Level	Continental C Lobby Level	
	10:30am-12:00pm	PANEL (I) Importance of Data, Qualification, and Certification for Industrialization of Metal Additive Manufacturing  MODERATOR: Scott Volk, <i>Advanced Additive Innovations</i> PANELISTS: Yash Bandari, <i>Fastech Engineering</i> Will Tilson, <i>NASA MSFC</i> Jeff Riemann, <i>FormAlloy</i>	PRESENTATION (I) 45 MIN Negotiating Your Purchasing Power Mark Abshire  PRESENTATION (I) 45 MIN Using Metal AM to Drive Emissions Reduction and Educate Future Engineers Tad Steinberg <i>Siemens Energy Additive Mfg.</i> Edward Herderick <i>NSL Analytical Services</i>	PRESENTATION (A) 45 MIN Material Property Impacts of Extended Thermal Aging on Performance of LPBF F357 Stephen Pfau <i>University of Dayton Research Institute</i>  PRESENTATION (A) 45 MIN Influence of Powder Particles on the Flow in Metal Extrusion Additive Manufacturing Marcin Piotr Serdeczny <i>Flow Science Inc.</i>	PRESENTATION (B) 45 MIN MES vs Excel or Whiteboard: A Comparison Patrick Gannon, <i>Ricoh USA, Inc.</i> Celina Gratton, <i>Authentise</i>  PRESENTATION (I) 45 MIN Panel Discussion with MES Software Providers MODERATOR: Kevin Ayers, <i>3D Metal Consulting</i> PANELISTS: Aleksander Ciszek, <i>3YOURMIND</i> Mark McGarry, <i>Oqton</i> Vishal Singh, <i>Materialise</i> Andre Wegner, <i>Authentise</i>	PRESENTATION (I) Revolutionary Transformation: How 3D Printed Sand Molds and Cores are Changing the Metalcasting Industry Brandon Lamoncha <i>Humtown</i>			
	12:00pm - 1:15pm	NETWORKING LUNCH IN DIAMOND AND PLATINUM BOOTH AREA WITH STUDENT POSTER SESSION Networking Lunch - Conference Attendees and Badge Holding Diamond and Platinum Booth Staff				Location: Salon A, B, C, D, Lower Level			
Diamond and Platinum Sponsors Booth Area CLOSSES at 1:30pm  Booth Area Closed for remainder of AMUG Conference	Track	AM Metal Technologies		Education and Training		AM Materials		Scanning & Metrology	Aerospace, Transportation, Defense
	Room Floor	International Ballroom NORTH 2nd Floor		International Ballroom SOUTH 2nd Floor		Continental A Lobby Level		Continental B Lobby Level	Continental C Lobby Level
	1:30pm - 2:30pm	PRESENTATION (I) Optimization of the De-Bind and Sintering Cycles of Binder Jetted 17-4 Components Stephen Feldbauer, <i>Abbott Furnace Company</i> Dustin Gilmer, <i>University of Tennessee</i> Jeremiah Kahle, <i>Pennsylvania State University</i> Peeyush Nandwana, <i>Oak Ridge National Laboratory</i> Brian Smith, <i>Abbott Furnace Company</i>	PRESENTATION (I) Understanding the Fire and Explosion Hazards Associated with AM Equipment and Processes Jason Reason <i>Airbus EDS</i>	PANEL (I) Does Domestically Sourced, Sustainable Metal AM Powder Meet Industry Requirements MODERATOR: Bonnie Meyer, <i>ASTM</i> PANELISTS: Edward DiLoreto, <i>Keselowski Advanced Manufacturing</i> Kevin Engel, <i>Incodema 3D</i> Adam Hopkins, <i>Uniformity Labs</i> Jacob Nuechterlein, <i>Elementum3D</i> Frank Roberts, <i>6K Additive</i>	WORKSHOP (B) Geometric Dimensioning & Tolerance (GD&T) WORKSHOP LEAD: Bob Diaz, <i>College of Southern Nevada</i> WORKSHOP FACILITATORS: Mark Abshire Giles Gaskell, <i>Hexagon</i> Tom Sorovetz, <i>T.A. Sorovetz LLC</i>	PRESENTATION (A) FERA: International Collaboration as a Path to Industry 4.0 Guilherme Guimaraes <i>Technological Institute of Aeronautics</i>			
	2:30pm - 3:00pm	BREAK				Location: Salon C (Lower Level), Continental Foyer (Lobby Level), 3rd Floor Hallway			
	Track	AMUG DROP-IN WORKSHOPS				Healthcare (Medical & Dental)		Software	Aerospace, Transportation, Defense
	Room Floor	SALON C LOWER LEVEL				Continental A Lobby Level		Continental B Lobby Level	Continental C Lobby Level
	3:00pm - 4:00pm	AMUG Drop-in Workshops are designed to allow you to come and go as you need. With 5 workshop centers conveniently located in Salon C, you can start at one workshop and work your way through all 5 at your pace. All workshops in Salon C will be open 3:00pm - 5:30pm.				PRESENTATION (I) Metal 3D Printed Startup Austin Peterson <i>D3D - Dean 3Digital</i>	PANEL (I) Computational Design for Additive Manufacturing MODERATOR: Duann Scott, <i>Bits to Atoms</i> PANELISTS: Nate Shirley, <i>HP</i> Matt Shomper, <i>Tangible Solutions</i> Steve Szymczek, <i>3D Printing Metality</i>	PRESENTATION (B) Application of Additive Manufacturing to Armament Systems Andrew Littlefield <i>US Army DEVCOM AC</i>	
		METAL CASTING WORKSHOP Foundry In A Box	NON- METALS WORKSHOP Beyond Adhesives, Hands on Workshop for Assembling 3D Printed Plastics	EDUCATION & TRAINING WORKSHOP Advanced Casting with Additive Manufactured Molds	AM MATERIALS WORKSHOP Tools to Understand Your Materials: A Hands-on Measurement Workshop	METALS WORKSHOP Design With the End In Mind - Metal AM Support Removal Workshop			
	4:00pm - 4:30pm	WORKSHOP LEAD: Dave Rittmeyer, <i>Matthews International</i> WORKSHOP FACILITATORS: Marcus Knoespel, <i>Artcast Inc.</i> Erich Knoespel, <i>Artcast Inc.</i>	WORKSHOP LEAD: Kyle Harvey, <i>Extol, Inc.</i> WORKSHOP FACILITATORS: Jeremy Vos, <i>BASF</i> Josiah Klaus, <i>Novastar Solutions</i> Extol, Inc. Team Andrew Roderick Dan Klompaker Alex Goldsberry	WORKSHOP LEAD: Siyani McFall, <i>Boeing</i> WORKSHOP FACILITATORS: Bethany Charboneau, <i>Thermoset Solutions</i> Joshua Dunn, <i>Boeing</i>	WORKSHOP LEAD: Megan Contreras, <i>Midwest Prototyping, A Prototek Company</i> Filip Francqui, <i>GRANUTOOLS</i> Jim Wise, <i>Midwest Prototyping, A Prototek Company</i>	WORKSHOP LEAD: Bob Markley, <i>ADDMAN</i>	TRANSITION - NO BREAK		
	4:30pm - 5:30pm				WORKSHOP (I) Medical & Dental  Open Roundtable	WORKSHOP (I) Design Tools Workshop WORKSHOP LEAD: Evan Pilz, <i>Ntopology</i> WORKSHOP FACILITATORS: George Gregory, <i>Oqton</i> Julian Cecil, <i>3D Chimera</i> Giles Gaskell, <i>Hexagon</i>	PRESENTATION (I) Integrated Digital Workflow for Multi-Objective Optimization of AM Parts for Production Sushmit Chowdhury, Ellen Lee <i>Ford Motor Company</i>		
	5:30pm - 6:00pm	ALL SESSIONS CLOSE AT 5:30PM							
		AMUG Program (Conference Attendees and Badge Holding Diamond and Platinum Sponsor Booth Staff							
	6:00pm - 10:00pm	AMUG Family and Closing Dinner Networking Dinner - Conference Attendees and Badge Holding Diamond and Platinum Booth Staff					Location: Grand Ballroom, Normandie Lounge, Boulevard, 2nd Floor		
		10:00pm	2023 AMUG Conference Officially Closes						

# THURSDAY, MARCH 23, 2023

TIME	SESSIONS AND ACTIVITIES					LOCATION			
7:00am	BREAKFAST Networking Breakfast - Conference Attendees and Badge Holding Diamond and Platinum Booth Staff					Location: Grand Ballroom, Normandie Lounge, Boulevard, 2nd Floor			
	AMUG Program - Open to all AMUG Members (All Attendees with Full Conference Pass)								
8:00am - 9:00am	KEYNOTE: High-Performance, Low-Cost Liquid Propulsion Enabled by AM Max Haot, Launcher					Location: International Ballroom, 2nd Floor			
9:00am - 9:30am	2022 AMUG Members Choice Winner Presentation Metal 3D Printed Bathroom Faucet, Jung Kyu Im and Daniel Goncalves, Custom Prototypes 2023 AMUG Members Choice Winner Announced - AMUG Technical Competition Committee Chair, Bonnie Meyer								
9:30am - 10:00am	AMUG Preparation for AMUG 2024 and Member Feedback Introduction of new AMUG Board of Directors and member feedback - AMUG Director, Education & Conference, Jordan Weston								
10:00am - 10:30am	BREAK					Location: Continental Foyer (Lobby Level), 3rd Floor Hallway			
	BREAKOUT SESSIONS BEGIN								
	SPONSOR PROGRAM - Open to all AMUG Members (All Attendees with Full Conference Pass)								
Track	Platinum Speaking Session	Platinum Speaking Session	Diamond Speaking Session	Diamond Speaking Session	Diamond Speaking Session	Diamond Training Session	Diamond Training Session	Diamond Training Session	
Room Floor	Marquette Room 3rd Floor	Joliet Room 3rd Floor	Waldorf 3rd Floor	Astoria 3rd Floor	Williford A 3rd Floor	Williford B 3rd Floor	Williford C 3rd Floor	PDR2 3rd Floor	
10:30am - 11:30am	JABIL PRESENTATION (I) Serial Production for Additive - Lessons from a Jabil Perspective Luke Rodgers JABIL	HEXAGON PRESENTATION (I) Streamlining Polymer Material Development Using Porosity Information in Process Simulation Roger Wende Hexagon	WÜRTH ADDITIVE GROUP PANEL (A) 360 Degrees of Additive Edu - How to Launch and Nurture at a University Ed Tackett, Würth Additive Group Justin Gillham, University of Louisville, AMIST	EVONIK PRESENTATION (I) How Tough is Too Tough? The Right Balance of Properties in Materials Mike Scianna Evonik	MELTIO PRESENTATION (I) Wire-Laser Metal 3D Printing for the Machine Shop Giorgio Olivieri, Gerard Garcia Meltio	EOS WORKSHOP (I) kNOW Supports, Experience the Science Behind Support Free Metal LPBF Michael Wohlfart, Fabian Alefeld EOS North America  repeat session	GOENGINEER WORKSHOP (I) Printer Hacks You Wish You Knew Tim Crennen, Bob Renella GoEngineer	STRATASYS PRESENTATION (I) How to be Successful with Volume Production Alec Logeman Shuvom Ghose Stratasys  PRESENTATION (I) How to: Tune non-Stratasys Materials on a Stratasys FDM 3D Printer Thomas Whiting Stratasys	
11:30am - 12:00pm	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	
12:00pm - 1:15pm	NETWORKING LUNCH IN DIAMOND AND PLATINUM BOOTH AREA WITH STUDENT POSTER SESSION Networking Lunch - Conference Attendees and Badge Holding Diamond and Platinum Booth Staff					Location: Salon A, B, C, D, Lower Level			
Track	Platinum Speaking Session	Platinum Speaking Session	Diamond Speaking Session	Diamond Speaking Session	Diamond Speaking Session	Diamond Training Session	Diamond Training Session	Diamond Training Session	
Room Floor	Marquette Room 3rd Floor	Joliet Room 3rd Floor	Waldorf 3rd Floor	Astoria 3rd Floor	Williford A 3rd Floor	Williford B 3rd Floor	Williford C 3rd Floor	PDR2 3rd Floor	
1:30pm - 2:30pm	CARBON PRESENTATION (B) Realizing Mass Customization with Software and Automation Vincent Rerolle Andrew Sink Carbon	DESKTOP METAL PRESENTATION (A) Binder Jet 3D Printing of Copper Alloy C18150 Kyle Myers Desktop Metal Eleonora Bettini Sandvik Additive Manufacturing	GE ADDITIVE PRESENTATION (B) GE Additive's Binder Jet Line: Accelerating Metal AM Production Sammie Rowe GE Additive	FORMLABS PRESENTATION (B) Unlock Low Volume Production With Accessible SLA and SLS 3D Printing Eliza Margolin Formlabs	ADDITEC PRESENTATION (I) Multi-Material Additive Manufacturing Sriram Manoharan ADDITEC  repeat session	TEKNA PRESENTATION (I) Metal Powders for Additive Manufacturing – Making an Educated Selection Yevgeni Brif Tekna	DYNDRITE PRESENTATION (A) Part 2 Aconity and SLM Material Process Development Down to Hatch Vectors Steve Walton Dyndrite	NEXA3D PRESENTATION (B) XiP Ease of Use Demonstration Michael Currie Nexa3D  repeat session	
2:30pm - 3:00pm	BREAK					Location: Salon C (Lower Level), Continental Foyer (Lobby Level), 3rd Floor Hallway			
Track	Platinum Speaking Session	Platinum Speaking Session	Diamond Speaking Session	Diamond Speaking Session	Diamond Speaking Session	Diamond Training Session	Diamond Training Session	Diamond Training Session	
Room Floor	Marquette Room 3rd Floor	Joliet Room 3rd Floor	Waldorf 3rd Floor	Astoria 3rd Floor	Williford A 3rd Floor	Williford B 3rd Floor	Williford C 3rd Floor	PDR2 3rd Floor	
3:00pm - 4:00pm	DSI - AUTODESK DIGITAL MANUFACTURING PRESENTATION (B) Automating the Part Setup Process for CNC Machining Additive Manufactured Parts Jon Caliguri Luke Davidson DSI - Autodesk Digital Manufacturing	MASSIVIT 3D PRESENTATION (B) Where Engineering and Scenic Fabrication Meet Kevin Sykes Jason Lopes Massivit 3D	Closed Session	Closed Session	Closed Session	DMG MORI PRESENTATION (I) DED Process and Quality Controls for Production-Ready Consistency Kevin Stenberg DMG MORI	Closed Session	Closed Session	
4:00pm	TRANSITION - NO BREAK								
4:30pm - 5:30pm	ANSYS PRESENTATION (B) Thermal and Structural Optimizations for Increased Efficiency of Metal AM Build Processes Christopher Robinson ANSYS	PROFITKEY PRESENTATION (B) How a Medical Device Supplier Solved their Nested Scheduling Problem David Bennett Profitkey	Closed Session	Closed Session	Closed Session	Closed Session	Closed Session	Closed Session	
5:30pm - 6:00pm	ALL SESSIONS CLOSE AT 5:30PM								
	AMUG Program (Conference Attendees and Badge Holding Diamond and Platinum Sponsor Booth Staff)								
6:00pm - 10:00pm	AMUG Family and Closing Dinner Networking Dinner - Conference Attendees and Badge Holding Diamond and Platinum Booth Staff					Location: Grand Ballroom, Normandie Lounge, Boulevard, 2nd Floor			
10:00pm	2023 AMUG Conference Officially Closes								





**AMUGEXPO HOURS**

SUNDAY - MONDAY

Diamond, Platinum, Gold Sponsors and Exhibitors

**Sunday, March 19, 2023**

4:00pm - 10:00pm

Networking Buffet Dinner in AMUGexpo area

**Monday, March 20, 2023**

10:00am - 2:30pm

From 12:00pm - 1:15pm Networking Buffet Lunch will be held in the booth area.

**Monday, March 20, 2023**

6:00pm - 10:00pm

Networking Buffet Dinner in AMUGexpo area

Exhibitors and Gold sponsors move out on Monday night.

Make sure to plan your time at the conference to see them all!

**DIAMOND AND PLATINUM SPONSORS ONLY**

TUESDAY - THURSDAY

Diamond and Platinum booths area open throughout the conference week.

**Tuesday, March 21**

10:00am - 12:00pm

1:30pm - 4:00pm

**Wednesday, March 22**

1:30pm - 5:30pm

**Thursday, March 23**

10:30am - 1:30pm

From 12:00pm - 1:15pm Networking Buffet Lunch will be held in the Diamond and Platinum booth area.

Company	Participation Level	Booth #
1000 Kelvin GmbH	Gold Sponsor	17
3D Control Systems	Exhibitor	94
3D Systems	Platinum Sponsor	P17
3DChimera	Exhibitor	35
3Degrees	Exhibitor	58
3DGence America Inc	Gold Sponsor	24
3YOURMIND	Gold Sponsor	89
6K Additive	Gold Sponsor	43
AddiMap - The AM Platform	Exhibitor	70
ADDITEC	Diamond Sponsor	D8
Additive Assurance	Gold Sponsor	32
Additive Industries North America Inc.	Platinum Sponsor	P13
AddUp	Platinum Sponsor	P22
AlphaSTAR	Exhibitor	61
AMPOWER	Exhibitor	112
ANSYS	Platinum Sponsor	P2
ARBURG Inc.	Platinum Sponsor	P19
Arkema Inc.	Platinum Sponsor	P3
ASM International	Exhibitor	96
ASTM Additive Manufacturing Center of Excellence	Gold Sponsor	106
Authentise	Exhibitor	46
Axtra3D, Inc.	Platinum Sponsor	P26
Bel Air Finishing Supply Corporation	Exhibitor	3
BigRep America	Exhibitor	55
b-jetting llc	Exhibitor	75
Bodycote	Gold Sponsor	102
BOFA Americas, Inc.	Exhibitor	77
Boston Micro Fabrication	Platinum Sponsor	P23
BuildParts by CIDEAS, Inc	Gold Sponsor	103
CAPTURE 3D	Exhibitor	87
Carbon	Platinum Sponsor	P8
CoreTechnologie	Gold Sponsor	105
Creative 3D Technologies	Exhibitor	19
Cubicure GmbH	Exhibitor	2
Desktop Metal	Platinum Sponsor	P7
Dinsmore, an ADDMAN GROUP COMPANY	Platinum Sponsor	P16
DMG MORI USA	Diamond Sponsor	D2
DSI - Autodesk Digital Manufacturing	Platinum Sponsor	P6
DyeMansion North America Inc	Gold Sponsor	54
Dyndrite	Diamond Sponsor	D3
Dyze Design	Gold Sponsor	115
EDM Network, inc	Exhibitor	4
Element Materials Technology	Gold Sponsor	71
Elementum 3D	Exhibitor	56
Empirical Technologies	Exhibitor	38
EMPOWR3D, powered by Interfacial a Nagase Company	Exhibitor	99
EOS	Diamond Sponsor	D11
EPLUS3D TECH CO., LTD.	Exhibitor	8
Equispheres Inc.	Gold Sponsor	40
Essentium, Inc.	Platinum Sponsor	P11
eSUN	Exhibitor	25
Evolve Additive Solutions	Gold Sponsor	92

Company	Participation Level	Booth #
Evonik Corp	Diamond Sponsor	D7
EWI	Gold Sponsor	41
Exum Instruments	Exhibitor	84
Fabrisonic	Exhibitor	104
Farsoon Technologies	Platinum Sponsor	P18
FLOW-3D AM	Exhibitor	97
Formlabs Inc	Diamond Sponsor	D14
Fortis3D Corp.	Exhibitor	28
Fortius Metals, Inc.	Exhibitor	18
Gasbarre Thermal Processing Systems	Exhibitor	44
GE Additive	Diamond Sponsor	D15
Global Advanced Metals	Gold Sponsor	88
GoEngineer	Diamond Sponsor	D13
GoProto LLC	Gold Sponsor	52
GSC	Exhibitor	69
H.C. Starck Solutions	Exhibitor	78
Höganäs AB	Exhibitor	47
Herding Filtration LLC	Exhibitor	7
Hexagon	Platinum Sponsor	P5
HK Technologies	Exhibitor	68
HP 3D Printing	Gold Sponsor	53
Impossible Objects, Inc.	Exhibitor	80
Indo-MIM Inc	Exhibitor	83
Ingersoll Machine Tools, Inc.	Gold Sponsor	74
Inkbit Corporation	Gold Sponsor	51
INTAMSYS Technology, Inc	Exhibitor	26
Intellegens	Exhibitor	79
Jabil	Platinum Sponsor	P9
JEOL USA, Inc	Gold Sponsor	60
Jesse Garant Metrology Center	Exhibitor	76
Kymera International	Gold Sponsor	90
Laboratory Testing Inc.	Exhibitor	67
Lithoz America, LLC	Exhibitor	57
M. Holland Company	Exhibitor	29
Massivit 3D	Platinum Sponsor	P14
Materialise	Platinum Sponsor	P21
MELD Manufacturing	Exhibitor	33
Meltio	Diamond Sponsor	D1
Metal Powder Industries Federation	Exhibitor	91
MET-L-FLO, Inc.	Exhibitor	107
Midwest Prototyping A Prototek Company	Platinum Sponsor	P10
Mitsubishi Chemical Group	Exhibitor	30
MITSUBI MINING & SMELTING CO., LTD.	Gold Sponsor	15
Nabertherm Inc.	Exhibitor	93
Nexa3D	Diamond Sponsor	D6
Nikon Metrology	Exhibitor	85
North Star Imaging	Gold Sponsor	110
nScript	Exhibitor	109
NSL Analytical Services, Inc.	Exhibitor	81
Oerlikon	Exhibitor	14
One Click Metal GmbH	Exhibitor	66

Company	Participation Level	Booth #
Ophir/ An MKS Brand	Exhibitor	95
Optomec	Exhibitor	50
Optris IR Sensing, LLC	Exhibitor	31
Oqton	Exhibitor	64
Phase3D	Exhibitor	82
Praxair Surface Technologies	Gold Sponsor	59
Process Sensing Technologies   Ntron	Exhibitor	5
ProFitKey	Platinum Sponsor	P1
Quickparts	Gold Sponsor	11
Quintus Technologies	Exhibitor	1
RAMCO Equipment	Exhibitor	45
RAMPF	Exhibitor	98
Rapid Prototyping Services, LLC	Gold Sponsor	49
Rapidia Tech Inc	Platinum Sponsor	P25
Renishaw, Inc.	Platinum Sponsor	P4
RePIIForm	Gold Sponsor	42
RP America	Platinum Sponsor	P15
Ruwac USA	Exhibitor	36
Sandvik Additive Manufacturing	Platinum Sponsor	P24
Sciaky, Inc.	Gold Sponsor	20
Senvol	Exhibitor	62
Siemens	Platinum Sponsor	P12
Skuld LLC	Exhibitor	113
SLM Solutions	Gold Sponsor	39
SME	Gold Sponsor	34
Solar Atmospheres	Exhibitor	101
Solukon Maschinenbau GmbH	Exhibitor	22
STEREO LITHOGRAPHY ASSO-CIATES SALES CO. AKA SLA SALES CO.	Exhibitor	48
Stratasys	Diamond Sponsor	D12
Tech Met, Inc	Exhibitor	21
Tekna	Diamond Sponsor	D10
TESCAN	Exhibitor	86
Tethon 3D	Exhibitor	63
TIGER Drylac U.S.A., Inc.	Exhibitor	114
TIGER-VAC INC.	Exhibitor	100
TPM 3D Printing Technology Co.,Ltd	Exhibitor	73
Tritone Technologies	Gold Sponsor	72
TRUMPF Inc.	Gold Sponsor	12
Ulando Technologies, Inc.	Gold Sponsor	27
Uniformity Labs, Inc	Exhibitor	10
VALIMET, Inc.	Exhibitor	23
Visitech Americas	Gold Sponsor	111
Visser Precision	Exhibitor	65
VJ Technologies, Inc.	Exhibitor	16
voxeljet America Inc.	Exhibitor	6
VulcanForms	Exhibitor	37
Würth Additive Group	Diamond Sponsor	D4
Wintech Digital Systems	Exhibitor	13
Xact Metal	Platinum Sponsor	P20
XJet	Exhibitor	9
ZEISS Industrial Quality Solutions	Gold Sponsor	108

# AMUGEXPO - LOWER LEVEL

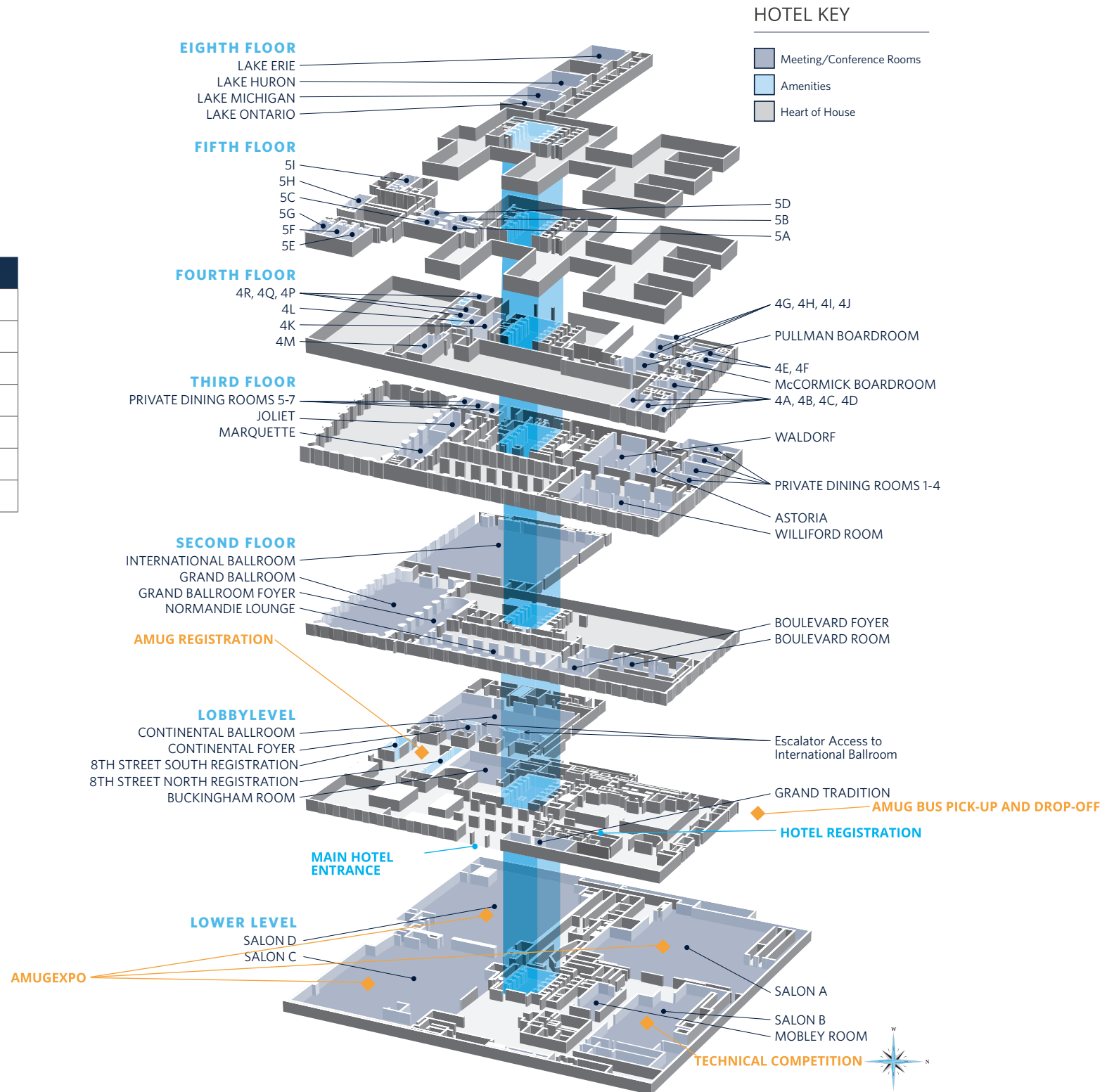




## HILTON CHICAGO

720 S. Michigan Avenue  
Chicago, Illinois USA  
Phone: +1 312-922-4400

HOTEL LEVEL	PAGE NUMBER
Lower Level	30
Lobby Level	31
2nd Floor	32
3rd Floor	33
4th Floor	34
5th Floor	35
8th Floor	36



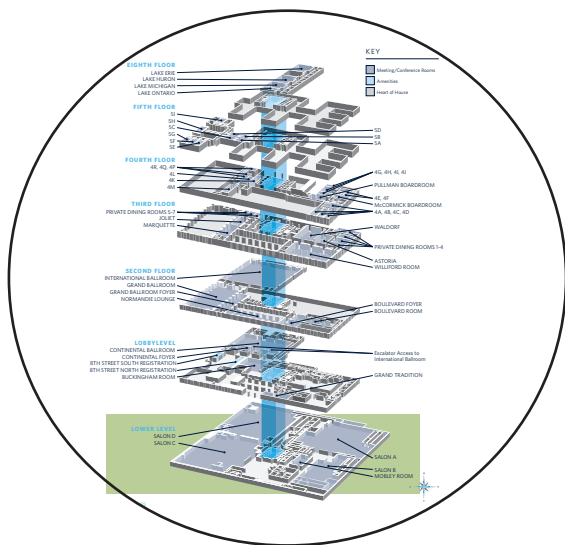


AMUG Key		Room and Floor	Page
REGISTRATION AND HELP DESKS			
1	AMUG Registration & Badge Pickup Pre-Registered Attendees, Speakers, Sponsors and Exhibitors	Lobby Level	31
2	On-site Registration & Financial Office Attendee and Expo Staff on-site Registration and Financial Issues	Lobby Level	31
3	Speaker and Mobile App Center	Lobby Level	31
INFO	AMUG Information Desk	Lower Level	30
TRANSPORTATION AREA			
BUS	Shuttle Between Hotels Shuttle runs between Hilton and Palmer House	Lobby Level, E. Balbo Dr	31
BUS	Buses for Pre-Conference Activities	Lobby Level, E. Balbo Dr	31
BUS	Buses for Tuesday Night Off-Site Dinner and Events	Lobby Level, E. Balbo Dr	31
MEALS AND BREAKS			
B	Breakfast	Grand Ballroom, Normandie Lounge, and Boulevard, 2nd Floor	32
L	Lunch	MONDAY AND THURSDAY AMUGexpo area, Lower Level TUESDAY AND WEDNESDAY Grand Ballroom, Normandie Lounge, and Boulevard, 2nd Floor	30 32 30
D	Dinner	SUNDAY AND MONDAY AMUGexpo area, Lower Level TUESDAY Off-Site WEDNESDAY AND THURSDAY Grand Ballroom, Normandie Lounge, and Boulevard, 2nd Floor	30 32
BRK	Breaks	MORNING BREAKS MONDAY AMUGexpo area in Salon A, B, C, D, Lower Level  TUESDAY AND THURSDAY Continental Foyer (Lobby Level), 3rd Floor Hallway  WEDNESDAY - BUSINESS MEETING International Ballroom (back of room), 2nd Floor  AFTERNOON BREAKS MONDAY, TUESDAY, WEDNESDAY Continental Foyer (Lobby Level), International Foyer (2nd Floor), 3rd Floor Hallway  THURSDAY Salon C (Lower Level), Continental Foyer (Lobby Level), 3rd Floor Hallway	30-33
PRE-CONFERENCE ACTIVITIES			
PRE	ASTM Course	PDR 2, 3rd Floor	33
BUS	Off-Site Tours - Buses	Lobby Level, E. Balbo Dr	31
SUPPORT TEAM			
RO	Red Oak Office	Mobley Room, Lower Level	30
DD	Dock Delivery	South Wabash Avenue, Lobby Level	31
AV	AV Center - Main Office	Buckingham Room, Lobby Level	31
AV2	AV Center Diamond and Platinum Support	PDR 1, 3rd Floor	33
LR	EventNeat Lead Retrieval Services	Mobley Room, Lower Level	30
PV	Photography and Video	Buckingham Room, Lobby Level	31

AMUG Key		Room and Floor	Page
AMUG CONFERENCE ACTIVITIES			
4	AMUGexpo (Sunday - Monday)	Salon A, C, D, Lower Level	30
5	Booth Area Open for Diamond and Platinum Sponsors (Tuesday-Thursday)	Salon A and D, Lower Level	30
6	Manufacturing Loop (Sunday - Thursday)	Hallway, 2nd Floor	32
7	Student Poster Session (Thursday)	Salon C, Lower Level	30
8	Technical Competition (Monday night)	Salon B, Lower Level	30
8	Technical Competition Extended Viewing (Tuesday - Wednesday)	Salon B, Lower Level	30
AMUG CONFERENCE SESSIONS (ALPHABETICAL ORDER)			
9	Aerospace and Transportation (AMUG Track)	International Ballroom NORTH, 2nd Floor Continental Room C, Lobby Level	32 31
10	AM Materials (AMUG Track)	Continental Room A, Lobby Level	31
11	AM Metal Technologies (AMUG Track)	International Ballroom SOUTH, 2nd Floor	32
12	AM Non-Metal Technologies (AMUG Track)	Continental Room C, Lobby Level	31
13	AMUG Business Meeting	International Ballroom, 2nd Floor	32
13	AMUG General Session	International Ballroom, 2nd Floor	32
13	AMUG Opening Address	International Ballroom, 2nd Floor	32
13	AMUG Scholarship Presentation	International Ballroom, 2nd Floor	32
14	Casting Metals (AMUG Track)	Continental Room C, Lobby Level	31
D1	Diamond Speaking Sessions	Waldorf, 3rd Floor	33
D2	Diamond Speaking Sessions	Astoria, 3rd Floor	33
D3	Diamond Speaking Sessions	Williford A, 3rd Floor	33
D4	Diamond Training Sessions	Williford B, 3rd Floor	33
D5	Diamond Training Sessions	Williford C, 3rd Floor	33
D6	Diamond Training Sessions	PDR 2, 3rd Floor	33
15	Drop-in Workshops Thursday	Salon C, Lower Level	30
16	Education & Training (AMUG Track)	International Ballroom SOUTH, 2nd Floor	32
17	Healthcare - Medical & Dental (AMUG Track)	Continental Room A, Lobby Level	31
13	Innovators Showcase	International Ballroom, 2nd Floor	32
13	Keynote Speakers	International Ballroom, 2nd Floor	32
18	New Member Welcome	Grand Ballroom, 2nd Floor	32
P1	Platinum Speaking Sessions	Marquette, 3rd Floor	33
P2	Platinum Speaking Sessions	Joliet, 3rd Floor	33
19	Scanning & Metrology (AMUG Track)	Continental Room B, Lobby Level	31
20	Software (AMUG Track)	Continental Room B, Lobby Level	31
13	Technical Competition Presentations	International Ballroom, 2nd Floor	32

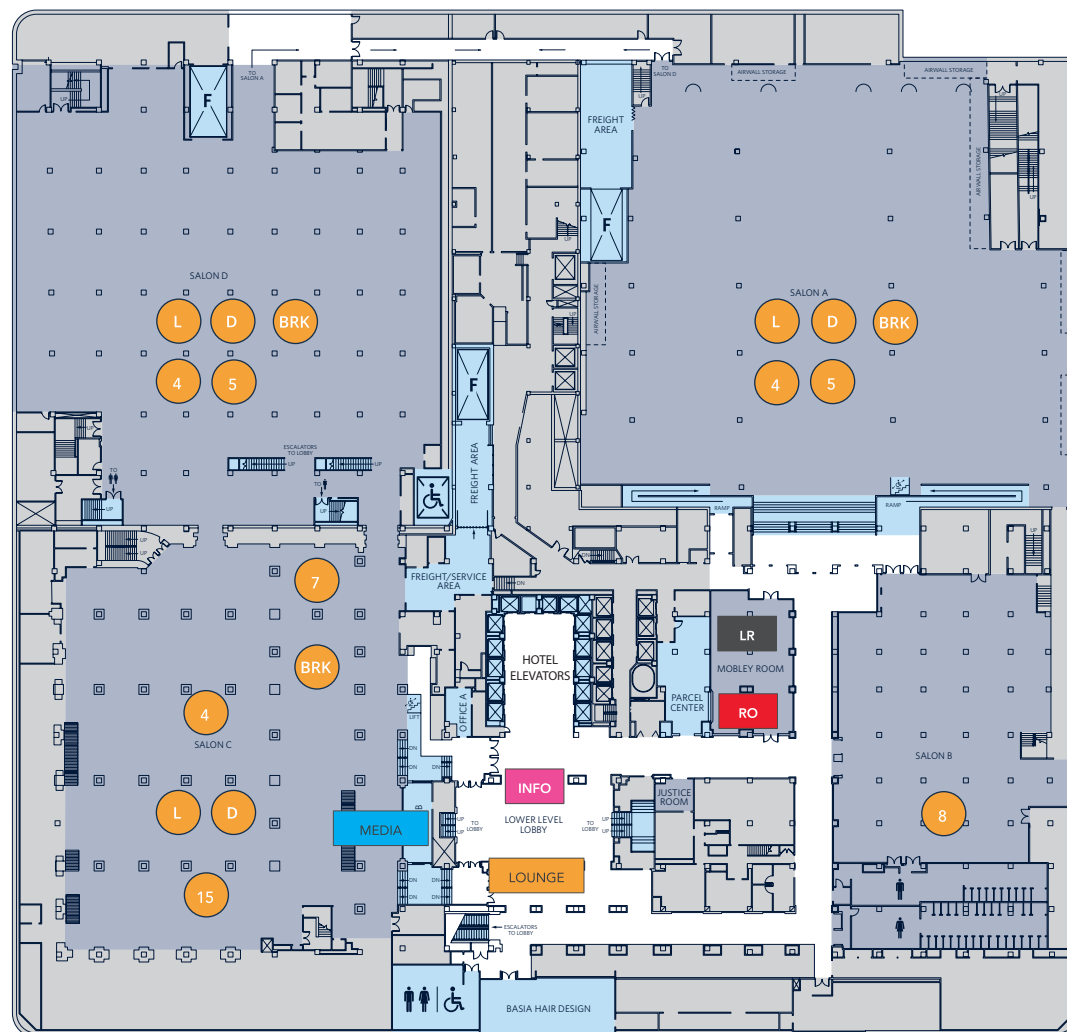
AMUG Key		Room and Floor	Page
SALES ROOMS FOR DIAMOND AND PLATINUM SPONSORS			
DIAMOND SPONSORS SALES ROOMS			
ADDITEC	ADDITEC	4-J, 4th Floor	34
DMG	DMG MORI	4-B, 4th Floor	34
Dyndrite	Dyndrite	4-A, 4th Floor	34
EOS	EOS	Lake Michigan, 8th Floor	36
Evonik	Evonik	4-F, 4th Floor	34
Formlabs	Formlabs	4-K, 4th Floor	34
GE	GE Additive	Lake Huron, 8th Floor	36
GoEngineer	GoEngineer	Lake Ontario, 8th Floor	36
Meltio	Meltio	4-D, 4th Floor	34
Nexa3D	Nexa3D	4-C, 4th Floor	34
Stratasys	Stratasys	Lake Erie, 8th Floor	36
Tekna	Tekna	4-M, 4th Floor	34
Wurth	Wurth Additive Group	4-E, 4th Floor	34
PLATINUM SPONSORS SALES ROOMS			
5A	Platinum Sales Room	5A, 5th Floor	35
5B	Platinum Sales Room	5B, 5th Floor	35
5C	Platinum Sales Room	5C, 5th Floor	35
5D	Platinum Sales Room	5D, 5th Floor	35
5E	Platinum Sales Room	5E, 5th Floor	35
5F	Platinum Sales Room	5F, 5th Floor	35
5G	Platinum Sales Room	5G, 5th Floor	35
5H	Platinum Sales Room	5H, 5th Floor	35
5I	Platinum Sales Room	5I, 5th Floor	35
LOUNGE AREAS			
MEDIA	Media Center and Lounge (MCL)	Salon C, Lower Level	30
LOUNGE	New Member Lounge (NML)	Lower Level Lobby	30
LOUNGE	Scholarship Lounge (SL)	Lower Level Lobby	30

# LOWER LEVEL



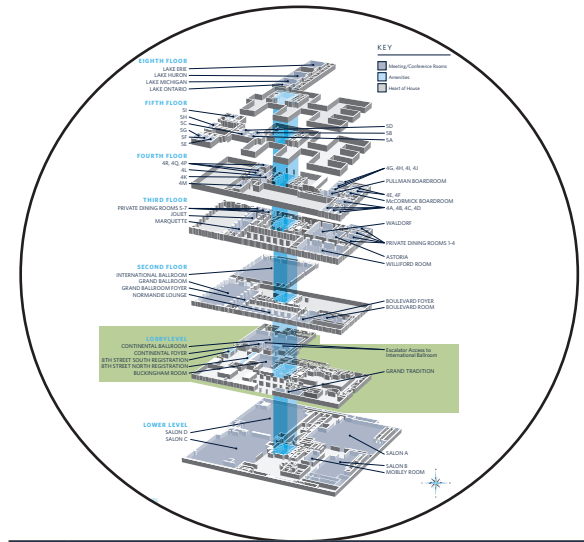
AMUG Key		Room and Floor
REGISTRATION AND HELP DESKS		
INFO	AMUG Information Desk	Lower Level
MEALS AND BREAKS		
L	Lunch	MONDAY AND THURSDAY AMUGexpo area, Lower Level TUESDAY AND WEDNESDAY Grand Ballroom, Normandie Lounge, and Boulevard, 2nd Floor
D	Dinner	MONDAY AND THURSDAY AMUGexpo area, Lower Level TUESDAY AND WEDNESDAY Grand Ballroom, Normandie Lounge, and Boulevard, 2nd Floor
BRK	Breaks	<u>MORNING BREAKS</u> MONDAY AMUGexpo area in Salon A, B, C, D, Lower Level  <u>AFTERNOON BREAKS</u> THURSDAY Salon C (Lower Level), Continental Foyer (Lobby Level), 3rd Floor Hallway
SUPPORT TEAM		
RO	Red Oak Office	Mobley Room, Lower Level
LR	EventNeat Lead Retrieval Services	Mobley Room, Lower Level
LOUNGE AREAS		
MEDIA	Media Center and Lounge (MCL)	Salon C, Lower Level
LOUNGE	New Member Lounge (NML)	Lower Level Lobby
LOUNGE	Scholarship Lounge (SL)	Lower Level Lobby

AMUG CONFERENCE ACTIVITIES		
4	AMUGexpo (Sunday - Monday)	Salon A, C, D, Lower Level
5	Booth Area Open for Diamond and Platinum Sponsors (Tuesday-Thursday)	Salon A and D, Lower Level
7	Student Poster Session (Thursday)	Salon C, Lower Level
8	Technical Competition (Monday night)	Salon B, Lower Level
8	Technical Competition Extended Viewing (Tuesday - Wednesday)	Salon B, Lower Level
15	Drop-in Workshops Thursday	Salon C, Lower Level



## HOTEL KEY

Meeting/Conference Rooms	ADA Elevator
Amenities	ADA Lift
Heart of House	Restrooms
	Elevator
	Freight Elevator



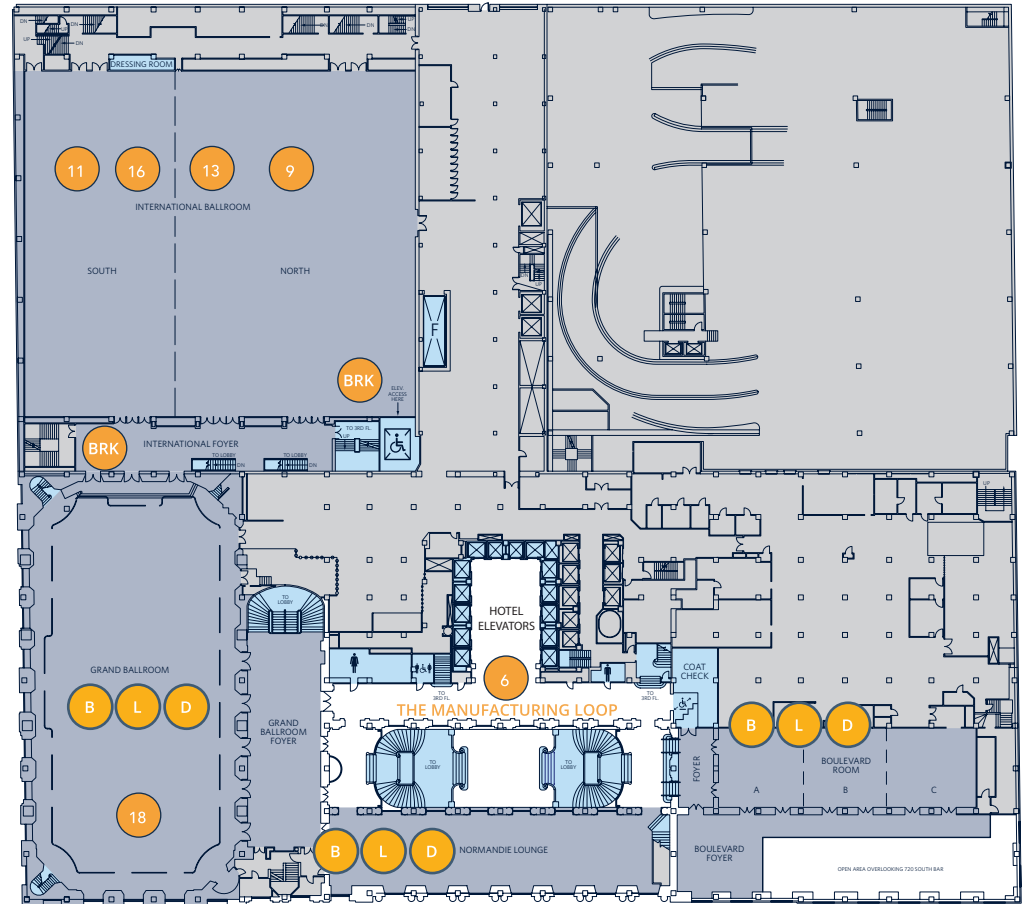
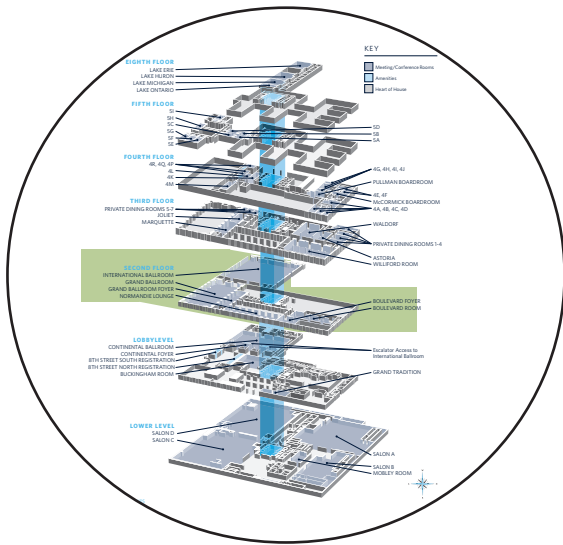
AMUG Key		Room and Floor
REGISTRATION AND HELP DESKS		
1	AMUG Registration & Badge Pickup Pre-Registered Attendees, Speakers, Sponsors and Exhibitors	Lobby Level
2	On-site Registration & Financial Office Attendee and Expo Staff on-site Registration and Financial Issues	Lobby Level
3	Speaker and Mobile App Center	Lobby Level
TRANSPORTATION AREA		
BUS	Shuttle Between Hotels Shuttle runs between Hilton and Palmer House	Lobby Level, E. Balbo Dr
BUS	Buses for Pre-Conference Activities	Lobby Level, E. Balbo Dr
BUS	Buses for Tuesday Night Off-Site Dinner and Events	Lobby Level, E. Balbo Dr
MEALS AND BREAKS		
BRK	Breaks	<b>MORNING BREAKS</b> TUESDAY AND THURSDAY Continental Foyer (Lobby Level), 3rd Floor Hallway  <b>AFTERNOON BREAKS</b> MONDAY, TUESDAY, WEDNESDAY Continental Foyer (Lobby Level), International Foyer (2nd Floor), 3rd Floor Hallway
PRE-CONFERENCE ACTIVITIES		
BUS	Off-Site Tours - Buses	Lobby Level, E. Balbo Dr
SUPPORT TEAM		
DD	Dock Delivery	South Wabash Avenue, Lobby Level
AV	AV Center - Main Office	Buckingham Room, Lobby Level
PV	Photography and Video	Buckingham Room, Lobby Level

## HOTEL KEY

Meeting/Conference Rooms	ADA Elevator
Food & Beverages	ADA Lift
Amenities	Restrooms
Heart of House	Elevator
	Freight Elevator

AMUG CONFERENCE SESSIONS (ALPHABETICAL ORDER)		
9	Aerospace and Transportation (AMUG Track)	International Ballroom NORTH, 2nd Floor Continental Room C, Lobby Level
10	AM Materials (AMUG Track)	Continental Room A, Lobby Level
12	AM Non-Metal Technologies (AMUG Track)	Continental Room C, Lobby Level
14	Casting Metals (AMUG Track)	Continental Room C, Lobby Level
17	Healthcare - Medical & Dental (AMUG Track)	Continental Room A, Lobby Level
18	Scanning & Metrology (AMUG Track)	Continental Room B, Lobby Level
19	Software (AMUG Track)	Continental Room B, Lobby Level





2ND FLOOR

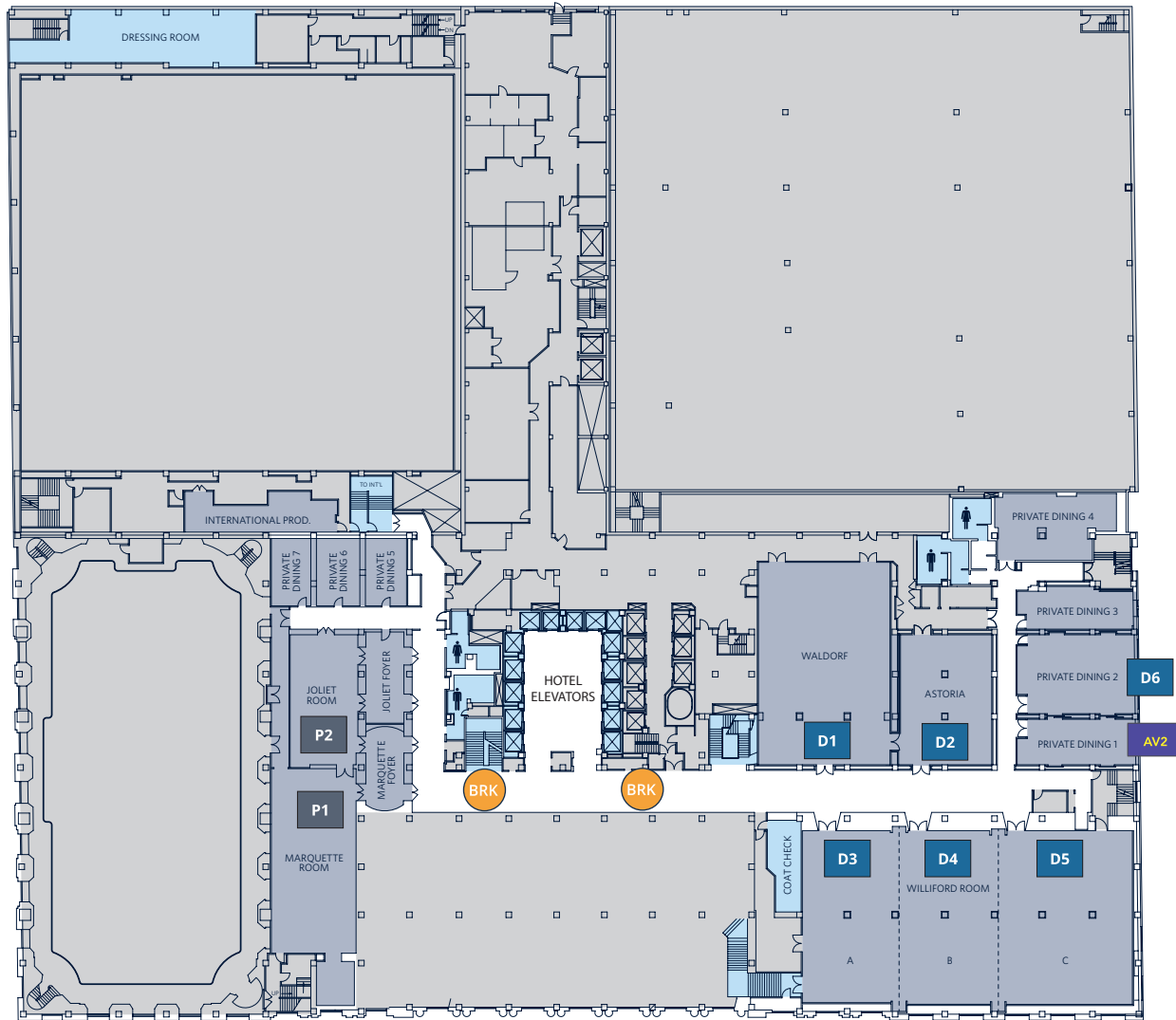
AMUG Key		Room and Floor
AMUG CONFERENCE ACTIVITIES		
6	Manufacturing Loop (Sunday - Thursday)	Hallway, 2nd Floor
AMUG CONFERENCE SESSIONS (ALPHABETICAL ORDER)		
9	Aerospace and Transportation (AMUG Track)	International Ballroom NORTH, 2nd Floor Continental Room C, Lobby Level
11	AM Metal Technologies (AMUG Track)	International Ballroom SOUTH, 2nd Floor
13	AMUG Business Meeting	International Ballroom, 2nd Floor
13	AMUG General Session	International Ballroom, 2nd Floor
13	AMUG Opening Address	International Ballroom, 2nd Floor
13	AMUG Scholarship Presentation	International Ballroom, 2nd Floor
16	Education & Training (AMUG Track)	International Ballroom SOUTH, 2nd Floor
13	Innovators Showcase	International Ballroom, 2nd Floor
13	Keynote Speakers	International Ballroom, 2nd Floor
18	New Member Welcome	Grand Ballroom, 2nd Floor
13	Technical Competition Presentations	International Ballroom, 2nd Floor

MEALS AND BREAKS		
B	Breakfast	Grand Ballroom, Normandie Lounge, and Boulevard, 2nd Floor
L	Lunch	MONDAY AND THURSDAY AMUGexpo area, Lower Level TUESDAY AND WEDNESDAY Grand Ballroom, Normandie Lounge, and Boulevard, 2nd Floor
D	Dinner	SUNDAY AND MONDAY AMUGexpo area, Lower Level TUESDAY Off-Site WEDNESDAY AND THURSDAY Grand Ballroom, Normandie Lounge, and Boulevard, 2nd Floor
BRK	Breaks	MORNING BREAKS WEDNESDAY - BUSINESS MEETING International Ballroom (back of room), 2nd Floor  AFTERNOON BREAKS MONDAY, TUESDAY, WEDNESDAY Continental Foyer (Lobby Level), International Foyer (2nd Floor), 3rd Floor Hallway

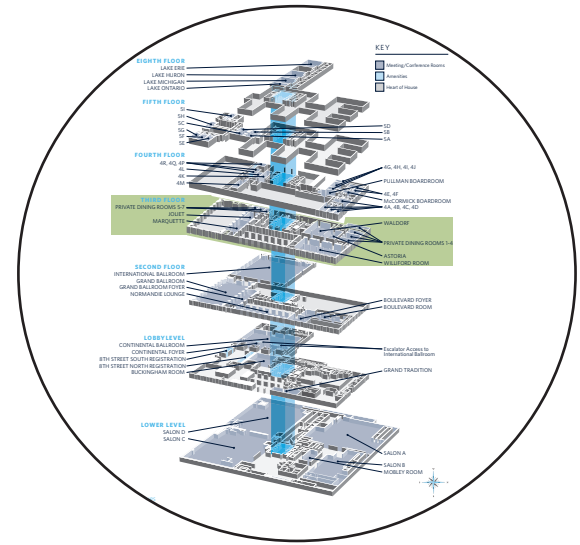
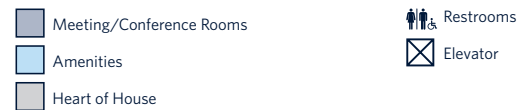
## HOTEL KEY

Meeting/Conference Rooms	ADA Elevator
Amenities	ADA Lift
Heart of House	Restrooms
	Elevator
	Freight Elevator

# 3RD FLOOR

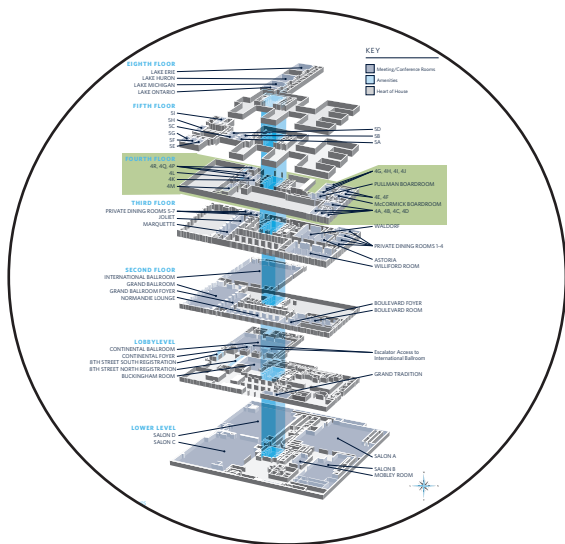


## HOTEL KEY



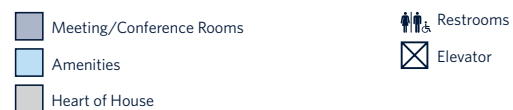
AMUG Key		Room and Floor
AMUG CONFERENCE SESSIONS (ALPHABETICAL ORDER)		
D1	Diamond Speaking Sessions	Waldorf, 3rd Floor
D2	Diamond Speaking Sessions	Astoria, 3rd Floor
D3	Diamond Speaking Sessions	Willford A, 3rd Floor
D4	Diamond Training Sessions	Willford B, 3rd Floor
D5	Diamond Training Sessions	Willford C, 3rd Floor
D6	Diamond Training Sessions	PDR 2, 3rd Floor
P1	Platinum Speaking Sessions	Marquette, 3rd Floor
P2	Platinum Speaking Sessions	Joliet, 3rd Floor
SUPPORT TEAM		
AV2	AV Center Diamond and Platinum Support	PDR 1, 3rd Floor
MEALS AND BREAKS		
BRK	Breaks	<p><b>MORNING BREAKS</b> TUESDAY AND THURSDAY Continental Foyer (Lobby Level), 3rd Floor Hallway</p> <p><b>AFTERNOON BREAKS</b> MONDAY, TUESDAY, WEDNESDAY Continental Foyer (Lobby Level), International Foyer (2nd Floor), 3rd Floor Hallway</p> <p><b>THURSDAY</b> Salon C (Lower Level), Continental Foyer (Lobby Level), 3rd Floor Hallway</p>

# 4TH FLOOR

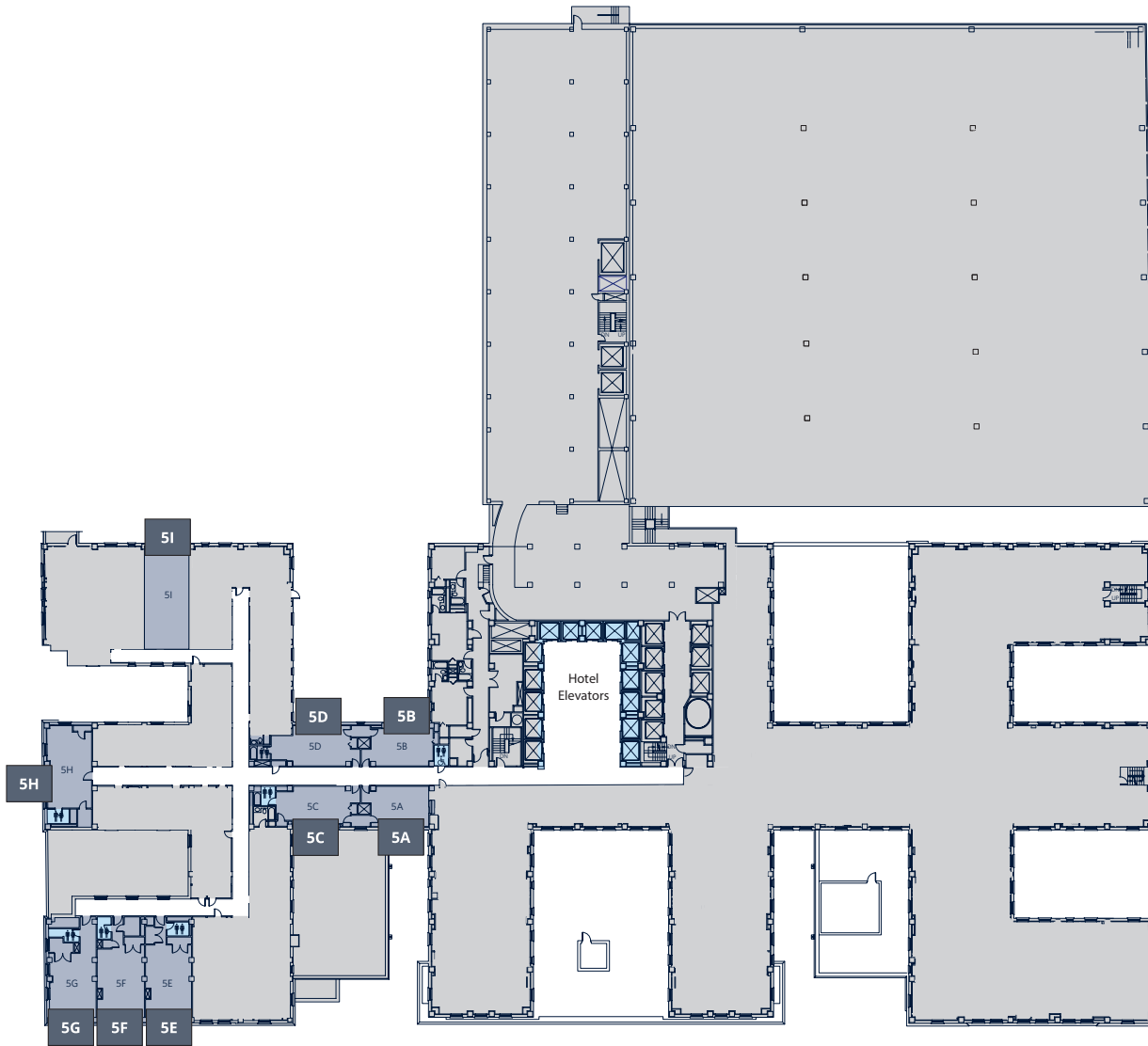


AMUG Key		Room and Floor
DIAMOND SPONSORS SALES ROOMS		
ADDITEC	ADDITEC	4-J, 4th Floor
DMG	DMG MORI	4-B, 4th Floor
Dyndrite	Dyndrite	4-A, 4th Floor
Evonik	Evonik	4-F, 4th Floor
Formlabs	Formlabs	4-K, 4th Floor
Meltio	Meltio	4-D, 4th Floor
Nexa3D	Nexa3D	4-C, 4th Floor
Tekna	Tekna	4-M, 4th Floor
Wurth	Wurth Additive Group	4-E, 4th Floor

## HOTEL KEY



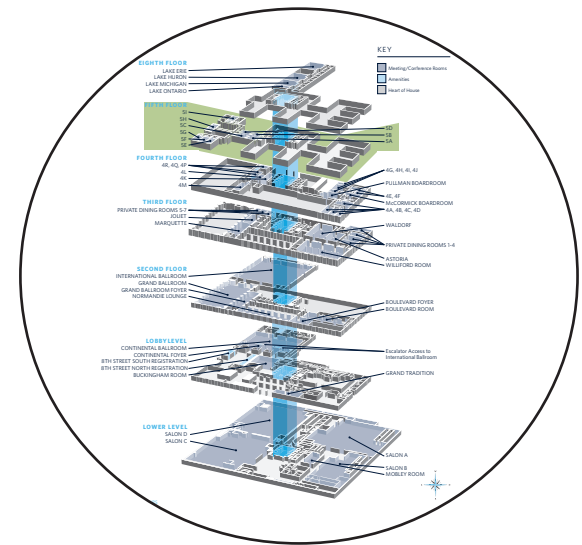




## HOTEL KEY

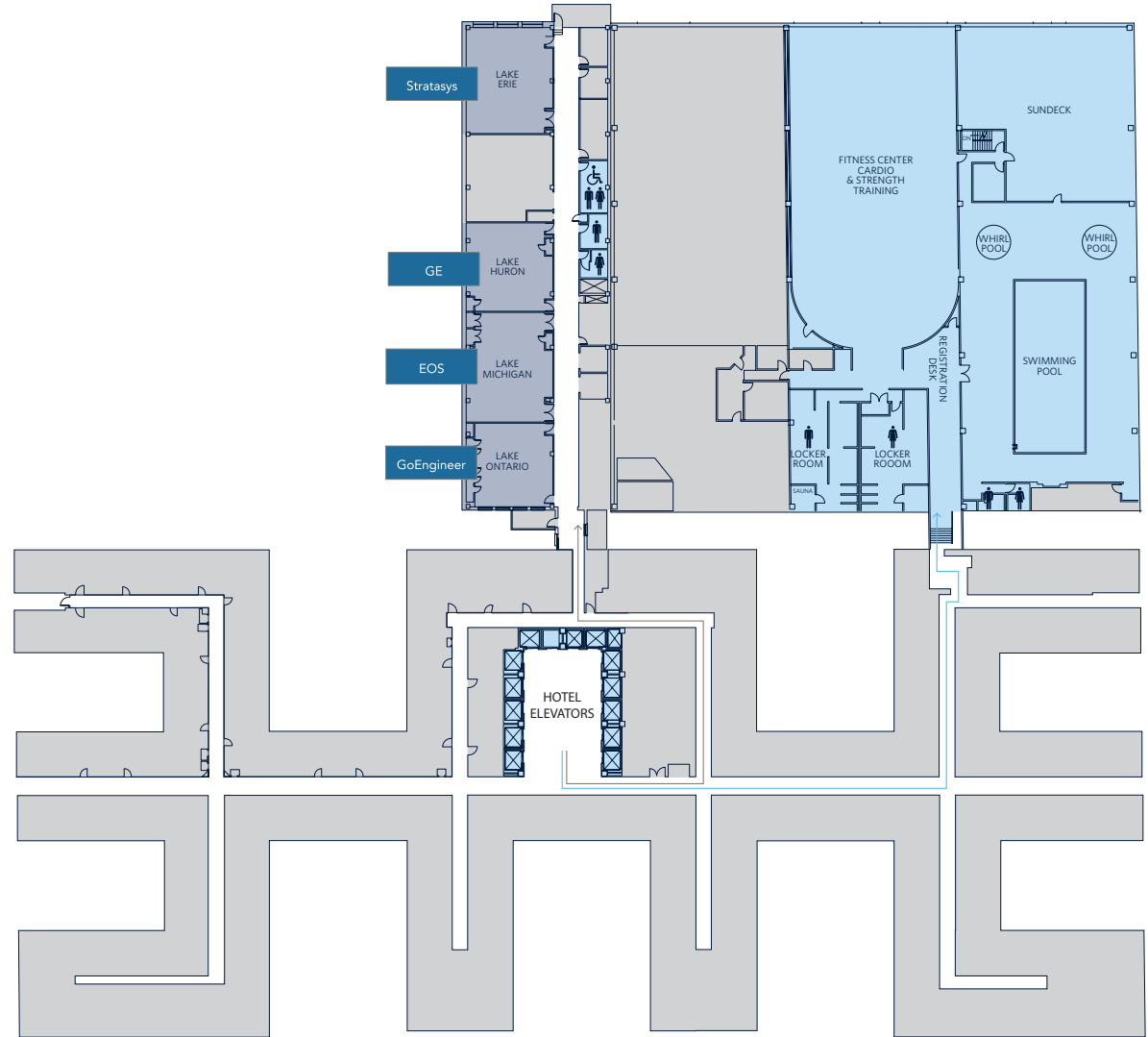
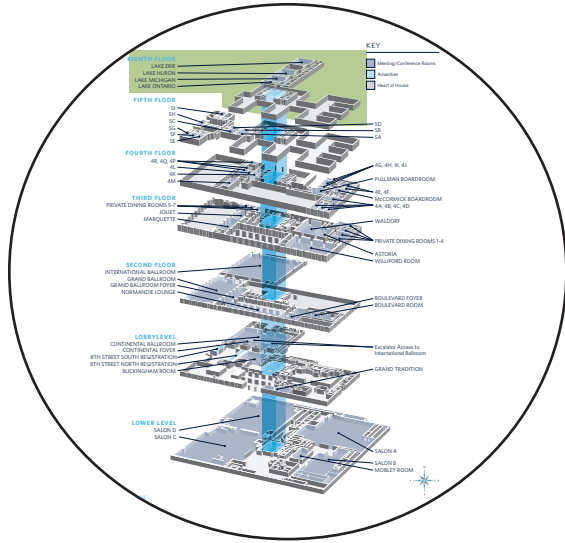
- Meeting/Conference Rooms
- Amenities
- Heart of House

- R Restrooms
- E Elevator



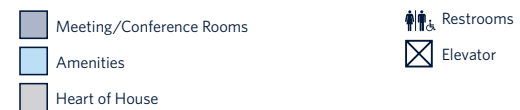
AMUG Key		Room and Floor
PLATINUM SPONSORS SALES ROOMS		
5A	Platinum Sales Room	5A, 5th Floor
5B	Platinum Sales Room	5B, 5th Floor
5C	Platinum Sales Room	5C, 5th Floor
5D	Platinum Sales Room	5D, 5th Floor
5E	Platinum Sales Room	5E, 5th Floor
5F	Platinum Sales Room	5F, 5th Floor
5G	Platinum Sales Room	5G, 5th Floor
5H	Platinum Sales Room	5H, 5th Floor
5I	Platinum Sales Room	5I, 5th Floor

# 8TH FLOOR



AMUG Key		Room and Floor
DIAMOND SPONSORS SALES ROOMS		
EOS	EOS	Lake Michigan, 8th Floor
GE	GE Additive	Lake Huron, 8th Floor
GoEngineer	GoEngineer	Lake Ontario, 8th Floor
Stratasy's	Stratasy's	Lake Erie, 8th Floor

## HOTEL KEY



# AMUG HISTORY

The Additive Manufacturing Users Group's origins date back to the late 1980's when the founding industry users group was called 3D Systems North American Stereolithography Users Group, a users group solely focused on the advancement of stereolithography (SL) use with the owners and operators of 3D Systems' equipment. Today, AMUG educates and supports users of all additive manufacturing technologies. The primary charter of the group remains the same, but its members are much more diversified, global and focused in advancing additive manufacturing technology for rapid manufacturing and prototyping.

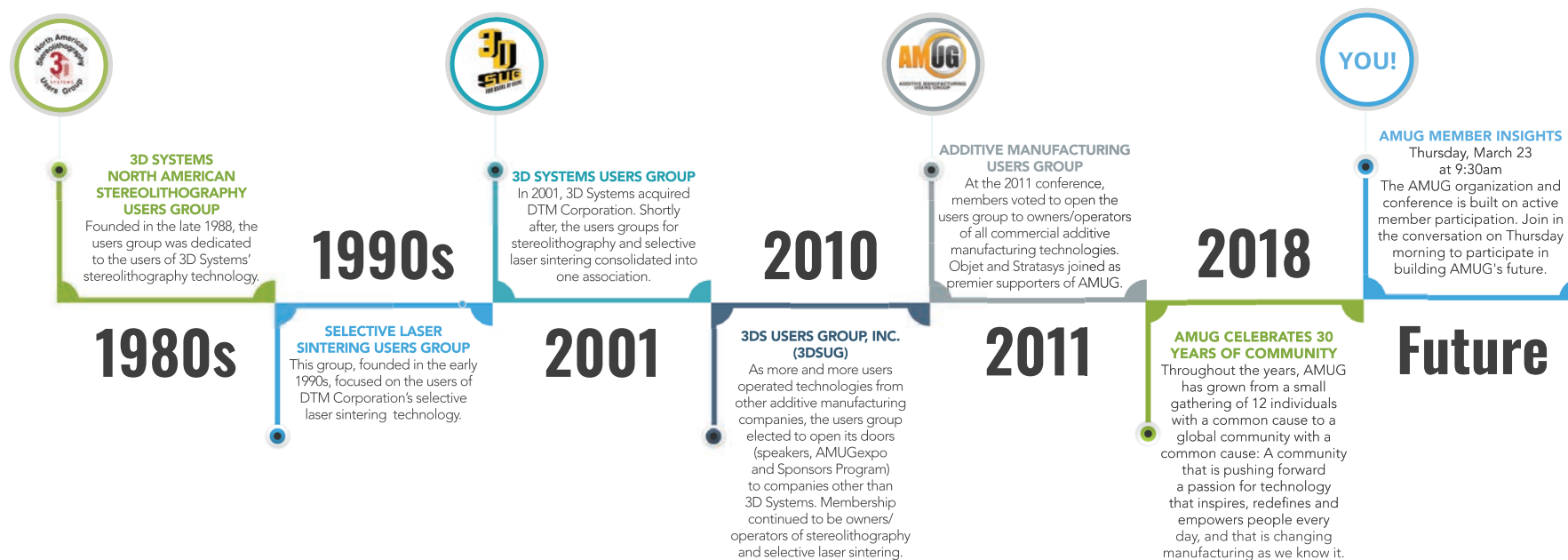
With AMUG's expanded range, operators/owners of any commercial technology — stereolithography (SL), selective laser sintering (SLS), 3D printing, CLIP, DMD, DMLM, DMLS, EBM, FDM, LC, LS, MJF, PolyJet, SLM, and more — can benefit from the information exchange and professional network that AMUG offers.

## OBJECTIVES

- + Encourage effective communication of information amongst all additive manufacturing equipment owners and operators.
- + Provide a forum for presentations and the ability to network with colleagues.
- + Propose solutions to problems that involve basic modification to hardware or software.
- + Provide an open atmosphere for technology exchange.

## ACTIVITIES

- + Hold annual and periodic meetings for the purpose of conducting business of AMUG.
- + Establish special task or interest groups to study specific mutual areas of interest.
- + Identify problems and propose solutions or improvements and recommend uniform practices and techniques to be used by the membership.





# DINO AWARD

DISTINGUISHED INNOVATOR OPERATOR

The Distinguished INnovator Operator (DINO) Award recognizes individuals for both their contributions and years of service within the additive manufacturing industry and within the AMUG organization. Each year, following an open call for peer/self-nominations, the selection committee reviews all submissions as well as the list of conference registrants and selects DINOs based on factors such as:

- Contributions to the AM industry worldwide
- Contributions to AMUG (e.g., speaker, volunteer)
- Years of hands-on work with an AM technology
- Willingness to share and assist
- Skill level
- And other subjective factors

These criteria make the DINO Award very prestigious.



## 2022 DINO RECIPIENTS



2022 DINOS (Left to Right)

Ben Arnold, Massivit 3D; Nick Licari, Computer Aided Technology; Matthew Donovan, VulcanForms

## DINO RECIPIENTS FROM 1998 - 2022

### 2022

Ben Arnold, Massivit 3D  
Matthew Donovan, VulcanForms  
Nick Licari, Computer Aided Technology

### 2021

Shane Collins, ASTM International  
Giles Gaskell, Hexagon  
Ana Neves, RAMCO  
Robin Van Bragt, Eagle Design and Technology Inc.

### 2020

Jeff DeGrange, Impossible Objects Inc  
Bob Diaz, College of Southern Nevada  
Leslie Frost, GE Additive  
Youping Gao, Castheon  
Ed Graham, ProtoCAM  
Paul Hojan, Christie Digital  
Evan Kirby, Materialise  
Ulf Lindhe, Oqton, Inc.  
Dana McCallum, Carbon, Inc.  
Bob Wood, ExOne

### 2019

Brett Charlton, BD  
Jay Dinsmore, Dinsmore Associates  
Rory Jackson, RAMP Inc.  
Brett Lyons, Jabil Additive  
Bob Markley, 3rd Dimension Industrial  
3D Printing  
Rick Moore, U.S. Army  
Jeremy Pullin, Sartorius Stedim  
Nate Schumaker, Midwest Prototyping  
Tuan Tranpham, Desktop Metal  
Jordan Weston, Milwaukee School of Engineering

### 2018

Andy Christensen, Somaden LLC  
Rey Chu, PADT, Inc.  
Douglas Greenwood, Fleet Readiness Center East  
Steve Hanna, 3D Systems  
Rick Pressley, Renaissance Services, Inc.  
Andrew Sliwa, Custom Prototypes Inc.  
Fried Vancraen, Materialise  
Pat Warner, Renault Sport Formula One

### 2017

Ted Anderson, GE Additive  
Bruce Bradshaw, Arcam AB  
Carl Deckard, Structured Polymers  
Joerg Griessbach, The SL Pro  
Jim Harrison, The Solid Experts  
Kim Killoran, Stratasys  
Peter Liacouras, Walter Reed Military Medical Center  
Steve Murray, Hoosier Pattern  
Shannon Van Deren, Layered Manufacturing and Consulting  
Kevin Zaras, DSM Functional Materials

### 2016

Andrew Allshorn, At 3D-Squared, Ltd.  
Ben Dolan, UC Irvine  
Vito Gervasi, Milwaukee School of Engineering (MSOE)  
Elizabeth Goode, Goodelink  
Mike Hascher, Eagle Engineered Solutions Inc.  
Joe Holland, Hyphen



Bonnie Meyer, Stratasys  
 Todd Reese, Realize, Inc.  
 Dan Welker, Yazaki North America  
 Jack Ziemba, Aristo-Cast, Inc.

2015  
 Vince Anawenter, Milwaukee School of  
 Engineering (MSOE)  
 Derek Ellis, Computer Aided Technology, Inc.  
 Andrew Graves, Stratasys Direct Manufacturing  
 Steven Kossett, Natural Resource Research  
 Institute, University of Minnesota  
 Stefan Ritt, SLM Solutions  
 Harold Sears, Ford Motor Company  
 Ed Tackett, University of California, Irvine  
 Mark Wynn, Yazaki North America

2014  
 Mark Barfoot, Hyphen  
 Scott Crump, Stratasys  
 Stewart Davis, CRP USA  
 Jason Dickman, American Precision Prototyping  
 Jim Reitz, Rapid Tech Consulting

2013  
 Chuck Alexander, Solid Concepts  
 Brian Bauman, Linked In 3D  
 Paul Bordner, Laser Reproductions  
 Todd Grimm, T.A. Grimm & Associates  
 Terry Hoppe, Stratasys

2012  
 Paul Bates, Reebok  
 David Bourell, University of Texas  
 Bill Braune, Met-L-Flo  
 Duane Byerly, Xerox  
 Robert Coleman, Mattell  
 Roger Cunningham, Integra  
 Mike Littrell, CIDEAS Inc.  
 Jason Lopes, Legacy Effects  
 Frank Medina, University of Texas El Paso  
 Dan Mishek, Vista Technologies  
 Larry Monahan, Becton Dickinson  
 Charlie Norton, NCP Leasing  
 Ken Patton, RapidTech/Saddleback  
 Brad Palumbo, Phoenix Analysis & Design  
 Bradley Ruprecht, US Army  
 Scott Schermer, S.C. Johnson  
 Thomas Starr, University of Louisville  
 Sean Wise, RePliForm  
 Michael Zerbe, Newell Rubbermaid

2011  
 Bret Bordner, Laser Reproductions  
 Mike Connor, Integra  
 Kevin Dyer, InterPro  
 Bob Dzigan, buyCASTINGS  
 Fred Hilbrandt, FBI  
 Bill Lamey, Boeing  
 John Schaefer, DSM Somos  
 Greg Stein, Northrop Grumman  
 Xu Xiaoshu, Farsoon Hi-Tech  
 Arnold Ziegler, Dalimer

2010  
 Ron Belknap, Protocam  
 Jerry Bordner, Laser Reproductions  
 Dr. Dave Bourell, University of Texas  
 Sheku Kamara, Milwaukee School of Engineering (MSOE)  
 Kevin McAlea, 3D Systems  
 Bruce Okkema, Eagle Design & Technology  
 Lance Shanklin, Integra Support

2009  
 Neil Hopkinson, Loughborough University  
 Dr. Paul Jacobs, 3D Systems  
 Harold Luper, Huntsman  
 Steve McDonald, L3  
 Dave Rosen, Georgia Tech  
 Richard Smeenk, Agile Manufacturing  
 Graham Tromans, Loughborough University

2008  
 Mark Abshire, DSM  
 Denny Black, Valeo Sylvania  
 Chris Huskamp, The Boeing Phantom Works  
 Steinar Killi, Oslo School  
 Troy Kuhn, Chrysler  
 Gideon Levy, University of Applied Sciences  
 Ariel Lijenstein, Robtec  
 Jan Richter, Solid Concepts

2007  
 Rick Booth, Advanced Laser Materials  
 Carl Dekker, Met-L-Flo  
 Kent Firestone, Solid Concepts  
 Gary Graf, University of Louisville  
 Bruce LeMaster, Applied Rapid Technologies  
 Tom Mueller, Express Pattern  
 Gary Rabinovitz, Reebok International  
 Lawrence Winnen, Tyco Electronics

2006  
 Joe Allison, Solid Concepts  
 Daniel Baker, US Army Benet Labs  
 Phillip Conner, 3D Systems  
 Renee Flynn, Paramount Industries  
 Soeren Griessbavh, V.G. Kunstsoftechni  
 Terry Kreplin, Baxter  
 R.J. Robinson, University of Kentucky  
 Igata Tersuzo, INCS  
 Georgia Theriot, GT Signature  
 James Williams, Paramount Industries

2005  
 Gregg Banyon, Delphi  
 Martin Colombo, ATI  
 Richard Davis, Motorola  
 Ken Davis, University of Louisville  
 Al DeWitt, Rapid Solutions  
 Mike Scanlon, Homes Group  
 Roger Speilman, Solid Concepts  
 Brent Stucker, Utah State  
 Scott Turner, Scicon  
 Rethia Williams, RMB Products

2004  
 Kevin Ayers, FBI  
 Tim Gornet, University of Louisville  
 David Leigh, Harvest Technologies  
 Jeff Smith, Moeller Design  
 Derrick Spaven, RPM Solutions  
 Bob Speer, ALCOA  
 Scott Sutterer, DSM Somos  
 Bob Zubrickie, Tyco Electronics

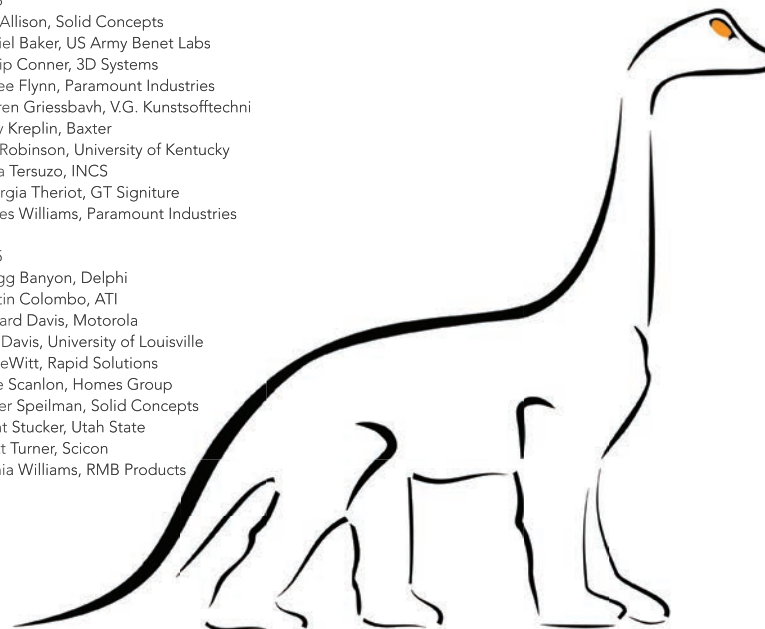
2003  
 Phill Dickens, Loughborough University  
 Judy Gill, Raytheon  
 Mark Horner, The Technology House

2001  
 Steve Deak, Hasbro  
 Beth Israelnaim, Becton-Dickenson  
 Kevin Kennedy, Prototech Engineering  
 Tom Sorovetz, Daimler Chrysler

2000  
 Dave Flynn, Express Pattern  
 Elaine Hunt, Clemson University  
 Graham Tromans, Rover Group  
 Doug Van Putte, Eastman Kodak

1998  
 Guy Bourdeau, Beckman Coulter  
 Rob Connelly, Becton-Dickinson  
 Joe DeGuglielmo, Eastman Kodak  
 Chuck Hull, 3D Systems  
 John Mack, General Motors  
 Fred Steinbauer, Pratt & Whitney

DINO Award established 1998



**Tuesday, March 21 at 9:00am**  
**International Ballroom, 2nd Floor**

# 2023 DINO AWARDS

Join us as we induct the newest DINOs!

est. 1998

The DINO or (Distinguished INovator Operator) was established in 1998, at the tenth annual North America Stereolithography User Group or NASUG. The Board of Directors decided to pay homage to a handful of veteran Users Group members and early adopters of what was then referred to as "Rapid Prototyping". AMUG continues the DINO award tradition to celebrate members that helped advance the Additive Manufacturing (AM) technology through innovation, contribution and selfless involvement within the AMUG organization and the AM community. What started out as an impromptu celebration for a few Rapid Prototyping pioneers, has grown into one of the most coveted awards in the Additive Manufacturing industry and currently is bestowed upon 170+ lifetime AMUG members.

Why a DINO?

The significance of the pre-historic creature was to signify the recipient's equipment and process innovations and their tenure in the Additive Manufacturing industry... DINO was born.

The Award

Initially, a small statue of a toy dinosaur would be used as the trophy. Over the years, the DINO has evolved. The DINO is 3D Printed in SL and then metal plated. Once plated the DINO is mounted on a slate tile. In addition to the award and to help members at the AMUG Conference find a DINO recipient, a small 3D metal printed pin was created and now part of the notability.

At the AMUG Conference

When you see a DINO member (with a DINO pin or DINO printed on their badge), come up and say hello - DINOs are always available for a conversation to discuss a technology, application, the industry, or to help you find where you need to go.

# 2022-2023 AMUG BOARD OF DIRECTORS

The AMUG organization has been building the user group since 1988. As an all-volunteer organization, the AMUG Board works with individuals globally to increase awareness and build a strong additive manufacturing community.

If you are interested in joining the expanding AMUG team, contact our Nominating Committee at [nomcom@amug.com](mailto:nomcom@amug.com).



PRESIDENT  
MARK ABSHIRE  
[president@amug.com](mailto:president@amug.com)



VICE PRESIDENT  
SHANNON VAN DEREN  
Layered Manufacturing and Consulting  
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DIRECTOR,  
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Meld Manufacturing  
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IMMEDIATE PAST PRESIDENT  
CARL DEKKER  
Met-L-Flo  
[pastpresident@amug.com](mailto:pastpresident@amug.com)

# 2022-2023 AMUG COMMITTEES

The AMUG organization relies on the support of volunteers from the AM community for its success. Active participation in committees is one way to engage, learn, support, and contribute. Below are the committees and the current members that make them work. If you are interested in participating, complete the AMUG Volunteer form on the AMUG website now or before June 1st. Committee members will be selected and approved by June 30th. The term for all committees will be one year starting July 1st.

## CONFERENCE COMMITTEES

<b>AGENDA &amp; PROGRAM</b> CHAIRPERSON: Jordan Weston, MSOE MEMBERS: Ed Graham, ProtoCAM Todd Grimm, T. A. Grimm & Associates Kim Killoran, Stratasys Nate Schumacher, Midwest Prototyping Shannon Van Deren, Layered Manufacturing and Consulting  CONTACT: AGENDA@AMUG.COM	<b>DINO SELECTION</b> CHAIRPERSON: Gary Rabinovitz, Reebok MEMBERS: Andrew Graves, Covestro Todd Grimm, T. A. Grimm & Associates Bob Markley, ADDman Engineering Stefan Ritt, Technical University of Luebeck Shannon Van Deren, Layered Manufacturing and Consulting  CONTACT: DINO@AMUG.COM	<b>EVENT &amp; HOSPITALITY</b> CHAIRPERSON: Thomas Sorovetz, T.A. Sorovetz, LLC   CONTACT: EVENTMANAGER@AMUG.COM	<b>EXPO (AMUGexpo)</b> CHAIRPERSON: Bob Wood MEMBERS: Jamie Cone, BD Matthew Mitchell, Yazaki Thomas Murphy, Shapeways Thomas Sorovetz (Advisor), T. A. Sorovetz, LLC  CONTACT: EXPO@AMUG.COM	<b>RECOGNITION</b> CHAIRPERSON: Mark Barfoot, EWI MEMBERS: Vince Anewenter (Advisor), MSOE  CONTACT: AWARDS@AMUG.COM
<b>REGISTRATION</b> CHAIRPERSON: Leslie Frost, 6K Inc. MEMBERS: Vince Anewenter, MSOE Claire Belson Barnes, Lightforce Heather Natal, GoEngineer Kevin Zaras, Covestro Mark Abshire (Advisor) Jason Dickman (Advisor), ClasslQmfg.com  CONTACT: REGISTRATION@AMUG.COM	<b>SCHOLARSHIP</b> CHAIRPERSON: Rajeev Kulkarni, 3D Systems MEMBERS: Claire Belson Barnes, Lightforce Sean Dobson, Vertex Manufacturing Maddie Frank, Fabric8Labs Bob Markley, ADDman Engineering Kate Schneidau-Ashby, Beehive Industries Brett Charlton (Advisor), BD Jason Dickman (Advisor), ClasslQmfg.com  CONTACT: SCHOLARSHIP@AMUG.COM	<b>SPONSOR &amp; EXHIBITOR</b> CO-CHAIRPERSON: Shannon Van Deren, Layered Manufacturing and Consulting Tim Bell, Meld Manufacturing  CONTACT: DSPEX@AMUG.COM	<b>TECHNICAL COMPETITION</b> CHAIRPERSON: Bonnie Meyer, ASTM International MEMBERS: Jay Beversdorf, Carbon3D Jay Dinsmore, Dinsmore, Inc Ed Graham, ProtoCAM Evan Kirby, Materialise Dylan Schickel, TYC Americas Mark Abshire (Advisor)  CONTACT: TECHCOMP@AMUG.COM	<b>TRACK LEADER</b> CO-CHAIRPERSON: Edward Graham, ProtoCAM Nate Schumacher, Midwest Prototyping MEMBERS: Ted Anderson, GE Additive Bob Diaz, College of Southern Nevada Derek Ellis, Authentise Giles Gaskell, Hexagon Manufacturing Intelligence Callie Higgins, NIST Evan Hochstein, Stratasys Chris Mendoza, AOA Orthodontics Michael Pecota, NAVAIR Vadim Pikhovich, Magma Software Colton Rooney, EMI Corp Tom Sorovetz, T. A. Sorovetz, LLC Scott Volk, Advanced Additive Innovations Alex Roschli, Oak Ridge National Laboratory Steve Szymczek, 3D Printing Mentality Jordan Weston (Advisor), MSOE CONTACT: TRACKLEADER@AMUG.COM

## OPERATIONS COMMITTEES

<b>EXECUTIVE</b> CHAIRPERSON: Mark Abshire MEMBERS: Vince Anewenter, MSOE Leslie Frost, 6K Inc. Shannon Van Deren, Layered Manufacturing and Consulting  CONTACT: PRESIDENT@AMUG.COM	<b>FINANCE</b> CHAIRPERSON: Vince Anewenter, MSOE MEMBERS: Gary Rabinovitz, Reebok Robin Van Bragt, Eagle Design & Technology  CONTACT: TREASURER@AMUG.COM	<b>GOVERNANCE</b> CHAIRPERSON: Leslie Frost, 6K Inc. MEMBERS: Mark Abshire Robin Van Bragt, Eagle Design & Technology Vince Anewenter, MSOE Elizabeth Goode, Goodelink  CONTACT: SECRETARY@AMUG.COM	<b>INTERNATIONAL</b> CHAIRPERSON: Stefan Ritt, Technical University of Luebeck MEMBERS: Dror Danai, Xjet Andrew Graves, Covestro Daniel Landgraf Ulf Lindhe, Oqton Gary Rabinovitz (Advisor), Reebok  CONTACT: INTERNATIONAL@AMUG.COM	<b>MARKETING</b> CHAIRPERSON: Kim Killoran, Stratasys MEMBERS: Kim Brown, ASTM International Todd Grimm, T.A. Grimm & Associates Danny Levy, Influid Energy Tuan TranPham, Azul 3D Laura Turnage, LOCTITE 3D Printing Joseph Workman, Fabric8Labs Jason Dickman (Advisor), ClasslQmfg.com CONTACT: MARKETING@AMUG.COM
<b>MEMBERSHIP</b> CHAIRPERSON: Jason Dickman, ClasslQmfg.com MEMBERS: Robert Chiari, DMG MORI Glen Drebes, Tinker AFB Christopher Prue, Beehive Industries  CONTACT: MEMBERSHIP@AMUG.COM	<b>NEW MEMBER</b> CHAIRPERSON: Derek Ellis, Authentise MEMBERS: Phil Abshire, Baker Hughes (Retired) Rita Bermudez Esquerra, HP Nick Licari, GoEngineer Kate Schneidau-Ashby, Beehive Industries John Sorvillo, Westwood Prep Academy Jason Dickman (Advisor), ClasslQmfg.COM  CONTACT: NEWMEMBER@AMUG.COM	<b>NOMINATING</b> CHAIRPERSON: Carl Dekker, Met-L-Flo MEMBERS: Paul Bates, ASTM International Rey Chu, PADT Jim Harrison, nScript Larry Monahan, BD  CONTACT: NOMCOM@AMUG.COM	<b>PARTNERSHIP</b> CHAIRPERSON: Gary Rabinovitz, Reebok MEMBERS: Todd Grimm, T. A. Grimm & Assocs. Jordan Weston, MSOE Thomas Sorovetz, T.A. Sorovetz LLC  CONTACT: PARTNERS@AMUG.COM	<b>VOLUNTEER</b> CHAIRPERSON: Jamie Cone, BD MEMBERS: Kevin Ayers, 3D Metal Consulting Renee Bourdeau, AMUG Gary Rabinovitz, Reebok Shannon Van Deren, Layered Manufacturing and Consulting  CONTACT: VOLUNTEER@AMUG.COM

# AMUG BOARD OF DIRECTORS

1988  
Chairperson: Dick Aubin, Pratt & Whitney  
Vice-Chairperson: Tom Kerschensteiner, AMP  
Secretary: Dave Flynn, Prototype Express  
Treasurer: Dave Flynn, Prototype Express  
Site Coordinator: Peter Sferro, Ford Motor Company

1989  
Chairperson: Dick Aubin, Pratt & Whitney  
Vice-Chairperson: Tom Kerschensteiner, AMP  
Secretary: Dave Flynn, Prototype Express  
Treasurer: Dave Flynn, Prototype Express  
Site Coordinator: Peter Sferro, Ford Motor Company

1990  
Chairperson: Tom Kerschensteiner, AMP  
Vice-Chairperson: Dave Flynn, Prototype Express  
Secretary: Frost Prioleau, Plynetics  
Treasurer: Frost Prioleau, Plynetics  
Site Coordinator: Jim Southard, Pratt & Whitney  
Past Chairperson: Dick Aubin, Pratt & Whitney

1991  
Chairperson: Dave Flynn, Prototype Express  
Vice-Chairperson: Frost Prioleau, Plynetics  
Secretary: Doug Young, General Motors  
Treasurer: Doug Young, General Motors  
Site Coordinator: Jim Southard, Pratt & Whitney  
Past Chairperson: Tom Kerschensteiner, AMP

1992  
Chairperson: Dave Flynn, Prototype Express  
Vice-Chairperson: Frost Prioleau, Plynetics  
Secretary: Ed Garguilo, duPont  
Treasurer: Ed Garguilo, duPont  
Site Coordinator: Jim Southard, Pratt & Whitney

1993  
Chairperson: Frost Prioleau, Plynetics  
Vice-Chairperson: Ed Garguilo, duPont  
Secretary: Elaine Persall, Clemson University  
Treasurer: Jeff Smith, PCC  
Site Coordinator: Jim Southard, Pratt & Whitney  
Past Chairperson: Dave Flynn, Prototype Express

1994  
Chairperson: Ed Garguilo, Dupont  
Vice-Chairperson: Clint Atwood, Sandia National Laboratories  
Secretary: Elaine Persall, Clemson University  
Treasurer: Al DeWitt, Laserform  
Site Coordinator: Jim Southard, Pratt & Whitney  
Past Chairperson: Frost Prioleau, Plynetics

1995  
Chairperson: Clint Atwood, Sandia National Laboratories  
Vice-Chairperson: Elaine Persall, Clemson University  
Secretary: Beth Israelnaim, Becton Dickinson  
Treasurer: Al DeWitt, Laserform  
Site Coordinator: Tom Sorovetz, Chrysler Corporation  
3D Systems Advisor: Susan Arellano, 3D Systems, Inc.

1996  
Chairperson: Elaine Persall, Clemson University  
Vice-Chairperson: Al DeWitt, Laserform  
Secretary: Beth Israelnaim, Becton Dickinson  
Treasurer: John Thiell, Prototype Express, Inc.  
Site Coordinator: Tom Sorovetz, Chrysler Corporation  
3D Systems Advisor: Susan Arellano, 3D Systems, Inc.  
Past Chairperson: Clint Atwood, Sandia National Laboratories

1997  
Chairperson: John Theill, Plynetics Express  
Vice-Chairperson: Rob Connelly, Fineline Prototyping  
Secretary: Bob Flint, Prototype Express  
Treasurer: Joe Allison, Solid Concepts  
Site Coordinator: Tom Sorovetz, Chrysler Corporation  
3D Systems Advisor: Janine McQuaid, 3D Systems, Inc.  
Past Chairperson: Elaine Persall, Clemson University

1998  
Chairperson: Rob Connelly, Fineline Prototyping  
Vice-Chairperson: Joe Allison, Solid Concepts, Inc.  
Secretary: Steve Deak, Hasbro, Inc.  
Treasurer: Bronson Hokuf, duPont  
Site Coordinator: Tom Sorovetz, Chrysler Corporation  
3D Systems Advisor: Patti Brown, 3D Systems, Inc.  
Past Chairperson: John Theill, Plynetics Express

1999  
Chairperson: Joe Allison, Solid Concepts, Inc.  
Vice-Chairperson: Steve Deak, Hasbro, Inc.  
Secretary: Guy Bourdeau, Beckman Coulter  
Treasurer: Bob Olsen, Molex  
Site Coordinator: Tom Sorovetz, Chrysler Corporation  
3D Systems Advisor: Patti Brown, 3D Systems, Inc.  
Past Chairperson: Rob Connelly, Fineline Prototyping

2000  
Chairperson: Steve Deak, Hasbro, Inc.  
Vice-Chairperson: Jim Harrison, 3Dimensional Engineering  
Secretary: Doug Greenwood, Square D  
Treasurer: Bob Olsen, Molex  
Site Coordinator: Tom Sorovetz, Daimler Chrysler  
3D Systems Advisor: Patti Brown, 3D Systems, Inc.  
Past Chairperson: Joe Allison, Solid Concepts, Inc.

2001  
Chairperson: Jim Harrison, 3Dimensional Engineering  
Vice-Chairperson: Bruce Okkema, Eagle Design and Technology  
Secretary: Derek Ellis, PTE Distribution  
Treasurer: Guy Bourdeau, Beckman Coulter  
Site Coordinator: Tom Sorovetz, Daimler Chrysler  
3D Systems Advisor: Patti Brown, 3D Systems, Inc.  
Past Chairperson: Steve Deak, Hasbro, Inc.

2002  
Chairperson: Bruce Okkema, Eagle Design and Technology  
Vice-Chairperson: Bruce LeMaster, Applied Rapid Technologies  
Secretary: Derek Ellis, PTE Distribution  
Treasurer: Guy Bourdeau, Beckman Coulter  
Site Coordinator: Tom Sorovetz, Daimler Chrysler  
3D Systems Advisor: Patti Brown, 3D Systems, Inc.  
Past Chairperson: Jim Harrison, 3Dimensional Engineering

2003  
Chairperson: Bruce LeMaster, Applied Rapid Technologies  
Vice-Chairperson: Derek Ellis, PTE Distribution  
Secretary: Carl Dekker, Met-L-Flo, Inc.  
Treasurer: Guy Bourdeau, Beckman Coulter  
Site Coordinator: Tom Sorovetz, Daimler Chrysler  
3D Systems Advisor: Patti Brown, 3D Systems, Inc.  
Past Chairperson: Bruce Okkema, Eagle Design and Technology

2004  
Chairperson: Steve Deak, Huntsman Advanced Materials  
Vice-Chairperson: Joe Llamas, DSM Somos  
Secretary: Carl Dekker, Met-L-Flo, Inc.  
Treasurer: Guy Bourdeau, 3DSNASUG, Inc.  
Site Coordinator: Tom Sorovetz, Daimler Chrysler  
3D Systems Advisor: Patti Brown, 3D Systems, Inc.  
Past Chairperson: Bruce LeMaster, Applied Rapid Technologies

2005  
Chairperson: Steve Deak, GE Aviation  
Vice-Chairperson: Bruce LeMaster, Applied Rapid Technologies  
Secretary: Andrew Layton, Georgia Institute of Technology  
Treasurer: Guy Bourdeau, Huntsman Advanced Materials  
Site Coordinator: Tom Sorovetz, Daimler Chrysler  
3D Systems Advisor: Patti Brown, 3D Systems, Inc.

2006  
Chairperson: Bruce LeMaster, Applied Rapid Technologies  
Vice-Chairperson: Bob Zubrickie, Tyco Electronics  
Secretary: Andrew Layton, Georgia Institute of Technology  
Treasurer: Guy Bourdeau, Huntsman Advanced Materials  
Site Coordinator: Tom Sorovetz, Daimler Chrysler  
3D Systems Advisor: Patti Brown, 3D Systems, Inc.  
Past Chairperson: Steve Deak, GE Aviation

2007  
President: Bob Zubrickie, Tyco Electronics  
Vice-President: Sheku Kamara, Milwaukee School of Eng  
Vice President: Brian Bauman, DSM Somos  
Secretary: Brad Palumbo, Phoenix Analysis and Design  
Treasurer: Guy Bourdeau, Huntsman Advanced Materials  
Site Coordinator: Tom Sorovetz, Daimler Chrysler  
Past Chairperson: Bruce LeMaster, Applied Rapid Technologies

2008  
President: Sheku Kamara, Milwaukee School of Eng  
Vice-President: Luis Folgar, Paramount Industries  
Vice President: Brian Bauman, DSM Somos  
Secretary: Brad Palumbo Phoenix Analysis and Design  
Treasurer: Guy Bourdeau, Huntsman Advanced Materials  
Site Coordinator: Tom Sorovetz, Daimler Chrysler  
Past Chairperson: Bob Zubrickie, Tyco Electronics

2009  
President: Brian Bauman, DSM Somos  
Vice-President: Luis Folgar, Paramount Industries  
Vice President: Tom Mueller, Express Pattern  
Secretary: Bob Zubrickie, Tyco Electronics  
Treasurer: Guy Bourdeau, Huntsman Advanced Materials  
Site Coordinator: Tom Sorovetz, Daimler Chrysler  
Past Chairperson: Sheku Kamara, Milwaukee School of Engineering

2010  
President: Luis Folgar, Paramount Industries  
Vice-President: Tim Gornet, University of Louisville  
Vice President: Stewart Davis, CRP Technologies  
Secretary: Bob Zubrickie, Tyco Electronics  
Treasurer: Guy Bourdeau, Huntsman Advanced Materials  
Site Coordinator: Tom Sorovetz, Daimler Chrysler  
Past Chairperson: Brian Bauman, DSM Somos

2011  
President: Tim Gornet, University of Louisville  
Vice-President: Mark Abshire, DSM Somos  
Vice President: Gary Rabinovitz, Reebok International  
Secretary: Scott Schermer, SC Johnson  
Treasurer: Guy Bourdeau, Huntsman Advanced Materials  
Site Coordinator: Tom Sorovetz, Chrysler Group, LLC  
Past Chairperson: Luis Folgar, Paramount Industries

2012  
President: Gary Rabinovitz, Reebok International  
Vice-President: Mark Abshire, DSM Somos  
Vice President: Scott Schermer, SC Johnson  
Secretary: Bret Bordner, Laser Reproductions  
Treasurer: Guy Bourdeau, 3D Systems/ Vince Anewenter, MSOE  
Event Manager: Tom Sorovetz, Chrysler Group, LLC  
Past President: Tim Gornet, University of Louisville  
AM Industry Advisor: Todd Grimm, T.A. Grimm & Associates

2013  
President: Gary Rabinovitz, Reebok International  
Vice-President: Bret Bordner, Laser Reproductions  
Vice President: Mark Barfoot, Christie Digital  
Secretary: Mark Abshire, DSM Somos (replacement)  
Treasurer: Vince Anewenter, MSOE  
Event Manager: Tom Sorovetz, Chrysler Group, LLC  
Past President: Tim Gornet, University of Louisville  
AM Industry Advisor: Todd Grimm, T.A. Grimm & Associates



2014

President: Bret Bordner, Laser Reproductions  
Vice-President: Mark Barfoot, Hyphen  
Vice President: Derek Ellis, CATI  
Secretary: Kim Killoran, Stratasys  
Treasurer: Vince Anewenter, MSOE  
Event Manager: Thomas Sorovetz, Chrysler Group, LLC  
Past President: Gary Rabinovitz, Reebok Advanced Concepts  
AM Advisor: Mark Abshire, Somos Materials by DSM  
AM Industry Advisor: Todd Grimm, T.A. Grimm & Associates

2015

President: Mark Barfoot, Hyphen  
Past President: Bret Bordner (formerly Laser Reproductions, purchased by 3D Systems)  
Vice-President: Steve Deak, GE  
Vice President: Dana Foster, rp+m  
Secretary: Kim Killoran, Stratasys  
Treasurer: Vince Anewenter, MSOE  
Event Manager: Thomas Sorovetz, Fiat Chrysler Automobiles (FCA)  
AM Industry Advisor: T.A. Grimm & Associates  
Advisor: Gary Rabinovitz, Reebok

2016

President: Mark Barfoot, Hyphen  
Past President: Bret Bordner (formerly Laser Reproductions, purchased by 3D Systems)  
Chairman: Gary Rabinovitz, Reebok International  
Treasurer: Vince Anewenter, MSOE  
Secretary: Kim Killoran, Stratasys  
Vice President: Steve Deak, GE  
Vice President: Dana McCallum, Carbon  
Event Manager: Thomas Sorovetz, FCA US LLC  
AM Industry Advisor: Todd Grimm, T.A. Grimm & Associates

2017

President: Steve Deak, GE Aviation  
Past President: Mark Barfoot, University of Waterloo  
Chairman: Gary Rabinovitz, Reebok  
Treasurer: Vince Anewenter, MSOE  
Secretary: Kim Killoran, Stratasys  
Vice President: Paul Bates, UL  
Vice President: Dana McCallum, Carbon  
Event Manager: Thomas Sorovetz, FCA US LLC  
AM Industry Advisor: Todd Grimm, T.A. Grimm & Associates

2018

President: Paul Bates, UL  
Treasurer: Vince Anewenter, MSOE  
Secretary: Kim Killoran, Stratasys  
Vice President: Carl Dekker, Met-L-Flo  
Vice President: Jamie Cone, BD  
Event Manager: Thomas Sorovetz, FCA US LLC  
AM Industry Advisor: Todd Grimm, T.A. Grimm & Associates  
Chairman: Gary Rabinovitz, Reebok  
Past President: Mark Barfoot, Cimatrix Solutions

2019

President: Paul Bates, UL  
Treasurer: Vince Anewenter, MSOE  
Secretary: Leslie Frost, GE Additive  
Vice President: Carl Dekker, Met-L-Flo  
Vice President: Jamie Cone, BD  
Event Manager: Thomas Sorovetz, FCA US LLC  
AM Industry Advisor: Todd Grimm, T.A. Grimm & Associates  
Chairman: Gary Rabinovitz, Reebok  
Past President: Mark Barfoot, EVI

2020 (term: July 1, 2019 – June 30, 2021)

CONFERENCE POSTPONED, TERM EXTENDED THROUGH 2021

President: Carl Dekker, Met-L-Flo  
Treasurer: Vince Anewenter, MSOE  
Secretary: Leslie Frost, GE Additive  
Vice President: Jamie Cone, BD  
Vice President: Andrew Allshorn, AT 3-D Squared  
Event Manager: Thomas Sorovetz, Stellanits  
AM Industry Advisor: Todd Grimm, T.A. Grimm & Associates  
Chairman: Gary Rabinovitz, Reebok  
Past President: Paul Bates, UL

2021 (term: July 1, 2021 – June 30, 2022)

SEE AMUG BYLAWS FOR BOARD OF DIRECTORS STRUCTURE CHANGE

President: Carl Dekker, Met-L-Flo  
Vice President: Andrew Allshorn, AT 3-D Squared  
Secretary: Leslie Frost, GE Additive  
Treasurer: Vince Anewenter, MSOE  
Director-at Large: Gary Rabinovitz, Reebok  
Director, Business Development: Tim Bell, Siemens Digital Industries USA  
Director, Conference and Education: Jordan Weston, MSOE  
Director, Event and Hospitality: Thomas Sorovetz, Casting Engineer Emeritus  
Director, Membership: Bill Macy, Titan Robotics  
Past President: Paul Bates, UL

2022 (term: July 1, 2022 – June 30, 2023)

SEE AMUG BYLAWS FOR BOARD OF DIRECTORS STRUCTURE CHANGE

President: Mark Abshire  
Vice President: Shannon Van Deren, VulcanForms  
Secretary: Leslie Frost, 6K Inc.  
Treasurer: Vince Anewenter, MSOE  
Director-at Large: Gary Rabinovitz, Reebok International  
Director, Education & Conference: Jordan Weston, MSOE  
Director, Event & Hospitality: Thomas Sorovetz, T.A. Sorovetz, LLC  
Director, Membership: Jason Dickman, ClassIQmfg.com  
Director, Sponsors & Exhibitors: Tim Bell, Meld Manufacturing  
Immediate Past President: Carl Dekker, Met-L-Flo

**Sunday, March 19 starting at 10:00am through Tuesday, March 21 closing at 9:00pm**

(times are based on conference location)

# 2023 AMUG BOARD OF DIRECTORS ELECTIONS

2023-2025 Board of Directors Elections for:

- Secretary
- Director, Education & Conference
- Director, Event & Hospitality
- Director, Sponsors & Exhibitors

Voting takes place via the AMUG Mobile App. Additional details will be provided to registered AMUG members through the AMUG Online Planner and Mobile App.

Election Results will be announced at the AMUG Business Meeting  
Wednesday, March 22 at 11:00am  
International Ballroom, 2nd Floor

# AMUG AWARDS AND RECOGNITIONS

At AMUG we consider ourselves very fortunate. There are many passionate AMUG members and industry associates that contribute to the success of pulling off a large conference managed by all volunteers. We would like to take a moment to say thank you to everyone that participated in the 2023 AMUG Education & Training Conference. We truly appreciate your continued support and dedication.

## AMUG AWARDS

AMUG is an all-volunteer organization that recognizes an individuals contribution to the Users Group and the AM community.

**Lifetime Achievement Award** - AMUG Lifetime Achievement Award is presented to individuals with more than 20 years of service to AMUG and is at the discretion of the Executive Committee.

**President's Award** - President's Award is in recognition of exemplary vision, leadership, and tireless years of service for the advancement of the Additive Manufacturing Users Group and is at the President's discretion.

**DINO (Distinguished INnovator Operator Award)** – The DINO is presented to members with extraordinary AM expertise and actively shares that knowledge and contributes to AMUG members and the industry.

**Innovators Showcase** - This honor recognizes those that have had a significant impact on the additive manufacturing industry over an extended period of time.

**Scholarship Award** – These awards honor the memory of two long-time and avid supporters of AMUG. The Guy E. Bourdeau Scholarship is for Students, and the Randy Stevens Scholarship is for Teachers/Professors.

**Technical Competition Awards** – Advanced Concepts, Advanced Finishing, and Members Choice Award, members and peers awarded for their unique applications as well as their finishing capabilities of additive manufacturing methods.

## PRESIDENT'S AWARD

"In recognition of exemplary vision, leadership, and tireless years of service for the advancement of the Additive Manufacturing Users Group."

**Service for the advancement of the Users Group.** This is the cornerstone of the President's Award. However, this can hardly begin to describe the devotion and commitment of the person honored with the President's Award.

**Perseverance:** Recipients of this award have served when called upon, they step up to ensure whatever needs to be accomplished is done and without reservation.

**Passion:** The President's award recipient goes above and beyond what is expected. Not because it's "a job", but because the recipient truly loves the AMUG organization and industry.

**Selflessness:** Time and time again, the President's award recipient has put personal gain and recognition aside to push the Users Group to a higher level.

**Professionalism:** The President's Award recipient epitomizes professionalism. In all things, this Presidents' Award recipient holds high standards in every task and always brings great ideas to the table on a consistent basis.

And maybe most important, **Friendship.** The Users Group is deeply rooted in friendship. Whether our businesses are competitors or not, we always find a way to make the Users Group a time to catch up with old friends while expanding our circle with new friends.

### AMUG PRESIDENT'S AWARD RECIPIENTS

2000	Thomas A. Sorovetz	2014	Gary Rabinovitz
2006	Patti Brown	2016	Mark Abshire
2007	Guy E. Bourdeau	2019	Elizabeth Goode
2010	Robert Zubrickie	2021	Vince Anewenter
2013	Timothy Gornet	2021	Terry Hoppe - posthumously

## LIFETIME ACHIEVEMENT AWARD

AMUG Lifetime Achievement Award is presented to individuals with more than 20 years of service to AMUG.
















### AMUG LIFETIME ACHIEVEMENT AWARD RECIPIENTS

2018	Thomas A. Sorovetz - 25 years of service
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# THANK YOU

At AMUG we consider ourselves very fortunate. There are so many passionate AMUG members and industry associates that contribute to the success of pulling off a large conference managed by all volunteers.

We would like to take a moment to say thank you to everyone that participated in the 2023 AMUG Education & Training Conference. We truly appreciate your continued support and dedication.

		
PROGRAM PRINTING	ENTERTAINMENT	PLATING OF DINOS
		
PRINTING OF SL DINOS	STRATEGIC CONSULTING PROGRAM PRODUCTION	PRINTING OF SPONSOR BANNERS IN GENERAL SESSION AREA
		
EVENT PHOTOGRAPHY	AWARDS AND CLOTHING	EVENT PHOTOGRAPHY AND VIDEO
		
LEAD RETRIEVAL	PRINTING OF DINO PLATES	EMCEE AND PUBLIC RELATIONS
		
PRINTING OF METAL DINOS	OFFICIAL SERVICE PROVIDER	EVENT AND HOSPITALITY COORDINATION

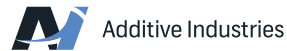
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AM Chronicle

ASTM Additive Manufacturing  
Center of Excellence

Bodycote

BuildParts by CIDEAS, Inc

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Element Materials Technology

Equispheres Inc.

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EWI

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SME

The TCT Group

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TRUMPF Inc.

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Velo3D

Visitech Americas

VoxelMatters

WTWH Media

ZEISS Industrial Quality Solutions

## SILVER SPONSOR

Lithoz America, LLC

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voxeljet America Inc

