

EVENT Preview

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Where Innovation Meets Opportunities

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 **FABTECH**

NOVEMBER 8-10, 2022

Atlanta | Georgia World Congress Center

North America's
Largest Metal Forming,
Fabricating, Welding
and Finishing Event

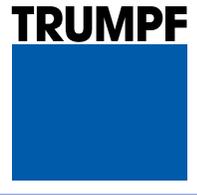
Event Partners



Platinum Sponsors



November 8-10, 2022 / Booths B6309 and C10973



Your challenges, our solutions.



Visit TRUMPF at FABTECH

Fabricators today are facing more challenges than ever. Lower order quantities, shorter lead times, higher material costs and a shortage of skilled labor combine to make your challenges seem overwhelming. TRUMPF understands those challenges and provides innovative and productive solutions for the entire spectrum of sheet metal fabricators. Whether your needs are stand-alone machines or smart factory solutions of any scale, TRUMPF has the machines, software, experience and manpower to determine, produce and support the best solution to fit your needs. We invite you to visit our FABTECH booths B6309 and C10973 to see a sampling of our products, speak with our experts and develop a roadmap to solving your challenges today.

www.trumpf.com



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LEARN

Gain valuable, can't miss insights from best-in-class conference programs that target technical, operational, and managerial segments.

CONNECT

Visionary keynotes and expert panels allow attendees to network, exchange best practices, and learn about the latest industry advancements.

COMPARE

Discover advanced technologies that improve quality and productivity and compare innovative solutions from exhibitors side-by-side.

Event Preview Volume 10, Issue 1, August 2022

The Event Preview is published annually on behalf of FABTECH[®] by The Fabricators & Manufacturers Association, International[®] 2135 Point Blvd | Elgin, IL 60123 USA 815-399-8700 | fmanet.org | fabtechexpo.com

GENERAL INFORMATION

FABTECH 2022 FEATURES

- 1,200+ world-class exhibits
- 150 conference programs
- Live product demonstrations
- Expert-led panel discussions

INNOVATE | CREATE | FABRICATE

Network and collaborate with the brightest minds in manufacturing and take a forward-thinking look into the latest trends and innovations—only at FABTECH 2022.

REGISTER TODAY at fabtechexpo.com

TECHNOLOGY ON DISPLAY

Additive Mfg/3D Printing	Inspection & Testing	Saws
Arc Welding	Job Shop/Contract Mfg	Software, Machine Controls
Assembly	Lasers	Stamping
Automation	Lubrication	Thermal Spraying
Bending & Forming	Maintenance & Repair	Tool & Die
Brazing & Soldering	Material Handling	Tooling
Business Services	Metal Suppliers	Tube & Pipe Fabricating or Welding
Coil Processing	Plate & Structural Fabricating	Tube & Pipe Producing
Cutting	Press Brakes	Waterjet
Fastening & Joining	Punching	Welding Consumables
Finishing/Paint & Powder Coating	Resistance Welding	Welding Machines
Finishing/Plating	Robotics	
Gases & Gas Equipment	Roll Forming	
Hydroforming	Safety & Environmental	

FABTECH SHOW HOURS

Tuesday, November 8 10 AM – 6 PM
Wednesday, November 9 9 AM – 5 PM
Thursday, November 10 9 AM – 4 PM



GEORGIA WORLD CONGRESS CENTER

285 Andrew Young International Blvd NW | Atlanta, GA 30313

BUILDING C

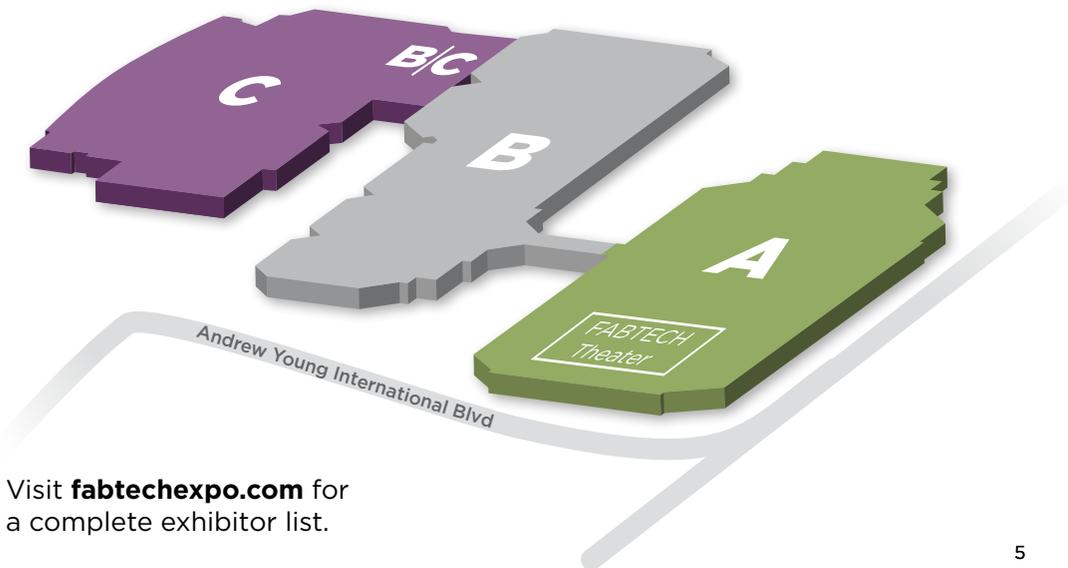
Welding
Welding Automation
Tube/Pipe
Robotics and
Industrial Automation

BUILDING B

Forming & Fabricating
Finishing
METALFORM
3D/Additive Manufacturing

BUILDING A

Forming & Fabricating
Welding
Robotics and
Industrial Automation



Visit fabtechexpo.com for a complete exhibitor list.

TUESDAY, NOVEMBER 8**KEYNOTE PRESENTATION
8:30 AM – 10:00 AM****FABx TECH TALKS**

Our line-up of experts will share insights on emerging trends and innovations that are changing the way businesses operate. As manufacturing processes are evolving at a rapid pace, it has become crucial for fabricators to leverage these innovations to stay competitive. Special appearance from **Bill Carlton**, owner/mastermind of **Ekstensive Metal Works** featured on the popular reality-TV show Texas Metal.

**FABx SPEAKERS:**

- Gillen Young**, Chief Architect for IIOT Solutions, AT&T
Richard Boyd, CEO, Tanjo AI
Bryce Austin, CEO, TCE Strategy
Bill Carlton, Ekstensive Metal Works Owner, Texas Metal Reality-TV

**LEADERSHIP EXCHANGE PANEL
12:30 PM – 1:30 PM****ADVANCED MANUFACTURING
INNOVATION & OPPORTUNITIES**

Innovation in manufacturing can take many forms including new technology, changes in the supply chain, and product and process improvements. Innovation offers many important advantages to businesses and is often key to outperforming the competition. Our leading experts will share insights on innovative and disruptive technology trends manufacturers can use to create cutting-edge products.

MODERATOR: Dave O’Neil, Vice President, SME Media

PANELISTS:

- Gillen Young**, Chief Architect for IIOT Solutions, AT&T
Richard Boyd, CEO, Tanjo AI
Bryce Austin, CEO, TCE Strategy

WEDNESDAY, NOVEMBER 9**7:30 AM – 9:30 AM****WOMEN OF FABTECH BREAKFAST**

Sponsored By:



Learn about manufacturing trends, marketing strategies, and more through real-world examples shared by women leaders in manufacturing. Session includes a keynote speaker, expert panel, networking, and breakfast. **Price: \$35**

**KEYNOTE PRESENTATION
9:00 AM – 10:00 AM**

BRAD KESELOWSKI,
**Owner Keselowski
 Advanced
 Manufacturing,
 Championship
 Driver, Co-owner
 RFK Racing**

Winning the Manufacturing Race

Keselowski is fanatical about manufacturing and technology. During his keynote, he will highlight his ownership and operation of Keselowski Advanced Manufacturing, as well as his unique standing as a champion driver in the NASCAR Series. That understanding, coupled with his passion for technological innovations, led him to build KAM. He will share his experiences where technology, like AM, can help companies win the race and its impact not only within automotive, but across multiple sectors.

LEADERSHIP EXCHANGE PANEL 12:30 PM – 1:30 PM

PLANNING FOR THE FUTURE OF WORK: HOW NEW TECHNOLOGY IS RE-DEFINING THE WORKPLACE

Sponsored By: **TRAVELERS** 

With the silver tsunami of thousands of boomers retiring out of manufacturing today and the lack of young people entering the manufacturing workforce, manufacturers are scrambling to fill production demands, keep equipment running and digitalize their organizations. In this panel discussion with four industry experts and enterprise talent leaders, we bridge the gap between technology and vision.

MODERATOR: **Lisa Ryan**, Founder and Chief Appreciation Strategist, Grategy

PANELISTS:

Brian Gerritsen, AVP Product and Manufacturing Practice Leader, Travelers (Talent & Upskill)

Jacob Hall, Social Influencer, Manufacturing Millennial

Will Heally III, Global Business Strategy Manager - Balluff Worldwide

THURSDAY, NOVEMBER 10

KEYNOTE PRESENTATION 9:00 AM – 10:00 AM



JAKE WOOD,
Executive
Chairman of Team
Rubicon and
Founder and CEO
of Groundswell

The One & The Nine

For every 100 people in a typical organization or on your team, there are 10 people who shouldn't even be there, 80 who at their best have a neutral impact, 9 who perform exceptionally,

and one who is a true leader capable of taking command and creating a winning team or culture. This reality is forcing organizations to rethink what they know about leadership, change management and risk. Using his own remarkable journey as an athlete, Marine Scout Sniper, and co-founder of Team Rubicon, Jake shows how you can find and build the team needed to win life's battles and become the "one" others look to.

LEADERSHIP EXCHANGE PANEL 12:30 PM – 1:30 PM

CONSIDERATIONS TO IMPROVE YOUR CYBER SECURITY STRATEGY

Cyberattacks and data breaches are growing with greater sophistication. It is only a matter of time before your organization is subject to a serious cyber incident. Companies and organizations have been harmed by theft of intellectual property, trade secrets, and other highly valuable information. Learn how to understand the cyber security risk in relation to your organization, integrate across personnel, technical security, information assurance and physical security, and establish protective monitoring to prevent and deter the 'insider' threat.

MODERATOR: **Vincent W. Howell Sr.**, Corning Inc. (retired)

PANELISTS:

Jason Miller, Founder and CEO, Bitlyft

Jay Korpi, Principal Advisor, NextLink Labs

Jeremy Dodson, CISO, NextLink Labs

Mark Haupt, IT Manager, Wilson Tool International

ABOUT THE CONFERENCE PROGRAM

The Fabricators & Manufacturers Association, Int'l (FMA), SME, Precision Metalforming Association (PMA), and Chemical Coaters Association International (CCAI) co-sponsor the conference sessions on 3D/additive manufacturing, automation, cutting, finishing, forming and fabricating, job shop, laser, lean, management, marketing and sales, robotics, smart manufacturing, stamping, tube and pipe, and workforce development.

The American Welding Society (AWS) presents a comprehensive lineup of welding education. Led by the industry's top professionals, programs focus on best practices and new commercial developments in welding.

EXPERIENCE LEVELS

The Conference-at-a-Glance on the following pages provides a quick reference to all the conference programs offered at FABTECH 2022. Note that you can use the following key to find the programs that meet your needs.

-  **Basic** — Recommended for the attendee who is new to the industry or needs a refresher on the topic.
-  **Intermediate** — Designed for the attendee who already has a basic understanding of the subject matter.
-  **Advanced** — For the attendee with several years of experience who is seeking more in-depth information.

CONTINUING EDUCATION CREDITS

Individuals who attend AWS education programs are awarded 1 PDH (Professional Development Hour) for each hour of program attendance. Individuals seeking FMA Recertification Credits will be awarded 2 credits for each conference session attended (forming and fabricating, cutting, or finishing tracks) plus an additional 2 credits for attending the show. Individuals who attend SME conference programs may be eligible to receive 1 credit per hour attended toward their SME-managed recertification requirements.

MEMBERSHIP INFORMATION

Discounted rates for members are available on conference programs. Interested in becoming a member of AWS, FMA, SME, PMA, or CCAI? Find details on each of the event partner associations and membership benefits by visiting their websites today!



aws.org



fmanet.org



sme.org



pma.org



ccaiweb.com

TECHNOLOGY	8:00 AM – 9:30 AM	10:00 AM – 11:30 AM	12:00 PM – 1:30 PM	2:00 PM – 3:30 PM
3D/ADDITIVE MFG	NEW! ■ F10: Additive Manufacturing Outlook for Industrial Applications	NEW! ■ F11: How 3D Printing Will Democratize Manufacturing	■ F12: Additive Manufacturing Safety & Power Quality Solutions	■ F13: Business Considerations for 3D Additive Technology
AUTOMATION	NEW! ■ F20: Increase Productivity with Software Automation	NEW! ■ F21: Enabling Digital Transformation & Connectivity Solutions	NEW! ■ F22: Embracing Automation Options and Best Practices	■ F23: What You Need to Understand Before Thinking About Running Your Shop Lights-Out
CUTTING		NEW! ■ F31: The Most Versatile Machine Tool and Considerations for Successful Waterjet Machining		
FINISHING		■ C11: Powder Coating: Recipes for Success		NEW! ■ C13: Pretreatment in the Real World
		■ C21: ECOAT 101 - Basics of Electrocoating		■ C23: Maximizing Your Finishing Line - Cradle to Grave
		NEW! ■ C31: Zero to Smart Factory-Building Sustainability		NEW! ■ C33: Automate Your Way - Options for Your Powder Coating Line
FORMING & FABRICATING	NEW! ■ F40: Advanced Brake Press Technologies	■ F41: Machine Safeguarding	■ F42: Roll Forming Basics	NEW! ■ F43: Coil-Fed Laser Blanking
JOB SHOP	■ F50: Job Costing and Estimating in a Changing Economy	NEW! ■ F51: Balancing Your Shops Process & Implementing ERP Solutions the Right Way	■ F52: How to Build a Better Supply Chain for Your Business	NEW! ■ F53: Holding People Accountable Through Effective Corrective Action in Today's Tight Labor Market
LASER	NEW! ■ F30: How to be Successful in Your Laser Joining Applications		NEW! ■ F32: Improve Laser Quality, Inspection & Applications in Joining Processes	NEW! ■ F33: Digital Laser & 3D Laser Cutting for Next Generation or Custom Robotic
LEAN	NEW! ■ F60: Leadership's Role in Leading Lean Teams	■ F61: Value Stream Mapping – Understanding the Whole: From Sales to Shop to Customer	■ F62: A3 Thinking - Developing People & Solving Problems	NEW! ■ F63: Lean Reflections and Projections
MANAGEMENT	NEW! ■ F70: When Worlds Collide: Management and Communication in a Multinational Workforce	NEW! ■ F71: Surviving the Aftermath of the Great Resignation	NEW! ■ F72: Outlook for Advanced Manufacturing: Accelerate Change and Benchmark Your Organization	■ F73: Gratitude Strategies to Create a Company Culture That Rocks
MARKETING & SALES	■ F80: The State of Sales & Marketing: Attracting Tomorrow's Buyers	NEW! ■ F81: Make the Most of Your Marketing without a Big Team	■ F82: Manufacturing the Sale & Applying Measurable Processes	NEW! ■ F83: Uncertain Economy & Supply Chain Growth Strategies to Gain Market Share
ROBOTICS	■ WS01: Getting Started in Industrial Robotics Workshop: What You Need to Know (8:00 AM - 12:00 PM)		NEW! ■ F92: Cost-Effective Robots for Any Type of Production, Even One-Offs-with Case Studies	NEW! ■ F93: Robotic Operating System, Integration and Programming
SMART MFG	■ F100: Digital Transformation Buzzwords & Playbook	NEW! ■ F111: Digital Transformation on the Shop Floor: Do More With Less	■ WS02: Smart Manufacturing Bootcamp (12:00-5:00 PM)	
STAMPING	NEW! ■ S10: Metalforming Industry Outlook – The Good. The Bad. The Opportunity.	■ S11: Metal Stamping Press Maintenance Best Practices to Maximize Performance	NEW! ■ S12: Dealing with Off-Center Loading in Stamping Operations	NEW! ■ S13: Maximize Your Metalworking Fluids - Cost, Safety, Performance and Re-use
TUBE & PIPE	NEW! ■ F400: What's Happening in Tube Bending?	■ F411: Modern Tube Bending and Lubrication	NEW! ■ F412: Custom Tube Bending and Laser Cutting	NEW! ■ F413: Specialty Tube Welding
WORKFORCE DEVELOPMENT	NEW! ■ F200: Technology Investment Choices: The Impact of Hiring & Retention	■ F211: Mentoring & Creating a Successful Career Pathing Program	■ F212: Motivating & Building an Effective Workforce in 2022	NEW! ■ F213: Rockstar Recruiting & Becoming the Employer of Choice

WELDING	W1: AWS/Weld-Ed Educators Conference – Robots And Automation in Welding Education	8:30 AM – 4:30 PM
	W2: Welding Productivity Tracks	9:00 AM – 4:30 PM
	W3: Diverse Roles and Needs within the Welding Industry Tracks	8:00 AM – 4:00 PM
	W10: Professional Program - Day 1	8:00 AM – 4:00 PM

Detailed Conference Program session descriptions, speakers, pricing, room locations and more can be found at fabcexpo.com/conference.

■ Basic ■ Intermediate ■ Advanced

TECHNOLOGY	8:00 AM – 9:30 AM	10:00 AM – 11:30 AM	12:00 PM – 1:30 PM	2:00 PM – 3:30 PM
3D/ADDITIVE MFG	■ F14: Fundamentals of AM Technologies and the 7 Processes for Fabrication	NEW! ■ F15: Significant Product Case Studies in Additive Manufacturing	NEW! ■ F16: 3D Additive Robotic and Laser Solutions for Large Parts	NEW! ■ F17: Design Tools for Additive Manufacturing
AUTOMATION	NEW! ■ F24: Automation Basics and Integration for Fabrication Shops	NEW! ■ F25: How is AI Changing the Future of Robotics?	NEW! ■ F26: Automation E-Commerce Tools & Supply Chain Collaboration	NEW! ■ F27: Increase Business Intelligence & Labor Shortages with Automation
CUTTING	NEW! ■ F34: The Benefits of Cutting with Oxy-Fuel, Nitrogen & Assist Gas Technology	■ F35: Comparative Cutting: Which is Right for You?		
FINISHING	NEW! ■ C14: New Technologies I	■ C15: I Want To ECOAT, What Now?		NEW! ■ C17: New Technologies II
	NEW! ■ C24: Batch vs. Automated Finishing Systems - Which is Right for You?	■ C25: Improving Powder Coating Processes		NEW! ■ C27: Alternative Pretreatment Strategies
	NEW! ■ C34: Advances in Plating and Process Automation	NEW! ■ C35: In the House: Bringing Outside Services Inside		■ C37: IR Curing Technologies and their Applications
FORMING & FABRICATING	■ F44: Roll Forming: In-line Punching, Cutoff Dies and Press Tonnage	■ F45: Coil Processing: Leveling, Deburring, Blanking, and Storing	■ F46: Roll Forming: Advanced Techniques and Design	NEW! ■ F47: Roll Forming: Materials and Troubleshooting
JOB SHOP	NEW! ■ F54: Risk Radar & Developing and Testing Incident Response Plans	■ F55: Improve Production Outcome & Create Sustainability in New Product Development	NEW! ■ F56: The Secret to Stress-Free Sourcing & Overcoming Supply Chain Problems	■ F57: Do You Know How Much Money You're Losing Due to Equipment Breakdown?
LASER			NEW! ■ WS03: Fabricators Laser Application Workshop (12:00–4:30 PM)	
LEAN	■ F64: Breaking Boundaries for Operational Excellence	NEW! ■ F65: Developing Lean Talent in 2022	■ F66: Advance Production Floor Communication & Staffing to Strengthen Standard Work	NEW! ■ F67: The Connective Tissues of the Lean Systems Components
MANAGEMENT	NEW! ■ F74: Traits of High Impact Leaders	NEW! ■ F75: Black Swans in Abundance; Prepare for Future Disruptions	■ F76: Leading Yourself and Others Through Change	■ F77: Developing as a Leader in the 21st Century
MARKETING & SALES	■ F84: Grow Your Business By Adopting the Right Habits	■ F85: Management & Best Practices for the Sales and Marketing Functions	NEW! ■ F86: Manufacturing Marketing Automation: How to Create, Implement, and Analyze High-Performing Strategies	NEW! ■ F87: Technical Writing for Inbound & Marketing Friendly Content
ROBOTICS	NEW! ■ F94: Analyzing Robotic Investment for Small to Mid-Size Fabricators	NEW! ■ F95: Using Robotics to Build Operational Resilience & Collaboration	NEW! ■ F96: Evolution of Robot Programming Possibilities	NEW! ■ F97: Robotic Solutions for Weld or Joining Technologies
SMART MFG	NEW! ■ F114: Surviving Technology and Labor Challenges in Digital Manufacturing	NEW! ■ F115: Condition & Production Monitoring in Smart Manufacturing	NEW! ■ F116: Using Artificial Intelligence to Drive Value in Manufacturing	■ F117: IIoT & Agile Development for High Mix Low Volume Environments
STAMPING	■ S14: Problem Solving Methodologies and Tips for Progressive Dies	NEW! ■ S15: Sensors for Die Protection - Make Die Crashes a Thing of the Past	■ S16: Automatic In-Die Part Quality Monitoring & Tool Adjustments	■ S17: Creating Operational Excellence in the Press Shop through Automation
TUBE & PIPE		NEW! ■ F415: Specialty Tube & Hot Rolling Processes		■ F417: Advanced Solutions for Tube and Pipe
WORKFORCE DEVELOPMENT	NEW! ■ F214: Welcome Onboard: Simple Strategies to Keep Your New Hires from Jumping Ship	■ F215: Attracting, Leading & Retaining Talent, Millennials & Gen Z in the Workforce	■ F216: Creating a Culture of Accountability for Organizational Success	NEW! ■ F217: Creating Mentors for our Future & The Value of Apprenticeships

WELDING	■ W5: Practical Welding Metallurgy	8:00 AM – 4:00 PM
	■ W6: Pricing For Profitability Of Welded Structures	8:00 AM – 4:00 PM
	■ W7: Welding Performance Qualifications	10:00 AM – 12:00 PM
	■ W8: Secrets To A Successful PQR	1:00 PM – 3:00 PM
	■ W10: Professional Program - Day 2	9:00 AM – 5:00 PM

Detailed Conference Program session descriptions, speakers, pricing, room locations and more can be found at fabcstechexpo.com/conference.

■ Basic ■ Intermediate ■ Advanced

TECHNOLOGY	8:00 AM – 9:30 AM	10:00 AM – 11:30 AM	12:00 PM – 1:30 PM	2:00 PM – 3:30 PM
AUTOMATION	NEW! ■ F28: Steps and Lessons Learned in the Automating Journey	NEW! ■ F29: Low-Cost Automation Breaks Down Barriers to Entry	NEW! ■ F220: Automation in Simulation & Imaging for Joining Process	
CUTTING	NEW! ■ F38: Overcome Labor Shortages in the Cutting Industry & Keep Your Equipment Running			
FINISHING	■ C18: See It, Touch It, Fix It	NEW! ■ C19: Using Industry 4.0 Data to Improve Your Quality and Workforce		
	NEW! ■ C28: How to Choose the Best Coating System			
	NEW! ■ C38: Improving Processes in Your Liquid Paint Booth			
FORMING & FABRICATING	■ F48: Roll Forming Justification and Welding Profiles	NEW! ■ F49: Combustible Dust Safety for Metalworking and Fabrication		
JOB SHOP	■ F58: Business Owner Exit Options in Today's Market	■ F59: How To Use the R&D Tax Credit to Lower Your Tax Liabilities and Build a Competitive Advantage	■ F510: Innovative Manufacturers: to Patent or Not to Patent?	■ F511: Getting the Most Value Out of Selling Your Business
LASER		NEW! ■ F39: Introduction to New Laser Applications		
LEAN	NEW! ■ F68: Lean Tools for Industry 4.0 Continuous Improvement	NEW! ■ F69: Lean Tools & Concepts for Just in Time Implementation	NEW! ■ F610: Lean Tools for Implementation & Best Practices to Improve Job Shop	
MANAGEMENT	■ F78: Strategic Planning for Growth & Creating a "Gotta Have" Company	■ F79: Create Cultures of Innovation and Accountability	NEW! ■ F710: Using Emotional Intelligence to Transform You & Your Business	
MARKETING & SALES	■ F88: PAIN vs. GAIN - What Best Motivates Buyers to Buy?	■ F89: Getting the Most of Your Website & Digital Ads	NEW! ■ F810: It's Just Business: International Differences in Sales Expectations	NEW! ■ F811: Building, Selecting & Developing the "Right" Sales Organization in Today's "Digital" Marketplace
SMART MFG	NEW! ■ F118: Protect Your Production Line: How to Keep a Cyber Attack from Bringing Business to a Halt	NEW! ■ F119: Digital Supply Networks & Steps for Securing Your Shop Against Cybersecurity Threats	NEW! ■ F110: Using Software & Hardware to Empower Smarter Decisions for Fabricators	
STAMPING	NEW! ■ S18: Lightweight Sheet Metal for the Automotive Industry	■ S19: The Impact of Sheet Metal Types on Die Maintenance		
WORKFORCE DEVELOPMENT	NEW! ■ F218: Prioritize Your People: Building a Culture to Help You Grow, Maximize Profits	■ F219: READ (HIDDEN) EMOTIONS: Know What Others are Feeling	NEW! ■ F210: Women Who Lead: Activating the Power Within	
WELDING	■ W9: Stainless Steel Fabrications Do's & Don'ts, and Why Not(s)			8:00 AM – 3:00 PM

EXPERIENCE LEVELS

Use this key along with the Schedule-at-a-Glance to find the education level that meets your needs.

- **Basic** – Recommended for the attendee who is new to the industry or needs a refresher on the topic.
- **Intermediate** – Designed for the attendee who already has a basic understanding of the subject matter.
- **Advanced** – For the attendee with several years of experience who is seeking more in-depth information.

2022 PRICING INFORMATION

EXHIBITS ONLY:

Registration is FREE through November 4.

Beginning November 5, the cost to attend the exhibits is \$50. AWS, FMA, SME, PMA, and CCAI members may always attend the exhibits for FREE with proof of membership.

Conference Tracks

- 3D/Additive Manufacturing
- Automation
- Cutting
- Laser
- Finishing
- Forming & Fabricating
- Job Shop
- Lean
- Management
- Marketing & Sales
- Robotics
- Smart Manufacturing
- Stamping
- Tube & Pipe
- Workforce Development

FABTECH SESSIONS	Early Bird Rates thru Sept 30		Regular Rates after Sept 30	
PACKAGES (Buy More and SAVE)	Member	Non-member	Member	Non-member
1 Session	\$85	\$105	\$165	\$185
2 Sessions	\$135	\$160	\$220	\$245
3 Sessions	\$195	\$225	\$285	\$315
4 Sessions	\$255	\$295	\$350	\$375
Full Conference: (5 or more sessions) BEST VALUE!	\$355	\$395	\$450	\$475
Half-Day Workshops	\$160	\$185	\$250	\$270

WELDING TRACK		
	Member	Non-member*
AWS/Weld-Ed Conference	\$25	\$50
Welding Two-Hour Seminars	\$50	\$75
Welding Tracks	\$345	\$430
Welding Sessions*	\$565	\$665
Professional Program	\$250	\$350

* Non-member price for AWS Welding Sessions only includes a one-year AWS Individual Membership.

CONFERENCE CANCELLATION POLICY: Cancellations and refund requests (for paid conference registrations) must be made in writing to Attn: Betsy Bonnell: FABTECH Conference Cancellation, or sent to bbonnell@sme.org no later than October 28, 2022, to receive a full refund minus a \$50 administrative fee. Cancellations received after this date are non-refundable. Substitutions allowed.

Finally, a laser that can **think for you.**



The “brains” behind the **GX-F ADVANCED** Series is the proprietary Mitsubishi Electric artificial neural network technology *Maisart*, which imitates neurons in the human brain. It uses audio and light sensors to monitor the cutting process in real time, automatically adjusting parameters to optimize cutting performance.



Designed by Mitsubishi engineers and all major components built by Mitsubishi, the **GX-F ADVANCED** Series is one of the **only laser systems in the industry with a single source for service and support.**

Visit us at mcmachinery.com

VISIT US AT FABTECH
BOOTH #B6709

 **MITSUBISHI LASER**

3D/ADDITIVE MANUFACTURING

TUESDAY, NOVEMBER 8

8:00 AM - 9:30 AM

NEW! ■ **F10: Additive Manufacturing Outlook for Industrial Applications**

Kevin Yap - Endeavor 3D

10:00 AM - 11:30 AM

NEW! ■ **F11: How 3D Printing Will Democratize Manufacturing**

Matt Sand - 3DEO, Inc.

12:00 PM - 1:30 PM

■ **F12: Additive Manufacturing Safety & Power Quality Solutions**

Dust and Fume Collection for Additive Manufacturing

Alysha Yinger - RoboVent

Increasing Print Quality with Power Quality

Patrick Gannon - ABB Inc.

2:00 PM - 3:30 PM

■ **F13: Business Considerations for 3D Additive Technology**

Carl Dekker - Met-L-Flo

WEDNESDAY, NOVEMBER 9

8:00 AM - 9:30 AM

■ **F14: Fundamentals of AM Technologies and the 7 Processes for Fabrication**

Carl Dekker - Met-L-Flo

10:00 AM - 11:30 AM

NEW! ■ **F15: Significant Product Case Studies in Additive Manufacturing**

New Design Freedoms of the AM Process - Static Mixer Case Study

Nick Estock - AddUp

Faster Development of Full Scale Metal Field Test Articles

Slade Gardner - Big Metal Additive

Case Study: Fives Landis Corp. and AddUp Work Together to Design and 3D Print a Custom Coolant Nozzle

Nick Estock - AddUp

12:00 PM - 1:30 PM

NEW! ■ **F16: 3D Additive Robotic and Laser Solutions for Large Parts**

Printing on 3D Surfaces

Branson Brockschmidt - Southwest Research Institute

Diode Laser Additive and Cladding Applications

Oleg Raykis - Laserline Inc.

2:00 PM - 3:30 PM

NEW! ■ **F17: Design Tools for Additive Manufacturing**

Leveraging the "Swiss Army Knife" of Metal Manufacturing: 10 Compelling Applications in FDM Metal 3D Printing

Daniel Leong and Ross Adams - Markforged

A Closed-Loop Machine Learning and Compensation Framework for Geometric Accuracy Control of 3D Printed Products

Arman Sabbaghi and Wenbin Zhu - Purdue University

AUTOMATION

Track Sponsored By:



TUESDAY, NOVEMBER 8

8:00 AM - 9:30 AM

NEW! ■ **F20: Increase Productivity with Software Automation**

Increase Productivity with Software Automation

Mark Watson - Cincinnati Inc.

The Next Gen Manufacturing ERP Solution--Things They are a Changing!

David Lechleitner - ECi Solutions

10:00 AM - 11:30 AM

NEW! ■ **F21: Enabling Digital Transformation & Connectivity Solutions**

Allen Roberts - AT&T

12:00 PM - 1:30 PM

NEW! ■ **F22: Embracing Automation Options and Best Practices**

Fabricators Embracing Change: Automation, Collaborative Robots and the Future of Your Business

Joshua Mayse - Mid Atlantic Machinery Automation

Assessing Automation Options and New Technologies - Best Practices and Lessons Learned
Kile Snyder - Tube Form Solutions

2:00 PM – 3:30 PM

NEW! ■ F23: What You Need to Understand Before Thinking About Running Your Shop Lights-Out

Michael Schlagenhauser - Acuity and Mathias Konne - Stäubli

WEDNESDAY, NOVEMBER 9

8:00 AM – 9:30 AM

NEW! ■ F24: Automation Basics and Integration for Fabrication Shops

The Best Automation Basics & Sensors Crash Course!

Will Healy III - Balluff Worldwide

Automate, Integrate, and Facilitate

Jeffrey Tyl - Murata Machinery, USA

10:00 AM – 11:30 AM

NEW! ■ F25: How is AI Changing the Future of Robotics?

Jacob Hall - The Manufacturing Millennial and Matthew Wolfe and Paul Boulware - Path Robotics

12:00 PM – 1:30 PM

NEW! ■ F26: Automation E-Commerce Tools & Supply Chain Collaboration

Successful Automation via Careful Requirements Gathering

John Rokus - JR Automation / Hitachi

Supply Chain Excellence: The Business Case for Automation in E-Commerce Fulfillment

David Lind - Modula Inc.

Lowering Costs and Increasing Revenue with a Modernized Web Presence: eCommerce for the Metals Industry

Andrew Potkewitz - Redstage

2:00 PM – 3:30 PM

NEW! ■ F27: Increase Business Intelligence & Labor Shortages with Automation

Surviving the Labor Shortage with Modern Technology & Automation

Ben Barton - Paperless Parts

Using Robotics Business Intelligence to Optimize Productivity

Jason Walker and Patty Katsaros - Locus Robotics

THURSDAY, NOVEMBER 10

8:00 AM – 9:30 AM

NEW! ■ F28: Steps and Lessons Learned in The Automating Journey

Steps for Automation Success

Josh Leath - Yaskawa Motoman

Lessons Learned in the Automation Journey

Kathy Etheridge and Doug Johnson - Salvagnini

10:00 AM – 11:30 AM

NEW! ■ F29: Low-Cost Automation Breaks Down Barriers to Entry

Alexander Mühlens - igus, GmbH

12:00 PM – 1:30 PM

NEW! ■ F220: Automation in Simulation & Imaging for Joining Process

Utilizing Joining and Hemming Simulation to Verify Product Assemblies

Rick Carlisle - AutoForm Engineering

Using Imaging and Sound to Monitor Weld Processes

Greg Cooke - Xiris Automation Inc.

CUTTING

TUESDAY, NOVEMBER 8

10:00 AM – 11:30 AM

NEW! ■ F31: The Most Versatile Machine Tool and Considerations for Successful Waterjet Machining

Top Considerations for Successful Waterjet Machining

Ivan Kondeykin - OMAX Corporation

The Most Versatile Machine Tool with Endless Applications

Brian Sherick - Flow International

WEDNESDAY, NOVEMBER 9

8:00 AM – 9:30 AM

NEW! ■ F34: The Benefits of Cutting with Oxy-Fuel, Nitrogen & Assist Gas Technology

Autogen: Never-Ending Way of Oxy-Fuel Cutting Improvements

Martin Roubicek - IHT Automation GmbH & Co. KG

The Benefits of Taking Control of Your Nitrogen Supply

Brett Maiorano - Atlas Copco Compressors

The Cutting Edge: Innovation Through Assist Gas Technology

James Gamache and Ian Frank - TRUMPF Inc.

10:00 AM – 11:30 AM

■ F35: Comparative Cutting: Which is Right for You?

New Trends in Plasma Cutting Consumables Optimization

Kristopher Rich - Hypertherm Inc.

3D Waterjet Cutting: The Next Dimension

Tim Fabian - SHAPE Technologies Group

Laser Cutting: Increasing Productivity While Reducing Cost Per Part

Brian Gibson - AMADA AMERICA, INC.

THURSDAY, NOVEMBER 10

8:00 AM – 9:30 AM

NEW! ■ F38: Overcome Labor Shortages in The Cutting Industry & Keep Your Equipment Running

Overcoming Labor Shortages in the Cutting Industry by Going Digital

Tom Stillwell - Hypertherm Inc.

Keeping Equipment Running and Productivity High

Jonathan White - Airgas, an Air Liquide Company

FINISHING

TUESDAY, NOVEMBER 8

10:00 AM – 11:30 AM

■ C11: Powder Coating: Recipes for Success

John Sudges - Midwest Finishing Systems, Inc.,
Frank Mohar - Nordson Corporation, and
Michael Withers - Axalta Coating Systems

■ C21: ECOAT 101 - Basics of Electrocoating

James Gezo - PPG and Tim Spingaire,
Therma-Tron-X, Inc.

NEW! ■ C31: Zero to Smart Factory-Building Sustainability

How Any Paint Line Can Go From Zero to Smart Factory through Equipment Retrofits

Will Healy III - Balluff Worldwide, Christopher May and Matthew Fair - Albar Industries, Inc.

Powder Coating Helps Deliver a More Sustainable Footprint for Your Product

Kristen Blankenship - IFS Coatings

2:00 PM – 3:30 PM

NEW! ■ C13: Pretreatment in the Real World

Zirconium Pretreatments in the Real World

Erik Reinhart - Circle-Proscio, Inc.

Save the Green - How Sustainable Pretreatment Can Increase Profitability and Reduce Carbon Footprint

Brandon Lloyd - Atotech USA

■ C23: Maximizing Your Finishing Line - Cradle to Grave

Dan Nesper, Dave Garczynski and Max George - DuBois Chemicals

NEW! ■ C33: Automate Your Way - Options for Your Powder Coating Line

To Move or Not to Move, What is the Ideal Level of Automation for Your Powder Coating Application Needs?

Joseph Glassco and Neil McMeekin - Wagner Systems Inc.

Automation Made Simple for Complex Powder Coating Applications

Jeff Hale - Gema USA Inc.

WEDNESDAY, NOVEMBER 9

8:00 AM – 9:30 AM

NEW! ■ C14: New Technologies I

**Presenters in this session are permitted to use product and tradenames as they are presenting new technologies.*

Utilizing Blasting Automation for Industry 4.0

Brian Kenimer - BlastOne International

Measuring Gloss with the NEW PosiTector GLS Gloss Meter

Jeff Truskowski - DeFelsko Corporation

GemaConnect

Jeff Hale - Gema USA Inc.

ENVIROCRON LUM Retroreflective Powder - A Bright Idea by PPG

Paul Bradley - PPG Industries

NEW! ■ C24: Batch vs. Automated Finishing Systems - Which is Right for You?

Nick Dawson - George Koch Sons, LLC and Frank Mohar - Nordson Corporation

NEW! ■ **C34: Advances in Plating and Process Automation**

Meeting Productivity Demand through Automation of Selective Plating

Derek Kilgore - SIFCO ASC

Better Plating through Automation

Tim Stechschulte - George Koch Sons, LLC

10:00 AM – 11:30 AM

■ **C15: I Want To ECOAT, What Now?**

Suresh Patel and Rob Schiller - BASF / Chemetall and Todd Turnock, George Koch Sons, LLC

■ **C25: Improving Powder Coating Processes**

The Future is Present, When & What to Upgrade Your Existing Powder Application and/or Recovery System

J.R. Rogers and Loren Keene - Wagner Industrial Solutions

Tips for Manual and Automatic Gun Settings

Mark Folcik - Nordson Corporation

NEW! ■ **C35: In the House: Bringing Outside Services Inside**

Vacuum Degreasing - The Future of Solvent Cleaning

Joe McChesney - KYZEN

Sustainable In-House Paint Removal: Lower Running Costs and Improved Productivity

Stephen Taylor - Atotech USA, LLC

Bringing Powder in House

Mark Freels - Global Finishing Solutions

2:00 PM – 3:30 PM

NEW! ■ **C17: New Technologies II**

**Presenters in this session are permitted to use product and tradenames as they are presenting new technologies.*

A Leap Forward in FEVE Fluoropolymers Delivers Major Performance & Finish Advantages

Bob Kelly - PPG

Pro-Cat Infrared Ovens - Electric and Catalytic Infrared Together Delivering Fast, Green & Economical Heat

Marty Sawyer - Trimac Industrial Systems

UniPrep ACS 1000P: Efficient Cleaning and Descaling in a Single Step

Brandon Lloyd - Atotech USA

New Abrasive Product to Increase Productivity and Reduce Costs

Wesley Edwards - Frohn North America

NEW! ■ **C27: Alternative Pretreatment Strategies**

Automated CO₂ Spray Technologies – An Effective and Environmentally Friendly Alternative to Traditional Cleaning and Finishing Processes

Nelson Sorbo - Cool Clean Technologies LLC

Low Cost, Zero Effluent Discharge Strategy and Operation of Paint Pretreatment for Spray Washers

Joseph Smith - Quaker Houghton

■ **C37: IR Curing Technologies and Their Applications**

Basics of Infrared Curing for Finishing Applications

Scott Bishop - Alabama Power Company

Overview of Gas-Fired Catalytic IR Ovens Utilized by the Finishing Industry

Lee McWorter - Finishing Equipment Group/ETTER Engineering

THURSDAY, NOVEMBER 10

8:00 AM – 9:30 AM

■ **C18: See It, Touch It, Fix It**

David Schimpff and Max George - DuBois Chemicals and Tabitha McLeish - The Sherwin-Williams Company

NEW! ■ **C28: How to Choose the Best Coating System**

Matthew Rush, Christopher Graniero and James Gezo - PPG

NEW! ■ **C38: Improving Processes in Your Liquid Paint Booth**

The Impact of Viscosity on Coating Atomization Patterns and Paint Lay Down

Michael Bonner - Saint Clair Systems Inc.

Evolution of New Over Spray Dry Filtration Technologies in Spray Booths

Robert Andreae - Aerem Industry, Inc.

When Did Rework Become Part of Your Finishing Process?

Michael Bonner - Saint Clair Systems Inc.

10:00 AM – 11:30 AM

NEW! ■ **C19: Using Industry 4.0 Data to Improve Your Quality and Workforce**

Cloud Based Machine Data Acquisition and Visualization

Jeff Hale - Gema USA Inc.

How to Upskill Your Current Employees Using Industry 4.0

Dan Nesper - DuBois Chemicals

FORMING AND FABRICATING

TUESDAY, NOVEMBER 8

8:00 AM – 9:30 AM

NEW! ■ **F40: Advanced Brake Press Technologies**

Short Run Bending Technologies
Scott Ottens - AMADA AMERICA, INC.

Utilizing Press Brake Technology to Offset Skilled Labor Challenges
Marcel Fiedler - Bystronic Inc.

The Latest in Press Brake Safeguarding Technology: The Easiest, Fastest and Safest Way
Keverk Torosian - ISB

10:00 AM – 11:30 AM

■ **F41: Machine Safeguarding**

Successful Machine Guarding – The 4 Steps to Success
Douglas Raff - Paragon Industrial Controls Inc.

12:00 PM – 1:30 PM

■ **F42: Roll Forming Basics**

Roll Forming Basics
Brian Rodgers - Formtek Inc.

Modern Lubricants for Roll Form Processes
David Kinnard - Tower Metalworking Fluids

2:00 PM – 3:30 PM

NEW! ■ **F43: Coil-Fed Laser Blanking**

When is it Time to Move to Coil-Fed Laser Blanking?
Jay Finn - LaserCoil Technologies, LLC

Coil-Fed Laser Processing To Increase Production and Profits
Peter Swenson - FAGOR ARRASATE USA

WEDNESDAY, NOVEMBER 9

8:00 AM – 9:30 AM

■ **F44: Roll Forming: In-line Punching, Cutoff Dies and Press Tonnage**

Increasing Value to Your Roll Forming Lines with In-line Punching and Cutoff Dies
Paul Williams - Hill Engineering / Formtek Inc.

When the Press Tonnage Rating Is Really Not That Tonnage
Paul Williams - Hill Engineering / Formtek Inc.

10:00 AM – 11:30 AM

■ **F45: Coil Processing: Leveling, Deburring, Blanking, and Storing**

Leveling & Deburring: Modern Metal Processing
Denis Weinfurter - ARKU Inc.

Engineered Solutions for Metal Coil Storage: Improving Efficiency, Organization, and Safety
Michael Baach - Philpott Solutions Group, Inc. and Steve Detweiler - Philpott Rubber and Plastics

12:00 PM – 1:30 PM

■ **F46: Roll Forming: Advanced Techniques and Design**

Welding Roll Formed Profiles - Select the Right Welding Method
Marco Opitz - TRUMPF, Inc.

Roll Form Profile Optimization - Functional, Lightweight and Freedom in Design
Bill Johnson - Welsper Profile North America

2:00 PM – 3:30 PM

NEW! ■ **F47: Roll Forming: Materials and Troubleshooting**

Addressing Modern Day Materials in Roll Forming Processes
Robert Taylor - TEKFAB

Methodical Troubleshooting - A Step by Step Approach to Diagnosing Root Causes Associated with Rollforming Production
Chuck Summerhill - TEKFAB

THURSDAY, NOVEMBER 10

8:00 AM – 9:30 AM

■ **F48: Roll Forming Justification and Welding Profiles**

Justification and Welding Profiles
Brian Rodgers - Formtek Inc.

10:00 AM – 11:30 AM

NEW! ■ **F49: Combustible Dust Safety for Metalworking and Fabrication**

Combustible Dust Safety for Metalworking and Fabrication
Alysha Yinger - RoboVent

JOB SHOP

TUESDAY, NOVEMBER 8

8:00 AM – 9:30 AM

F50: Job Costing and Estimating in a Changing Economy

Don Clutter - MIE Solutions

10:00 AM – 11:30 AM

NEW! F51: Balancing Your Shops Process & Implementing ERP Solutions the Right Way

Balancing Your Shops Fabrication Processes
Troy Wilson - Cincinnati Inc.

Making the Complex Simple - Implementing ERP Solutions the Right Way
David Lechleitner - ECI Solutions

12:00 PM – 1:30 PM

F52: How to Build a Better Supply Chain for Your Business

Michael Schlagenhauer and Aaron Stamm - Acuity

2:00 PM – 3:30 PM

NEW! F53: Holding People Accountable Through Effective Corrective Action in Today's Tight Labor Market

Mark Ernst - Ernst Enterprises, LLC

WEDNESDAY, NOVEMBER 9

8:00 AM – 9:30 AM

NEW! F54: Risk Radar & Developing and Testing Incident Response Plans

What is a Risk Radar and Why Do You Need to Have a Risk Radar For Your Company?
Michael Schlagenhauer and Michael Jaworski - Acuity

Developing and Testing Incident Response Plans (IRPs) in Manufacturing Environments
Leah Dodson - Piqued Solutions

10:00 AM – 11:30 AM

F55: Improve Production Outcome & Create Sustainability in New Product Development

Improving Production Outcomes Through Cross-Team Synthesis
Sharon McCollick - Strong Point Strategy, LLC

Creating Sustainability in New Product Development

James Ullum - Source International

12:00 PM – 1:30 PM

NEW! F56: The Secret to Stress-Free Sourcing & Overcoming Supply Chain Problems

The Secret to Stress-Free Sourcing
Steve Staub - Staub Manufacturing Solutions
Overcoming Supply Chain Problems to Deliver On-Time to Customers
Greg Coonley - Wahsega

2:00 PM – 3:30 PM

F57: Do You Know How Much Money You're Losing Due to Equipment Breakdown?

Michael Schlagenhauer and Gwendolyn Luscavage - Acuity

THURSDAY, NOVEMBER 10

8:00 AM – 9:30 AM

F58: Business Owner Exit Options in Today's Market

The 8 Value Drivers-Thinking About Selling Your Company?
Susan Frew - Team Star Training

Business Owner Exit Options in Today's Market of High Inflation, Rising Interest Rates and Labor Challenges
Matthew Bradbury and Bobby Lewis - Business Acquisition & Merger Associates

10:00 AM – 11:30 AM

F59: How To Use the R&D Tax Credit to Lower Your Tax Liabilities and Build a Competitive Advantage

How To Use the R&D Tax Credit To Lower Your Tax Liabilities And Build a Competitive Advantage
John Madsen - Black Line Group

Learn How to Reduce Your Tax Liability and Potentially Take Advantage of the R&D Tax Credit
Jim Donovan and Lyle Henning - Eide Bailly LLP

12:00 PM – 1:30 PM

F510: Innovative Manufacturers: to Patent or Not to Patent?

Marshall Honeyman - Avek IP

2:00 PM – 3:30 PM

F511: Getting the Most Value Out of Selling Your Business

Marla DiCarlo - Raincatcher

LASER

TUESDAY, NOVEMBER 8

8:00 AM – 9:30 AM

NEW! **F30: How to be Successful in Your Laser Joining Applications**

Travis Stempky, Tracey Ryba and Masoud Harooni - TRUMPF Inc. and Sebastian Moser - Precitec, Inc.

12:00 PM – 1:30 PM

NEW! **F32: Improve Laser Quality, Inspection & Applications in Joining Processes**

Dynamic Beam Lasers Improve Weld Seam Quality

Elkana Ben-Sinai - Civan Lasers

Novel Applications with High Power Diode Lasers

Oleg Raykis - Laserline Inc.

Automated Weld Inspection: In-Process and Post-Process Application

Tom Graham - Abicor Binzel

2:00 PM – 3:30 PM

NEW! **F33: Digital Laser & 3D Laser Cutting for Next Generation or Custom Robotic**

Digital Laser Control for the Next Generation Robot

Mike Sharpe - FANUC America

Laser Cutting 3D Parts - Evaluating the Benefits of Cartesian & Robotic Cells

Robert Scoville and Tracey Ryba - TRUMPF Inc. and Christon Manzella - Shape Process Automation

WEDNESDAY, NOVEMBER 9

12:00 PM – 4:30 PM

NEW! **WS03: Fabricators Laser Application Workshop**

Welcome & Introductions

Neil Ball - Directed Light and Geoff Shannon - Coherent Inc.

Industrial Lasers Overview: Fiber, Disk and Diode

JP Lavoie - Coherent Inc.

Introduction to Industrial Laser Welding

Thomas Kugler - Laser Mechanisms, Inc.

Cutting with Ultra High-Power Lasers

Rouzbeh Sarrafi - IPG Photonics

Manual Laser Welding, Recent Developments and Outlook

Iurii Markushov and Daniel Early - IPG Photonics

Automation for Laser Welding

Mike Sharpe - FANUC America

In Line Laser Process Monitoring for Weld Quality Assurance

Eric Stiles - Precitec

Laser Welding & Cladding Applications

Wayne Penn - Alabama Laser

THURSDAY, NOVEMBER 10

10:00 AM – 11:30 AM

NEW! **F39: Introduction to New Laser Applications**

Color Marking on Titanium Surfaces Using Pulsed Laser Processing: A Comparison of Nanosecond vs Femtosecond Laser Pulses

Daniel Huerta Murillo and Alanza Brown - TRUMPF Inc. and Marc Sailer - TRUMPF Laser GmbH

Experimental Investigations of Laser Cleaning and Structuring for Metal Surfaces for Adhesive Bonding

Albert Leonhard Jung - TRUMPF Inc., Christoph Neugebauer, Sabrina Vogt and Mauritz Möller - TRUMPF Laser - und Systemtechnik GmbH

Experimental Investigations of Laser Structuring for Metal Surfaces in Metal-Plastic Joints

Albert Leonhard Jung - TRUMPF Inc., Christoph Neugebauer, Sabrina Vogt and Mauritz Möller - TRUMPF Laser - und Systemtechnik GmbH

LEAN

TUESDAY, NOVEMBER 8

8:00 AM – 9:30 AM

NEW! **F60: Leadership's Role in Leading Lean Teams**

Manufacturing Leadership's Role and Responsibility in Driving Lean Organizations

Joe Mazzeo - Integrated Lean and Quality Solutions LLC

Blue-Collar Kaizen: Leading Lean & Lean Teams

Mack Story and Ria Story - Blue-Collar Leadership

10:00 AM – 11:30 AM

■ F61: Value Stream Mapping – Understanding the Whole: From Sales to Shop to Customer

Mike Osterling - Osterling Consulting, Inc.

12:00 PM – 1:30 PM

■ F62: A3 Thinking - Developing People & Solving Problems

Mike Osterling - Osterling Consulting, Inc.

2:00 PM – 3:30 PM

NEW! ■ F63: Lean Reflections and Projections

Jeffrey Sipes - Back2Basics, LLC

WEDNESDAY, NOVEMBER 9

8:00 AM – 9:30 AM

■ F64: Breaking Boundaries for Operational Excellence

Vince Bovino - Bovino Consulting Group

10:00 AM – 11:30 AM

NEW! ■ F65: Developing Lean Talent in 2022

Jeffrey Sipes - Back2Basics, LLC

12:00 PM – 1:30 PM

■ F66: Advance Production Floor Communication & Staffing to Strengthen Standard Work

Advancing Production Floor Communication to Strengthen Standard Work

Sharon McCollick - Strong Point Strategy, LLC

Short Staffed and Need More Production Throughput?

Chuck DeBettignies - Gainsharing Inc.

2:00 PM – 3:30 PM

NEW! ■ F67: The Connective Tissues of the Lean Systems Components

Audie Penn - Faro Partners

THURSDAY, NOVEMBER 10

8:00 AM – 9:30 AM

NEW! ■ F68: Lean Tools for Industry 4.0 Continuous Improvement

Lean Manufacturing is as Relevant in Industry 4.0 as Ever!

Michael Schlagenhauer - Acuity

Automatic Data Collection from Any Machine - Methods and Benefits

Jim Finnerty - Wintriss Controls Group LLC

10:00 AM – 11:30 AM

NEW! ■ F69: Lean Tools & Concepts for Just in Time Implementation

How Lean, Just-in-Time and Technology Can Mitigate the Effects of the Supply Chain Crisis

Kevin Bell - SYSPRO USA

How to Expand Heijunka to Create Just In Time Labor

Gauthier Duval - Veryable, Inc.

12:00 PM – 1:30 PM

NEW! ■ F610: Lean Tools for Implementation & Best Practices to Improve Job Shop

LEAN Concepts - Implementaion Doesn't Have to be Complicated

Eddie Wengerd - PIONEER Corp.

Best Practices to Improve Shop Flexibility and Efficiency

Gene Mussel - Harbour Results, Inc.

MANAGEMENT

TUESDAY, NOVEMBER 8

8:00 AM – 9:30 AM

NEW! ■ F70: When Worlds Collide: Management and Communication in a Multinational Workforce

Allison Yeager - Bridge Intercultural Consulting

10:00 AM – 11:30 AM

NEW! ■ F71: Surviving the Aftermath of the Great Resignation

Lisa Ryan - Grategy

12:00 PM – 1:30 PM

NEW! ■ **F72: Outlook for Advanced Manufacturing: Accelerate Change and Benchmark Your Organization**

Market Outlook for Advanced Manufacturing
Michele Nichols - Launch Team Inc.

READY, Set, Change! Simplify and Accelerate Organizational Change
April Callis-Birchmeier - Springboard Consulting

It's Time to Take Off the Benchmarking Blindfold
Cara Walton - Harbour Results, Inc.

2:00 PM – 3:30 PM

■ **F73: Gratitude Strategies to Create a Company Culture That Rocks**

Lisa Ryan - Grategy

WEDNESDAY, NOVEMBER 9

8:00 AM – 9:30 AM

NEW! ■ **F74: Traits of High Impact Leaders**

Be The "One." The Manager Your Employees Remember
Mark Ernst - Ernst Enterprises, LLC

Blue-Collar Leadership & Teamwork: Traits of High Impact Players
Mack Story and Ria Story - Blue-Collar Leadership

10:00 AM – 11:30 AM

NEW! ■ **F75: Black Swans in Abundance; Prepare for Future Disruptions**

2022 - Black Swans in Abundance
Chris Kuehl - Armada CI

Real Methods Your Business Can Employ to Prepare for Future Disruptions
Cullen Hackler - PEI

12:00 PM – 1:30 PM

■ **F76: Leading Yourself and Others Through Change**

Leading a Change Initiative
Mark Ernst - Ernst Enterprises, LLC

Change Happens: Leading Yourself and Others Through Change
Mack Story and Ria Story - Blue-Collar Leadership

2:00 PM – 3:30 PM

■ **F77: Developing as a Leader in the 21st Century**

Teach These 4 Leadership Skills and Unlock the Potential of Your People and the Power of Your Organization
Sharon McCollick - Strong Point Strategy, LLC

What's in Your Toolbox? Developing as a Leader in the 21st Century
Cullen Hackler - PEI

THURSDAY, NOVEMBER 10

8:00 AM – 9:30 AM

■ **F78: Strategic Planning for Growth & Creating a "Gotta Have" Company**

Let's Do This: Strategic Planning for Growth
Andrena Sawyer - P.E.R.K. Consulting

Creating a "Gotta Have" Company - What it Means and How to Make it Happen
Joel Strom - Chief Value Officers

10:00 AM – 11:30 AM

■ **F79: Create Cultures of Innovation and Accountability**

Raising the Bar with Innovation Mastery
Gary Covert - Gary Covert Consulting and Joel Strom - Chief Value Officers

12:00 PM – 1:30 PM

NEW! ■ **F710: Using Emotional Intelligence to Transform You & Your Business**

Leading From the Inside Out
Jennifer Keitt - The Keitt Institute

5 Years to Transform a 50-Year-Old Company - How We Did it and the Truths it Confirmed
Joel Strom - Chief Value Officers

MARKETING & SALES

TUESDAY, NOVEMBER 8

8:00 AM – 9:30 AM

■ **F80: The State of Sales & Marketing: Attracting Tomorrow's Buyers**

The State of Sales & Marketing in Manufacturing
Michele Nichols - Launch Team Inc.

Attracting Tomorrow's Buyers: Guide to Digital Marketing for Manufacturers
Josh Blankenship - TopSpot

10:00 AM – 11:30 AM

NEW! ■ **F81: Make the Most of Your Marketing Without a Big Team**

Marketing, Party of 1: How to Make the Most of Your Marketing Without a Big Team
Katie Parlin - Flow Waterjet

The Best Kept Secret In Industrial Marketing Is You (& Your Friends)
Eddie Saunders - FlexArm

12:00 PM – 1:30 PM

■ **F82: Manufacturing the Sale & Applying Measurable Processes**

Manufacturing the Sale: Creating a Sustainable, Measurable Process Model for New Business Development, Marketing, and Sales Support
Todd Zielinski - Athena SWC

Applying Measurable Processes to the Manufacturing Sales Function
Anthony Colarusso - SALT Marketing

2:00 PM – 3:30 PM

NEW! ■ **F83: Uncertain Economy & Supply Chain Growth Strategies to Gain Market Share**

Business Builders: Growth Strategies in an Uncertain Economy
Mark Frasco - COACT Associates, Ltd.

Why Your Business Shouldn't Give Up on Marketing Despite the Supply Chain Crisis
Jenny Lockhart - 9 Clouds

WEDNESDAY, NOVEMBER 9

8:00 AM – 9:30 AM

■ **F84: Grow Your Business By Adopting the Right Habits**

Todd Hockenberry - Todd Hockenberry, Inc.

10:00 AM – 11:30 AM

■ **F85: Management & Best Practices for the Sales and Marketing Functions**

Business Builders: Performance Management of the Sales and Marketing Functions
Mark Frasco - COACT Associates, Ltd.

5 Best Practices for How Manufacturing Marketers Can Earn Credibility and Trust When Case Studies Aren't An Option
Dan Konstantinovskiy - RH Blake

12:00 PM – 1:30 PM

NEW! ■ **F86: Manufacturing Marketing Automation: How to Create, Implement, and Analyze High-Performing Strategies**

Digital Transformation & Industry 4.0
Michele Nichols - Launch Team Inc.

Manufacturing Marketing Automation: How to Create, Implement, and Analyze High-Performing Strategies
Josh Curcio - protocol 80, Inc.

2:00 PM – 3:30 PM

NEW! ■ **F87: Technical Writing for Inbound & Marketing Friendly Content**

How to Turn Technical Writing Into Marketing Friendly Content
Holly Jobe - protocol 80, Inc.

How to Write for Inbound Marketing: Best Practices for Engaging Your Leads
Holly Jobe - protocol 80, Inc.

THURSDAY, NOVEMBER 10

8:00 AM – 9:30 AM

■ **F88: PAIN vs. GAIN – What Best Motivates Buyers to Buy?**

Dan Seidman - Read Emotions

10:00 AM – 11:30 AM

■ **F89: Getting the Most of Your Website & Digital Ads**

2022 Battle of the Digital Ad Platforms (and How to Get the Most Out of Google and Facebook Advertising)
Jenny Lockhart - 9 Clouds

SEO 101: Making Your Website Work for You
Shelly Otenbaker - WayPoint Marketing Communications

The Strategy Behind B2B Sales Videos That Drive Action with Buyers
Robert Weiss - MultiVision Digital

12:00 PM – 1:30 PM

NEW! ■ **F810: It's Just Business: International Differences in Sales Expectations**

Allison Yeager - Bridge Intercultural Consulting

2:00 PM – 3:30 PM

NEW! ■ **F811: Building, Selecting & Developing the “Right” Sales Organization in Today’s “Digital” Marketplace**

Ty Swain - Growth Dynamics

ROBOTICS

TUESDAY, NOVEMBER 8

8:00 AM – 12:00 PM

■ **WS01: Getting Started in Industrial Robotics Workshop: What You Need to Know**

Getting Started in Industrial Robotics

Bob Rochelle - Gudel Inc.

Before You Spend Money on Your First Robot, Here Is What You Need To Know

Michael Schlagenhauser - Acuity

Safety Requirements for Industrial Robots

Gwendolyn Lusavage - Acuity

Robotic Ink Jet Printing on 3D Surfaces

Branson Brockschmidt - Southwest Research Institute

12:00 PM – 1:30 PM

NEW! ■ **F92: Cost-Effective Robots for Any Type of Production, Even One-Offs, With Case Studies**

Alex Domanitsky and James Duffy - Abagy Robotic Systems and Ben Sagan - Mitsubishi Electric Automation, Inc.

2:00 PM – 3:30 PM

NEW! ■ **F93: Robotic Operating System, Integration and Programming**

Selection Criteria for Autonomous Mobile Robots

Jason Walker and Patty Katsaros - Locus Robotics

How to Get Started with Integrating Mobile Robots

Denise Stafford - KUKA Robotics

WEDNESDAY, NOVEMBER 9

8:00 AM – 9:30 AM

NEW! ■ **F94: Analyzing Robotic Investment for Small to Mid-Size Fabricators**

Robots as a Service – The Uberization of Robotic Manufacturing

James Van Thof - Adaptec Solutions and Dick Motley - FANUC America Corporation

Automation for Small and Mid-Size Fabrication Shops

Kile Snyder - Tube Form Solutions

10:00 AM – 11:30 AM

NEW! ■ **F95: Using Robotics to Build Operational Resilience & Collaboration**

Optimizing Your Robot Deployments to Help Solve the Labor Shortage

Tom Munger - Realtime Robotics

Robot Autonomy as an Operating System

Francois Simard - Omnirobotic

Enabling Flexible and Safe Human-Robot Collaboration with Speed and Separation Monitoring

Patrick Sobalvarro - Veo

12:00 PM – 1:30 PM

NEW! ■ **F96: Evolution of Robot Programming Possibilities**

Unlocking Robot Programming Possibilities

Zachary Thoma - Kawasaki Robotics

The Evolution of Robot Programming

Josh Leath - Yaskawa Motoman

2:00 PM – 3:30 PM

NEW! ■ **F97: Robotic Solutions for Weld or Joining Technologies**

Not So Fast! What to Know When Considering Collaborative Robot Welding.

Christopher Sharp - OTC-DAIHEN

Robotic Welding for Structural Steel

Danny Steyn - Ocean Machinery

SMART MANUFACTURING

TUESDAY, NOVEMBER 8

8:00 AM – 9:30 AM

■ **F100: Digital Transformation Buzzwords & Playbook**

Buzzword (Tech) Hangover

Jason Petri - Brightly (formerly Dude Solutions)

A Leader’s Playbook for Digital Transformation

Jeff Hensel - Eide Bailly

10:00 AM – 11:30 AM

NEW! ■ **F111: Digital Transformation on the Shop Floor: Do More With Less**

Adapt Your Manufacturing Process: Do More with Less

Mark Cianciosa - Acieta

Digital Transformation on the Shop Floor

Steve Bieszczat - Dassault Systemes

12:00 PM – 5:00 PM

■ **WS02: Smart Manufacturing Bootcamp**

Introduction to Smart Manufacturing

Will Healy III - Balluff Worldwide

Building Your Smart Foundation

Jonathan Kim - AMADA AMERICA, INC.

5 Key Steps: Putting People and Process First for Successful, Ongoing Digital Transformation

Paul Vragel - 4aBetterBusiness, Inc.

Cyber Security Advice for Smart Manufacturing

Jason Miller - BitLyft Cybersecurity

Smart Tech: Condition Monitoring / Predictive Maintenance Topic

Will Healy III - Balluff Worldwide

Smart Tech: The Value of CMMS Systems

Jason Petri - Brightly (formerly Dude Solutions)

Real Time Location Systems (RTLS): How to Get the Right Technology Fit

Mark Dirks and Logan Maxell - WISER Systems

Smart Tech: AI Insights in Production

Jerry Foster - Plex Systems

Developing Smart Processes

Jonathan Kim - AMADA AMERICA, INC.

Building Your Smart Action Plan

Will Healy III - Balluff Worldwide

WEDNESDAY, NOVEMBER 9

8:00 AM – 9:30 AM

NEW! ■ **F114: Surviving Technology and Labor Challenges in Digital Manufacturing**

Manufacturing Execution Systems in an Era of Labor Challenges

Andrew Robling - Epicor Software

How SafeRack Used Lincoln Electric Checkpoint® to Maximize Their Productivity and Reward Skilled Labor!

Douglas Odum - SafeRack and Sheldon Wray - The Lincoln Electric Company

Key Manufacturing Problems Solved by MES SaaS

Paul Hogendoorn - FreePoint Technologies Inc.

10:00 AM – 11:30 AM

NEW! ■ **F115: Condition & Production Monitoring in Smart Manufacturing**

Why Your Smart Factory Should Start with Condition Monitoring Retrofits!

Will Healy III - Balluff Worldwide

Automate Your Production Monitoring with Machine Data

Bill Bither - MachineMetrics

Utilizing Connected Machines to Create Maintenance Efficiencies and New Service Models

Brent Nelson - Donaldson

12:00 PM – 1:30 PM

NEW! ■ **F116: Using Artificial Intelligence to Drive Value in Manufacturing**

Don't Get Left Behind: Using Artificial Intelligence Drive Manufacturing Insights

Jerry Foster - Plex Systems

Partnering with Artificial Intelligence and Machine Learning to Drive Value in Manufacturing

Richard Boyd - Tanjo AI

2:00 PM – 3:30 PM

■ **F117: IIoT & Agile Development for High Mix, Low Volume Environments**

Manufacturing Improvement with IIoT and Agile Development Process

Casey Greer - AMADA AMERICA, INC.

Solving the Late Problem in High-Mix Manufacturing Environments

Mark Lilly - LillyWorks-Protected Flow Manufacturing

THURSDAY, NOVEMBER 10

8:00 AM – 9:30 AM

NEW! ■ **F118: Protect Your Production Line: How to Keep a Cyber Attack from Bringing Business to a Halt**

Jason Miller - BitLyft Cybersecurity

10:00 AM – 11:30 AM

NEW! ■ **F119: Digital Supply Networks & Steps for Securing Your Shop Against Cybersecurity Threats**

The Digital Supply Network Transition

James Ullum - Source International

Collaborating Around New Data Streams to Survive the Coming Chaos

Andrew Johnson - ShelfAware LLC

How to Keep Your Data Protected: The Steps for Securing Your Shop Against Cybersecurity Threats

Jo Cobble - Paperless Parts

12:00 PM – 1:30 PM

NEW! ■ **F110: Using Software & Hardware to Empower Smarter Decisions for Fabricators**

Using Software to Empower Smarter Decisions in Design and on the Factory Floor

Charlie Wood - Fast Radius

The Devil is in The Details: Reducing Mistakes & Increasing Margins in Sheet Metal Fabrication

Jason Ray - Paperless Parts and Pete Beecherl - PennEngineering

STAMPING

TUESDAY, NOVEMBER 8

8:00 AM – 9:30 AM

NEW! ■ **S10: Metalforming Industry Outlook – The Good. The Bad. The Opportunity.**

Jason Brewer - Harbour Results, Inc.

10:00 AM – 11:30 AM

■ **S11: Metal Stamping Press Maintenance Best Practices to Maximize Performance**

Jeff Fredline - MECO Corporation

12:00 PM – 1:30 PM

NEW! ■ **S12: Dealing with Off-Center Loading in Stamping Operations**

David Diaz-Infante - Nidec Press & Automation

2:00 PM – 3:30 PM

NEW! ■ **S13: Maximize Your Metalworking Fluids - Cost, Safety, Performance and Re-use**

Bob Anderson - Tower Metal Working Fluids

WEDNESDAY, NOVEMBER 9

8:00 AM – 9:30 AM

■ **S14: Problem Solving Methodologies and Tips for Progressive Dies**

Peter Ulintz - Precision Metalforming Association

10:00 AM – 11:30 AM

NEW! ■ **S15: Sensors for Die Protection - Make Die Crashes a Thing of the Past**

Jim Finnerty - Wintriss Controls Group LLC

12:00 PM – 1:30 PM

■ **S16: Automatic In-Die Part Quality Monitoring & Tool Adjustments**

James Barrett - Link Electric & Safety Control

2:00 PM – 3:30 PM

■ **S17: Creating Operational Excellence in the Press Shop through Automation**

Will Healy III - Balluff Worldwide

THURSDAY, NOVEMBER 10

8:00 AM – 9:30 AM

NEW! ■ **S18: Lightweight Sheet Metal for the Automotive Industry**

Kidambi Kannan - AutoForm Engineering USA, Inc.

10:00 AM – 11:30 AM

■ **S19: The Impact of Sheet Metal Types on Die Maintenance**

Peter Ulintz - Precision Metalforming Association

TUBE & PIPE

TUESDAY, NOVEMBER 8

8:00 AM – 9:30 AM

NEW! ■ **F400: What's Happening in Tube Bending?**

Adapting to Changes Within the Tube Bending Industry

Christoph Roehm - WAFIOS AG

All Things Tube Bending

Kile Snyder and Mike Thomas - Tube Form Solutions

10:00 AM – 11:30 AM

■ F411: Modern Tube Bending and Lubrication

Modern Tube Bending Machinery
 Greg Miller - Tubular Solutions Inc.
Improving Cost and HSE through Lubrication in Tube Forming/Bending
 Christopher Fletcher - Tower Metalworking Fluids

12:00 PM – 1:30 PM

NEW! ■ F412: Custom Tube Bending and Laser Cutting

Marshall Arndt - Sharpe Products

2:00 PM – 3:30 PM

■ F413: Specialty Tube Welding

Premature Failure of Furnace Tubes
 Ali AlShawaf - SABIC

WEDNESDAY, NOVEMBER 9

10:00 AM – 11:30 AM

NEW! ■ F415: Specialty Tube & Hot Rolling Processes

UV Coating Process - The Phases & Methodology to Implement a Successful UV Coating Project from Start to Finish

Michael Kelly, Allied PhotoChemical Inc.

Chatter-Free Tube Drawing

Gaetano Andreisek - QASS Technologies

Controlling Hot Rolling Process with Eddy Current

Jose Ignacio Lucas - ISEND

2:00 PM – 3:30 PM

■ F417: Advanced Solutions for Tube and Pipe

Advanced Cutting Solutions for Blade Life and Tooling Life Optimization in Tube and Pipe Production

Chris Murray - Thermatool Corp.

Post-Weld Heat-Treat Process Optimization

Sasha Tupalo - Thermatool Corp.

Process Control Techniques for High Frequency Welding

Chris Murray - Thermatool Corp.

WORKFORCE DEVELOPMENT

TUESDAY, NOVEMBER 8

8:00 AM – 9:30 AM

NEW! ■ F200: Technology Investment Choices: The Impact of Hiring & Retention

How Technology Strategy is Impacting Hiring & Employee Retention

Will Healy III - Balluff Worldwide

Teambuilding, Communication, and Collaboration in Technology

Kevin Coleman - KMC EMPOWERMENT LLC

10:00 AM – 11:30 AM

■ F211: Mentoring & Creating a Successful Career Pathing Program

Xcel Mentoring - Fueling Young People with Purpose

Darrell Galloway and Jay Thompson - Xcel Strategies, Inc.

Five Steps to Creating a Successful Career Pathing Program in Your Company

Mark Ernst - Ernst Enterprises, LLC

12:00 PM – 1:30 PM

■ F212: Motivating & Building an Effective Workforce in 2022

Motivating Employees When You're Short Staffed
 Chuck DeBettignies - Gainsharing Inc.

Winning the Workplace Challenge: Getting Along and Getting Things Done

Tanya Williamson - Married to the Ring LLC (D/B/A Tanya Williamson & Associates)

2:00 PM – 3:30 PM

NEW! ■ F213: Rockstar Recruiting & Becoming the Employer of Choice

Rockstar Recruiting for a New Generation
 Susan Frew - Team Star Training

Become the Employer of Choice with Rewards, Challenge, and Recognition

Chuck DeBettignies - Gainsharing Inc.

WEDNESDAY, NOVEMBER 9

8:00 AM – 9:30 AM

NEW! ■ F214: Welcome Onboard: Simple Strategies to Keep Your New Hires from Jumping Ship

Lisa Ryan - Grategy

CONFERENCE PROGRAM

10:00 AM – 11:30 AM

■ **F215: Attracting, Leading & Retaining Talent, Millennials & Gen Z in the Workforce**

Retaining and Attracting Manufacturing Talent During Challenging Times

Joe Mazzeo - Integrated Lean and Quality Solutions LLC

Attracting, Leading & Retaining Millennials & Gen Z in the Workforce

Michele Nichols - Launch Team Inc.

12:00 PM – 1:30 PM

■ **F216: Creating a Culture of Accountability for Organizational Success**

Creating a Culture of Accountability for Organizational Success

Joe Mazzeo - Integrated Lean and Quality Solutions LLC

Creating a Culture to Win in Manufacturing

Gary Covert - Gary Covert Consulting

2:00 PM – 3:30 PM

NEW! ■ **F217: Creating Mentors for our Future & The Value of Apprenticeships**

Creating Mentors for Our Future - The Apprenticeship Gap

Max Ceron - Canadian Welding Bureau Association

Bridging the Gap: The Value of Apprenticeships for Our Workforce

Melanie Bennett and Kevin Toft - ALM Positioners and Andrew Zinn - Davenport West High School

THURSDAY, NOVEMBER 10

8:00 AM – 9:30 AM

NEW! ■ **F218: Prioritize Your People: Building a Culture to Help You Grow, Maximize Profits**

Adam Schmitt - Fabricator's Collective

10:00 AM – 11:30 AM

■ **F219: READ (HIDDEN) EMOTIONS: Know What Others are Feeling**

Dan Seidman - Read Emotions

12:00 PM – 1:30 PM

NEW! ■ **F210: Women Who Lead: Activating the Power Within**

Women Who Lead: Become the Leader You are Destined to Be

Ria Story - Blue-Collar Leadership

Activating the Power Within

Nyabingha McDowell - Sistaaz Heal Network LLC

WELDING

TUESDAY, NOVEMBER 8

8:30 AM – 4:00 PM

W1: AWS/WELD-ED EDUCATORS CONFERENCE - ROBOTS AND AUTOMATION IN WELDING EDUCATION

8:30 AM - 8:45 AM

Welcome/ Introductions

Rick Polanin, AWS President & Co-Principal Investigator, Weld-Ed

8:45 AM – 9:15 AM

Teaching Welding Students About Robots

Rick Polanin, AWS President & Co-Principal Investigator, Weld-Ed

9:15 AM – 10:00 AM

Plummer Lecture - The Written Project Portfolio: Benefits to Practical Welding Training

Jeff Carney, Professor, Ferris State University

10:00 AM - 10:15 AM - BREAK

10:15 AM – 11:00 AM

Robot Education at COC

Tim Baber, Professor, College of the Canyons

11:00 AM – 11:45 AM

Robot Systems Education

Joel Johnson, Professor, North Dakota College of Science and Technology

11:45 AM – 12:15 PM – LUNCH

Sponsored by - Hypertherm Plasma Cutting for Student Projects

12:15 PM – 1:00 PM

Hypertherm Automation

Hypertherm Inc.

1:00 PM – 1:45 PM

Engaging Students with Robots

Lincoln Electric Inc.

1:45 PM – 2:00 PM - BREAK

2:00 PM – 2:45 PM

Robot Education at Miller Electric

Miller Electric Inc.

2:45 PM – 3:15 PM

AWS Foundation Scholarship Opportunities

Monica Pfarr, AWS Foundation Executive Director

3:15 PM – 3:30 PM

Vendor Presentations

3:30 PM

Wrap-Up and Evaluations

TUESDAY, NOVEMBER 8

9:00 AM – 4:30 PM

W2: WELDING PRODUCTIVITY TRACKS

9:00 AM – 9:15 AM

Welcome Introduction

Steve Snyder, Staff Welding Specialist, American Welding Society

9:15 AM – 10:15 AM

Cobots Increasing Welding & Cutting Productivity

Josh Pawley, VP of Business Development, Vectis Automation

10:30 AM – 11:30 AM

Robotic Welding Automation: Weld a lot of Parts FAST with CONSISTENT Results

Mike Monnin, General Manager – Sales & Marketing, OTC Daihen, Inc.

11:30 AM – 12:45 PM – LUNCH

12:45 PM – 4:00 PM

Welding Productivity for Welding Enthusiast

Rob Tessier, Airgas and Steve Snyder, Staff Welding Specialist, American Welding Society

4:00 PM – 4:30 PM

Q&A Panel Discussion

TUESDAY, NOVEMBER 8

8:00 AM – 4:00 PM

W3: DIVERSE ROLES AND NEEDS WITHIN THE WELDING INDUSTRY TRACKS

8:00 AM – 9:00 AM

Welding for Sanitary Applications

William Roth, President, Welding Engineering Consultants, LLC and Richard Howard, Director of Quality, Traylor Industrial

This presentation covers basic reasons why sanitary design differs from ordinary fluid designs. It will include some weld joint design principles for sanitary applications as well as acceptance criteria for welded connections per AWS D18.

10:00 AM – 11:00 AM

High Purity Orbital Welding

Richard Howard, Director of Quality, Traylor Industrial and Richard Campbell, Bechtel Fellow & Welding Technical Specialist, Bechtel

This presentation will describe and explain the importance of qualified practices and procedures, with an emphasis on daily production welding. In the high purity world there isn't any time for rework and rejection, it can adversely affect the schedule and cost of the project. That's why proven qualified welding procedures and practices are so important to this industry.

11:00 AM – 12:00 PM

Semiconductor High-Purity Welding

Richard Campbell, Bechtel Fellow & Welding Technical Specialist, Bechtel and Richard Howard, Director of Quality, Traylor Industrial

This presentation will provide an overview of the highest of high-purity welding, that in the semiconductor and microelectronics industries. With the current supply-chain crisis, there is a huge push to bring semiconductor manufacturing back to the US. This will provide information on the SEMI standards for welding of tubing in this industry, their requirements and acceptance criteria, along with applications and purging techniques.

1:00 PM – 2:00 PM

Design Engineers & Weld Engineers – How Their Roles Differ and How They Can Work Together

Joe Bailey, Weld Engineering Manager, Vermeer

Using D14 standards as a basis, this talk will consider the unique qualifications and responsibilities of design engineers and weld engineers and ultimately explore how these two roles can and should work together to make a robust product design and manufacturing process.

2:30 PM - 3:30 PM

D1.6 - Proper Purging of Stainless Steel and Other Stainless Steel Pipe Welding

William F. Newell, Jr. PE, Peng, IWE, Vice President, Engineering, Euroweld, Ltd.

High integrity service usually requires purging the inside Diameter of stainless-steel piping and tubing with an inert gas to avoid the creation of deleterious oxides. Various purging and non-purging methods will be presented as well as advantages and disadvantages for each approach.

WEDNESDAY, NOVEMBER 9

8:00 AM – 4:00 PM

W5: APPLIED WELDING METALLURGY

Practical Welding Metallurgy

Ben Pletcher, Chief Welding Technologist, Bechtel

Introduction to basic metallurgy concepts with practical applications of material properties from time of manufacturing through to welding fabrication. We will discuss crystal structures, grain size, effects of welding and how these change the mechanical properties of our engineering alloys. By understanding fundamental physical metallurgy concepts, we will evaluate scenarios of how and why we use preheat, PWHT, or place limitations on heat input. Our emphasis on this course will be carbon and low-alloy steels but introduce stainless and non-ferrous alloys for future more specialized study.

8:00 AM – 4:00 PM

W6: PRICING FOR PROFITABILITY OF WELDED STRUCTURES

Scott Helzer, Technology Enabled Welding & Inspection - AWS: CWI, CWE, ASNT: PT, RT, VT

Introduction to the Micro and Macro Economics of Welding Using Cost / Volume / Profit Relationships for the Best Practices in the Economics & Marketing of Welded Fabrications

10:00 AM - 12:00 PM

W7: WELDING PERFORMANCE QUALIFICATIONS

Scott Witkowski, Republic Testing Labs

Learn how to successfully perform, test, report, and write certs for welder qualification.

1:00 PM – 3:00 PM

W8: SECRETS TO A SUCCESSFUL PQR

Scott Witkowski, Republic Testing Labs

Learn how to successfully create, weld, test, report, & write a successful PQR over multiple codes.

THURSDAY, NOVEMBER 10

8:00 AM – 4:00 PM

W9: STAINLESS STEEL FABRICATIONS DO'S & DON'TS, AND WHY NOT(S)

Scott Helzer, Technology Enabled Welding & Inspection - AWS: CWI, CWE, ASNT: PT, RT, VT

Introduction to the properties of stainless steels: corrosion resistance, weldability, joint designs, base and electrode compatibility & the estimating of costs as compared to carbon steels.

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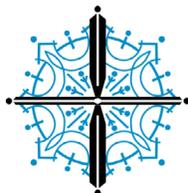


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AWS PROFESSIONAL PROGRAM

Pick and choose between concurrent sessions for the latest in welding research and commercial developments.

TUESDAY, NOVEMBER 8

7:00 AM – 8:30 AM

SESSION 1: PLENARY SESSION

Chair: T.J. Lienert, TJ Lienert Consulting

8:00 AM

Addressing Materials Challenges and Other Barriers to the Future of Additive Manufacturing

Todd Palmer, Pennsylvania State University

9:00 AM

Evolution of Analytical Modelling Approaches for Resistance Spot Welding: A Historical Perspective

Jerry Gould, Edison Welding Institute

SESSION 2: AMERICAN COUNCIL OF THE IIW

Chair: R. Shaw, Steel Structures Technology Center

10:00 AM

Role of Standards in Welding Safety

Bruce Cannon, Weld Australia

10:30 AM

Keeping Pace with Change Thomas Medal 2020

Vincent van der Mee, European Welding Association

11:00 AM

IIW Commission I Activities on Additive Manufacturing

Doug Kautz, Leidos, Inc.

11:20 AM

The International Institute of Welding: Strategic Directions for Welding and Joining Research and Industrial Applications

Robert Shaw, Steel Structures Tech Ctr

11:40 AM

Microstructure and Mechanical Properties of Electron Beam Additively Manufactured Ti-6Al-4V

Amber Black, Samantha Lawrence, Mary O'Brien, Robin Pacheco, Nolan Regis, Mark Sandoval, Michaela McKamey, Brett Preston, and Thomas Jungst, Los Alamos National Laboratory

SESSION 3: ARTIFICIAL INTELLIGENCE/MACHINE LEARNING

Chair: Zongyao Chen, Air Liquide

10:00 AM

An AI-based Vision Methodology for Self-guided Seam Tracking in Gas Metal Arc Welding

Mahyar Asadi and Amin Ghasemazar, Novarc Technologies

10:20 AM

Evaluation of Spatter Production with Deep Learning Algorithms

Zongyao Chen, Air Liquide

10:40 AM

How to Accurately Monitor the Weld Penetration from Dynamic Weld Pool Serial Images using CNN-LSTM Deep Learning Model?

Rui Yu, Joseph Kershaw, Peng Wang, and YuMing Zhang, UKY

11:00 AM

Machine Learning-based Process Characterization and Efficient Adaptive Control in Robotic Arc Welding

Joseph Kershaw, Rui Yu, Yuming Zhang, and Peng Wang, University of Kentucky

11:20 AM

Predicting Operation Windows for High-Frequency Induction Aluminum Tube Welding Through Machine Learning

Shao-Wei Cheng, National Tsing Hua University and Hongyan Zhang, University of Toledo

SESSION 4: AUTOMATION, SENSING & CONTROL

Chair: YuMing Zhang, UKY

2:00 PM

Developing an Automated Defect Detection TIG Welding Robot with a Future Adaptive Implementation

Shems-Eddine Belhout, John Codevilla, Devon Goodspeed, William Hamel, Bradley Jared, and Dylan Lewis, University of Tennessee; David Hansen, John Tatman, and Greg Frederick, Electric Power Research Institute

2:20 PM

High Speed Video (HSV) and Synchronized Data Acquisition (DAQ) to Observe Welding Process Stability

James McNeil, Jim Hansen, Michael Carney, Dennis Harwig, and Nick Kapustka, EWI

2:40 PM

Real-Time Recognition of Arc Weld Pool Using Image Segmentation Network

Rui Yu, Joseph Kershaw, Peng Wang, and YuMing Zhang, UKY

3:00 PM

Micro Cross Weld Tensile Testing of Dissimilar Metal Welds using Digital Image Correlation

William Siefert and Boian Alexandrov, Edison Joining Technology Center (OSU Welding Engineering)

3:20 PM

Mechanical Design and Development of a Five Degree-of-Freedom TIG Welding Robot

Devon Goodspeed, Bradley Jared, William Hamel, Josh Penney, Shems Belhout, Ethan Rummel, John Codevilla, and Dylan Lewis, The University of Tennessee

SESSION 5: WELDING PROCESS STUDIES

Chair: Nick Kapustka, EWI

2:00 PM

Application of Polarity Switching Capacitor Discharge Welding to Aluminum Sheet Structures

Jerry Gould and Lindsey Lindamood, EWI; Julio Malpica, Patrick Lester, and Dewei Zhu, Novelis Global Research & Technology Center

2:20 PM

Buried Arc GMAW for Single Pass Single Sided Erection Joints onboard Ships

Jim Hansen, Nick Kapustka, and Paul Blomquist, EWI

2:40 PM

Impact of Beam Deflection on Porosity During Keyhole Mode Laser Welding of Aluminum Alloys

Abhirup Saha, Tarasankar DebRoy, and Todd Palmer, Penn State University; Jeffrey Rodelas and Michael Maguire, Sandia National Laboratories

3:00 PM

Micro GTAW Applied to a Battery Pack for Racing Applications

Faissal El Idrissi and Prashanth Ramesh, Center for Automotive Research - The Ohio State University; Kaue Riffel, Federal University of Santa Catarina; Michael Johanni, Venturi North America; and Antonio Ramirez, Edison Joining Technology Center - The Ohio State University

3:20 PM

WeldVac – A Quiet, Clean Metal Removal System

Paul Blomquist and Jason Rausch, EWI

WEDNESDAY, NOVEMBER 9

SESSION 6: MECHANICAL PROPERTIES

Chair: P.W. Hochanadel, LANL

9:00 AM

An Investigation into the Effects of Stir Zone Chemistry on Fracture Toughness in Friction Stir Welded Pipeline Grade Steel

Michael Eff, Jerry Gould, Tim Stotler, and Hyeyun Song, EWI

9:20 AM

Development of a Temperature-Dependent Material Property Database for DH36 Steel

Daniel Bechetti, Jennifer Semple, and Charles Fisher, Naval Surface Warfare Center, Carderock Division; Wei Zhang, The Ohio State University

9:40 AM

Evaluating the Carbide Precipitation Behavior During Short Term Tempering and its Influence on Impact Toughness

Eun Jang and Boian Alexandrov, OSU Research

10:00 AM

Fatigue Properties of Dissimilar Aluminum to Steel Welds Joined by Ultrasonic Interlayered Resistance Spot Welding Process

Luke Walker and Wei Zhang, The Ohio State University; Craig Vanderbilt, 2KTH Parts Industries; and Anoop Samant, Honda Development & Manufacturing of America

10:20 AM

Hardness Prediction by Incorporating Heat Transfer and Molten Pool Fluid Flow in a Multi-pass, Multi-layer Weld for Onsite Repair of CSEF Grade 91 Steel

Aryan Aryan, Obinna Onwuama, Desmond Bourgeois, and Wei Zhang, The Ohio State University

10:40 AM

Use of Low Transition Temperature Steel Alloys In Welded Overlays for High Wear Applications

Carter Trautmann and Patricio Mendez, University of Alberta

11:00 AM

Meta-Analysis of Fatigue Properties in Additively Manufactured 316L Austenitic Stainless Steel

Ian Wietecha-Reiman, Stephen Sabol, David Driggers, and Todd Palmer, Pennsylvania State University

SESSION 7: PROCESS MODELING AND SIMULATION

Chair: P.F. Mendez, CCWJ Univ of Alberta

9:00 AM

Analysis of Temperature and Velocity Fields in the GTAW Arc for Argon

Patricio Mendez, Alberto Velazquez, Marco Ramírez, and Alfredo Delgado, Universidad Nacional Autónoma de México and Stefano Sacco, University of Alberta

9:20 AM

Droplet Temperature in GMAW

Rishiekesh Ramgopal and Patricio Mendez, Canadian Centre for Welding and Joining

9:40 AM

Energy Balance in Gas Metal Arc Welding

Vicente Núñez Sánchez and Patricio Mendez, CCWJ

10:00 AM

Integrated Modeling of Defect Formation During Deep Penetration Laser Welding of Creep Resistant Nickel Base Alloys

Mingze Gao, Barnali Mondal, Todd Palmer, and Tarasankar Debroy, Penn State University

10:20 AM

Scaling Analysis of Thermal and Mechanical Process in Friction Stir Welding

Xinrui Liu and Patricio Mendez, University of Alberta

10:40 AM

The Influence of Dynamic Behaviors Characteristics of Molten Pool on the Weld Formation during the High-Speed Laser Welding

Yuewei Ai, Central South University

SESSION 8: ADDITIVE MANUFACTURING

Chair: Michael Eff, EWI

2:00 PM

Carbonitride Development and Heat Treatment Response of Additively Manufactured 17-4 PH Stainless Steel with Variations in Composition

Derek Shaffer, Pennsylvania State University

2:20 PM

Characterization of Dissimilar Materials 410 Martensite Stainless Steel and Mild Steel Component Produced by Wire Arc Additive Manufacturing

Wei Tang, Yukinori Yamamoto, Andrzej Nycz, Peeyush Nandwana, Michael Kirka, Derek Vaughan, Chris Masuo, Luke Meyer, Sudarsanam Babu, and Sougata Roy, Oak Ridge National Laboratory; Obed Acevedo, University of Tennessee

2:40 PM

Deleterious Phase Avoidance in Additively Manufactured Functional Gradients through Path Planning

Olga Eliseeva, EWI

3:00 PM

Large-Scale Hybrid Manufacturing using Wire Arc Additive Manufacturing

Joshua Penney, Aaron Cornelius, Tiffany Quigley, Ross Zamoski, William Hamel, Bradley Jared, and Tony Schmitz, University of Tennessee

3:20 PM

Process-Feature-Microstructure-Property Relationships for A9628 Directed Energy Deposition Additive Manufactured Steel Components

Nikolas Vega Michalak, Dennis Harwig, and Boian Alexandrov, Ohio State University

3:40 PM

The Effects of Post-Weld Processing on Friction Stir Welded Additive Manufactured AlSi10Mg

Michael Eff, EWI and Harvey Hack, Northrop Grumman

4:00 PM

Hybrid Manufacturing: Combining Additive Friction Stir Deposition, Metrology, and Machining

Ross Zamoski, Joshua Kincaid, Sudarsanam S (Suresh) Babu, and Tony Schmitz, University of Tennessee, Knoxville

4:20 PM

In-situ Liquid Nitrogen Cryogenic Cooling for Interpass Control in High-Duty Cycle Wire Arc Additive Manufacturing of Large Components for Navy Applications

Alexey Kuprienko, Dennis Harwig, and Carolin Fink, The Ohio State University; Michael Carney, EWI

SESSION 9: WELDABILITY/ WELDING METALLURGY

Chair: Daniel Bechetti; NSWC Carderock Division

2:00 PM

Influence of Microstructure on the Mechanism of Hydrogen-assisted Cracking in Dissimilar Metal Welds for Refinery Application

Abbas Mohammadi and Boian Alexandrov, The Ohio State University; Jorge Penso, Shell Global Solutions US Inc.

2:20 PM

Investigation of Fe-10 wt.% Ni Steel Weld Metal Hydrogen Induced Cracking Susceptibility using the Gapped Bead on Plate (GBOP) Test

Tyler Christ and Daniel Bechetti, NSWC Carderock Division

2:40 PM

Material Characterization of Grade 91 Steel Welds using Micro-resolution Ultrasonic Imaging System

Obinna Onwuama, Aryan, Desmond Bourgeois, and Wei Zhang, The Ohio State Univ Dept of MSE; Jeong Na, Kellogg Brown & Root LLC

3:00 PM

Optimizing Productivity of Hyper Duplex Stainless Steels Overlay while Avoiding Sigma Phase Formation

Andres Acuna and Antonio Ramirez, The Ohio State University

3:20 PM

Phase Transformation Behavior of Fe-10wt.% Ni Steel Weld Metal

Daniel Bechetti, Jennifer Semple, and Matthew Sinfield, Naval Surface Warfare Center, Carderock Division

3:40 PM

The Influence of Boride Phase Transformations on Heat-Affected Zone Liquation Cracking Susceptibility in Laser Welded 304L Stainless Steel

Erin Barrick, Jeffrey Rodelas, James (Tony) Ohlhausen, Johnathon Brehm, Jack Herrmann, Peter Duran, Khalid Hattar, Kathryn Small, Ryan DeMott, and Charlie Robino, Sandia National Labs

4:00 PM

Welding Investigation of Wrought FeMnAl Steel

Tao Dai, LeTourneau University and Zhili Feng, Oak Ridge National Laboratory

AWS POSTER COMPETITION

Posters present welding results and related material, which are best communicated visually, as well as research results that call for close study of photomicrographs, tables, systems architecture, or other illustrative materials.

MONDAY, NOVEMBER 7

7:00 AM – 8:30 AM

AWS Prayer Breakfast

This year's speaker at the AWS Prayer Event will be Steve Bunyard. Steve Bunyard is the president of RelGNITE Hope, which is a faith based welding training organization headquartered in Southern California. In his younger years, Steve was CEO and owner of Premier Performance, a high-performance automotive retailer and manufacturer in Orange County, California. After selling the company, Steve went on to become the missions pastor at Rolling Hills Covenant Church (RHCC) for twenty years. While pastoring at RHCC, Steve founded RelGNITE Hope in 2011. Steve is an American Welding Society Certified Welder and a Certified Welding Inspector. Steve has a bachelor's degree from Long Beach State University and a Master's degree in Christian Apologetics from Biola University. Steve and his wife Lorri have been married for 47 years and live in San Pedro, California.

8:30 AM – 10:00 AM

AWS Opening Session / Annual Business Meeting

During the AWS Opening Session and the 103rd Annual Business Meeting, 2022 AWS President Dr. W. Richard Polanin will give the Presidential Report and Mr. Dennis K. Eck will be inducted as the AWS President for 2023. Following the induction, the 2022 Class of AWS Counselors, Fellows, and the CWI Lifetime Achievement Award winner will be introduced.

10:30 AM – 11:30 AM

Comfort A. Adams Lecture

The Comfort A. Adams lecture this year is titled "Understanding and Control of Weld Microstructure and Joint Interface of Steels and Dissimilar Metals" by Toshihiko Koseki, Professor at Kyoto University of Advanced Science and Emeritus Professor of The University of Tokyo in Japan.

6:30 PM – 8:30 PM

AWS Opening Reception

On behalf of the AWS president and first lady, we invite you to attend the AWS Opening Reception. This reception is the official kick off to FABTECH 2022 for AWS members. Attendees will have the opportunity hear from our current 2022 President Dr. W. Richard Polanin, President Elect Dennis K. Eck, and Executive Director & CEO Gary W. Konarska II.

TUESDAY, NOVEMBER 8

12:00 PM – 2:00 PM

AWS National Awards Ceremony

As the Society and the Industry it serves have grown, so has the need to recognize outstanding scientists, engineers, welders, educators, and researchers. This Award Ceremony and Luncheon will serve to celebrate their incredible accomplishments. This is an invitation only event.

2:00 PM – 3:00 PM

AWS National Nominating Committee – Open Meeting

AWS members are requested to submit their recommendations for national officers to serve during 2024. Nominations must be accompanied by 20 copies of biographical material on each candidate, including a written statement by the candidate as to his/her willingness and ability to serve if nominated and elected.

WEDNESDAY, NOVEMBER 9

12:00 PM – 2:00 PM

AWS Rhenda M. Kenny Section Appreciation And Member Milestone Recognition Event

Held each year to coincide with FABTECH, the AWS Rhenda M. Kenny Section Appreciation and Member Milestone Recognition Event unites leaders from across the American Welding Society to celebrate the dedication and service of long-time members and outstanding volunteers, including AWS Section and Student Chapter Officers.

1:00 PM – 3:00 PM

WEMCO Excellence in Welding Awards Ceremony

The best and brightest stars in the welding industry will be honored for their outstanding achievements at the annual Excellence in Welding Awards. Presented by the AWS and WEMCO, the Excellence in Welding Awards honor outstanding people, organizations and programs that elevate the image of welding. This is an invitation only event.

EXHIBIT HALL CAREERS IN WELDING MOBILE EXHIBIT
OPEN DURING SHOW HOURS

The **American Welding Society Foundation's Careers in Welding Mobile Exhibit**, sponsored by Lincoln Electric, is a 53-foot expandable trailer that provides individuals with a unique, hands-on virtual reality welding experience. Visitors learn about the vast career opportunities in the welding field and how they can apply for AWS Scholarships to pursue education and training. Each day of the tour, a \$1,000 scholarship will be awarded to the person with the highest score on the VRTEX virtual reality welding machines.



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	9.3%	Inspection & Production Control	9.3%	
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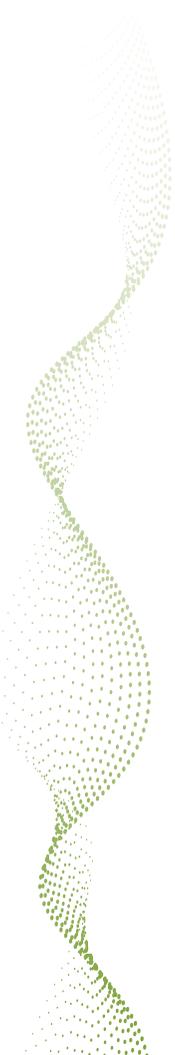
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