

DAY 3

WEDNESDAY
NOVEMBER 13, 2019

THE OFFICIAL FABTECH PUBLICATION

FABTECH

NORTH AMERICA'S LARGEST METAL FORMING,
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SHOW DAILY

TODAY'S EVENTS

Women of FABTECH Breakfast

7:45 AM – 10:00 AM
Room S103

Keynote: Grant Imahara, Former Host on Discovery's "Mythbusters" and Animatronics Engineering Expert

8:30 AM – 9:30 AM
Lakeside Center Ballroom

Grant Imahara Meet/Greet

9:45 AM – 10:30 AM
Lakeside Center Ballroom

Leadership Exchange: The Impact of Disruptive Technology and the Future of Manufacturing

12:30 PM – 1:30 PM
Lakeside Center Ballroom

Smart Manufacturing Hub

Sessions All Day
During Show Hours
Booth A4138

Rest and Recharge Lounge

During Show Hours
North Building 2.0 Level
(by McDonald's)

Scam Me if You Can

The Tuesday crowd at FABTECH was treated to an engaging and funny keynote by legendary former con man Frank Abagnale. A former professional impostor and the author of the bestselling memoir, *Catch Me If You Can*, as well as *The Art of the Steal* and *Stealing Your Life*, Abagnale is one of the world's most respected authorities on the subjects of fraud, forgery, and cyber security.

Scammers and con-artists steal billions of dollars from unsuspecting Americans every year. "Modern technology that has been developed to protect us," said Abagnale, "has only made it easier for scammers to steal victims' money, information, or even their lives." From identity theft to scam phone calls and insurance fraud, con artists are always out there, waiting for the right moment to commit their crimes.

In today's world, its cybersecurity that is currently grabbing all the headlines. Instead of letting victims off the hook due to their unfamiliarity with technology, Abagnale placed the responsibility for any incidents where it rightly belongs.

"Every breach occurs because someone in a company did something they weren't supposed to do, or someone failed to do something they were supposed to do," he said. "Hackers do not cause breaches."

Trusted by the FBI for more than four decades, Abagnale has lectured frequently at



the FBI's Academy and at field offices. He has become a hero to hundreds of public and private sector organizations for his counsel and strategic insight on safeguarding information systems and for combating cyber-fraud. More than 14,000 financial institutions, corporations, and law enforcement agencies use his fraud prevention programs to safeguard their financial, intellectual property, and physical assets. He consults with major corporate clients such as Experian, Intuit, and LexisNexis, as well as serving as AARP's Fraud Watch Network Ambassador.

Abagnale's FABTECH presentation kept the audience on the edge of their seats. He retold the story of his transformation from one of the world's more notorious con-artists to international cybersecurity expert. In that role, he offered plenty of advice to manufacturers.

"Every scam, no matter how sophisticated or amateur, they all require the scam artist to raise two red flags," said Abagnale. "At some point they are going to ask you for money, and you must give it to them immediately (provide a Walmart Green Dot card, wire me the money, use Apple Pay, give me your credit card number, etc.) or they are going to ask you for personal information (date of birth, SSN, bank account number, etc.). Without these two red flags that everyone should know, the scam cannot be successful."

The seminar provided a brief introduction to material in Abagnale's latest book, *Scam Me If You Can: Simple Strategies to Outsmart Today's Ripoff Artists* (Portfolio/Penguin Random House-AARP). Frank brought the crowd up-to-date on all aspects of cyber fraud, identity theft, data breaches, medical identity theft, social media, and the means used by cyber criminals to obtain identities and other confidential information from businesses and individuals. He discussed the importance of comprehensive identity management for companies, corporations, financial institutions, small businesses, and people in general.

Immortalized on Film

For many, Abagnale is the first call in the event of any scam. His on-target and insightful advice armed the FABTECH audience with many simple ways they could protect

continued on p. 26

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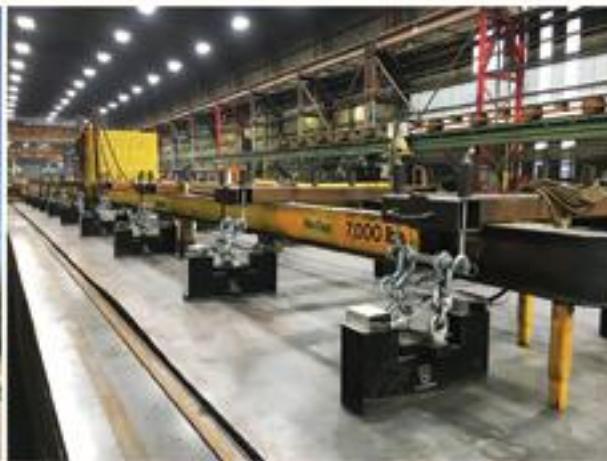
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Toronto, Ontario Canada | June 16-18

Las Vegas, Nevada | November 18-20

2021

Monterrey, Mexico | May 4-6

Chicago, Illinois | September 13-16

2022

Mexico City, Mexico | May 4-6

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ESAB Experience Features Hands-On Live Arc Demos

ESAB offers a premiere hands-on welding, cutting and educational experience in Booth B17087.

Welding Opportunities

ESAB has redefined rugged portability with its Robust Feed Pro wire feeder. The shop version will be set up for pulsed MIG with the new

Aristo® 500ix power source and AlcoTec® aluminum wire. The Robust Feed Pro Offshore system features the Warrior® 500i power source and Dual Shield® flux cored wire.

The full Rebel line up will be available, including ESAB Rebel™ EMP 205ic AC/DC for TIG aluminum, as will Renegade™ ES 300i

for Stick welding with Atom Arc®, Atom Arc Acclaim and ESAB 7018-1 Prime low hydrogen electrodes.

Cutting Opportunities

ESAB's new DMX SmartCorner™ technology uses 3D interpolated bevel motion to cut outside beveled corners without a corner

loop and cut inside beveled corners without rounding the edges. For cutting pipe in diameters from 50 to 300 mm alongside a cutting table for flat plate, explore ESAB's new SmartPipe™ cutting system.

For the industry's leading combination of performance, reliability and value, check out the iCNC Performance controller from Thermal Dynamics® Automation, and enter to win an automation upgrade valued at \$20,000 at thermal-dynamics.com.

Thermal Dynamics will preview the next-generation Cutmaster® 40 platform, a 115V-230V multi-voltage unit that weighs 23 lbs. and delivers a 50-amp, 50 percent duty cycle output on 230V primary. For cutting up to 60 percent longer before changing electrodes, use the new Cutmaster Black Series consumables. Power through 1-1/2-in. thick steel and you'll see why we call Cutmaster 60i the cutting beast.

Filler Metal Innovations

ESAB 7018-1 Prime low-hydrogen Stick electrodes come in a 24-lb. master carton that contains six 4-lb. VacPac™ packages, which can be sold individually. VacPac guarantees factory-fresh electrodes to promote quality assurance, and it is more convenient to carry around jobsites.

Stoody® has launched a family of chrome-free filler metals for combating hexavalent chromium issues, as well as a complete portfolio of NTP (No Twist Pack) drums, making its smaller diameter wires available for high-volume and robotic hardfacing applications.

ESAB's new Dual Shield® Prime low-hydrogen (H4) Flux-Cored wires feature laser welded seams to combat moisture absorption in humid environments, retaining their H4 designation even after extended storage and exposure. OK AristoRod® 38 Zn is an AWS A5.18 ER70S-G solid MIG wire specially alloyed to minimize porosity and spatter on galvanized steels.

Digital and Segment Solutions

ESAB Digital Solutions is a complete suite of digital services that puts data to work to monitor equipment, streamline documentation, boost control quality and increase productivity.

ESAB will also showcase integrated systems designed for industrial applications, with a focus on mechanized and automated solutions pipe/pipelines/tube fabrication, ship building, structural steel and pressure vessels. The new Pipeweld Orbiter combines the productivity benefits of mechanized welding with the high deposition rates of Pipeweld flux cored wires to lower cost-per-joint by 40 percent. ■

STEPHEN "RIPPY" MARSHALL
HEAVY EQUIPMENT MECHANIC
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The UP! App

The UP! App, the rapid-response app for industrial equipment repair and service – quickly connecting service requesters to service providers – is pleased to be a sponsor of FABTECH 2019.

When an industrial machine goes down, opening The UP! App on your desktop or mobile phone is your go-to solution to get

the problem solved, fast. Instead of spending time searching, calling, and emailing service providers, The UP! App puts you in control by quickly connecting service requesters like you to a network of experienced service providers.

The UP! App is not a downtime monitoring system; it's a rapid-response, easy-to-use platform which can be used on your desktop

or mobile device and is free to download from the Apple App Store or Google Play.

How Does The UP! App Work?

As a service requester, you may submit a request directly in the app or on your computer. Enter your equipment information, a description of the situation, and the current operational status of the machine. Before you

know it, you'll receive offers from qualified service providers with rates, ETAs, and quality ratings. Then you choose the one you want based on your needs and schedule your service – you also can chat with the service provider via the platform, phone, or email if there are any specific details that need clarification prior to service.

Is There a Catch?

There's no catch – it's completely free for both service providers and requesters, with no subscription costs or transaction fees for submitting bids or proposals, and no commissions on the work that you need. The UP! App is merely an open marketplace to make matches and scheduling simple.

How You Benefit:

Quotes for Service Fast

You have the ability to pre-load your industrial equipment into The UP! App to make requesting service even faster. Then, when your equipment needs service, you can select from your equipment list, describe the problem and quickly request quotes for completing your service call. Once your request for service is posted, you'll receive offers from OEMs, distributors, and independent providers, all competing for your business.

Compare Offers

You're in control when your machine goes down; The UP! App allows you to decide which provider works best for your needs, time frame, and budget. Having all quotes laid out in front of you makes the decision clear and simple. Once you accept the best offer, the service can get started.

Find Specialty Providers

If you have unique or hard-to-service machines, The UP! App is the best way to attract the most qualified people who can help with your service needs. Instead of searching endlessly, only qualified service providers will respond to your request, helping to get your machine up and running quickly.

How do I determine if I'm a Service Provider or a Service Requester?

You can be both! The dual role capability feature allows users to switch between being a Service Provider and Service Requester.

In Service Provider mode you can be matched to incoming service requests to explore new opportunities or connect directly with your existing customers. In Service Requester mode you can take advantage of the UP! network by choosing to send your service requests to all relevant providers or send only to your preferred vendors.

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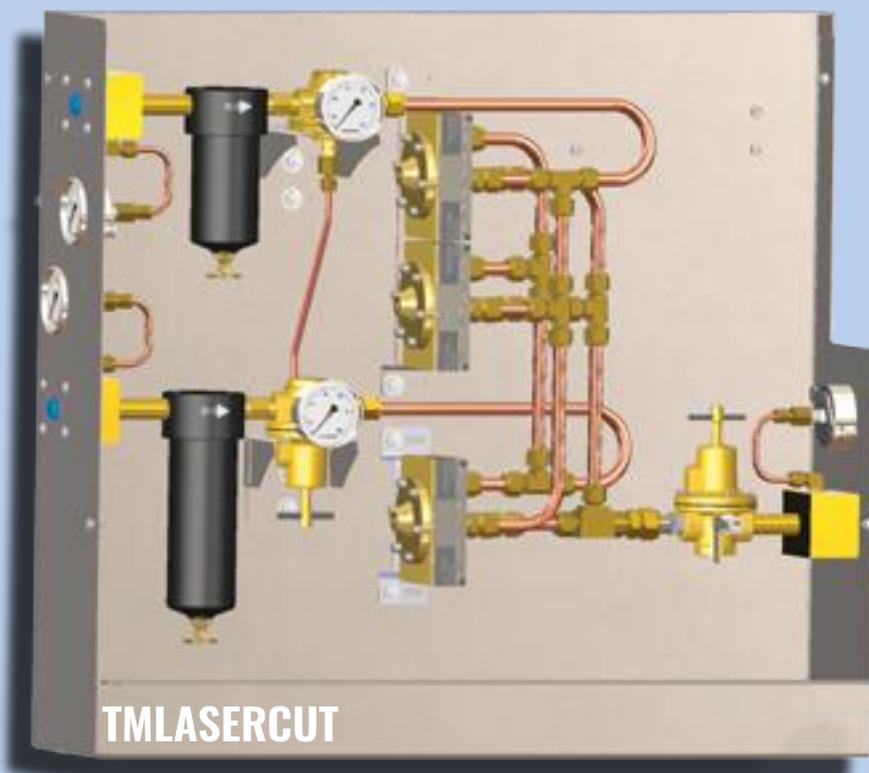
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3 Customer Success Stories from AIM Computer Solutions

Since 1991, AIM Computer Solutions has worked with automotive and related manufacturers and suppliers to improve operational processes with business software solutions.

AIM guides suppliers as they manage the operations of the complex automotive supply chain with three solutions:

- AIM Vision is the automotive manufacturer's one-stop ERP solution for managing their most crucial functions.
- AIM Mobility Apps provide real-time input and view of manufacturing processes from mobile devices on the plant floor.
- AutoCOR is a turnkey EDI and barcode label solution for automotive production part suppliers who use Epicor ERP.

Over the years, AIM has worked with numerous metal fabricators, metal stamping facilities, and related metal manufacturers. Here we highlight three customer success stories.

Sheet Metal Fabricator Hidaka USA

Management at Hidaka USA, Inc., a sheet metal fabricator, realized that the company's physical inventory processes were time consuming, draining resources, prone to manual errors, and disruptive to the production process. They determined to find an accurate and streamlined process.

By replacing its manual inventory processes with the AIM Mobility Physical Inventory App, the company reduced direct labor man-hours by 30% for the physical inventory. Now Hidaka USA has an automated and easy-to-use inventory process to count raw, WIP and finished goods with insightful audit records and documentation.

Paumac Tubing, LLC

Automotive supplier Paumac Tubing manufactures large and small diameter tubes, delivering bending, flaring, end-forming, cutting, welding, and expansion services to automotive OEMs and aftermarket distribution centers.

The company sought an improved process to automate the entry of non-EDI orders that it received via email or fax.

AIM Computer Solutions automated the information extraction process to eliminate tedious and error-prone manual entry, cutting the processing time by two-thirds. Now order details appear automatically in the AIM Orders module of the AIM Vision® ERP solution. By automating document capture and data extraction from emails and faxes, Paumac tubing gained full visibility into its non-EDI order process in real time.

The Grant Group

You can find parts made by the Grant Group in just about any automobile manufactured in the United States – from Cadillac and Hummer to Ford pickup trucks. The Grant Group makes metal stampings, clips, and assemblies for the automotive industry, and provides engineering, design, and die-building services.

Grant Group needed an accounting application to support its three companies with a single database, provide flexible reporting, and integrate with an automotive supplier-specific application.

Moving to the AIM Vision solution provided the Grant Group with the benefits of multiple company support, flexible reporting, enhanced accounting, visibility into its manufacturing productivity, and ease of integration.



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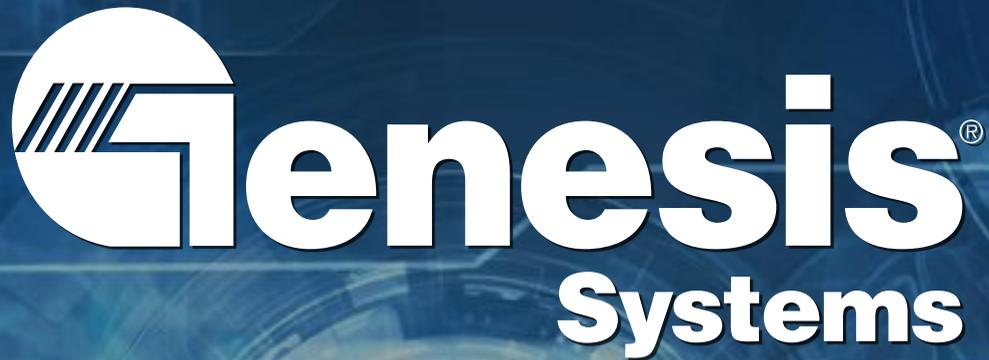
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Visit Hypertherm in South Hall Booth A4912 and North Hall Booth B17026

Hypertherm, a U.S. based manufacturer of industrial cutting systems and software, is highlighting the industry's only X-Definition® plasma cutting technology, its predictive waterjet technology, and the newest versions of its ProNest® and Robotmaster® software at FABTECH 2019. In addition, the company will

provide live demonstrations of its Powermax® air plasma and showcase its extensive line-up of specialty torches and consumables.

Hypertherm's X-Definition class plasma combines engineering advances and refined high definition plasma processes to deliver unmatched plasma cut quality on mild steel,

stainless steel, and aluminum. The company's HyPrecision™ Predictive waterjet pump includes technology designed to provide warning of upcoming maintenance needs. Hypertherm will have cut samples of both cutting processes available in the South Hall in Booth A4912.

FABTECH attendees can also see live demonstrations of ProNest 2019, Hypertherm's popular CAD/CAM nesting software for automated cutting, with more than a dozen new features and enhancements to make customers more efficient and profitable. Also, at this year's show, Hypertherm will demonstrate version 7.1 of its Robotmaster task-based robot programming platform. This new version contains more than 500 improvements, features, and bug fixes that make it possible for welding, cutting, painting, sanding and other process professionals to easily program industrial robots without having to buy or learn complex CAD/CAM software.

Information on Hypertherm's entire line of Powermax air plasma systems, along with its lineup of specialty torches and consumables, is available in the show's North Hall in Booth B17026. Activities will include multiple daily demonstrations of cutting, gouging, flush cutting, extended reach cutting, marking, and CNC table cutting. Hypertherm will have demonstration stations on hand so attendees can try out these various processes for themselves. Show attendees who cut with a Powermax on the first day of the show, which fell on Veterans Day this year, helped support Workshops for Warriors, a San Diego based nonprofit that provides vocational training to veterans and transitioning service members. Hypertherm will donate \$5 for every person who cut with a Powermax in honor of veterans on November 11th. In addition, attendees have an opportunity to win one of three Powermax45 XP systems on Monday, Tuesday, and Wednesday.

Hypertherm designs and manufactures industrial cutting products for use in a variety of industries such as shipbuilding, manufacturing, and automotive repair. Its product line includes cutting systems, in addition to CNC motion and height controls, CAM nesting software, robotic software and consumables. Hypertherm systems are trusted for performance and reliability that result in increased productivity and profitability for hundreds of thousands of businesses. The New Hampshire based company's reputation for cutting innovation dates back 50 years to 1968, with Hypertherm's invention of water injection plasma cutting. The 100 percent associate owned company, consistently named a best place to work, has more than 1,400 associates along with operations and partner representation worldwide.

Learn more at
hypertherm.com. ■

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Building the 21st Century Workforce

It's no secret that the new people entering the workforce are very different from those nearing retirement age. While this may present some challenges, it also offers opportunities for those fabricators and manufacturers able to adapt to shifting demographics, skill sets, and attitudes. This means making it a priority to have a globally competitive workforce

that is educated, diverse and motivated, and one that can meet the demands of an evolving digital economy.

Tomorrow's leadership exchange on Building Tomorrow's Workforce will cover the many challenges involved in hiring, managing and retaining a multi-generational workforce.

In addition, panelists will share their own strategies on how to succeed in the evolving workplace.

One of the panelists is Robb Tessier, National Director of Advanced Fabrication Technologies at Airgas, a leading U.S. supplier of industrial, medical, and

specialty gases. He plans to attack over-reliance on traditional practices in HR. As part of this, he will explain why relying on "this is the way we have always done it" on the personnel front can turn out to be a recipe for disaster.

"We are all competing for the same workload and customers globally," says Tessier. "Those companies that are the most innovative and quality conscious have the best opportunity to be successful."

He values the knowledge of the veteran workers but believes it is best harnessed in combination with younger generations. The most dynamic teams, he believes, are composed of men and women from different age groups and educational backgrounds. They all have different perspectives and experiences. When integrated, it can lead to innovation and high-quality standards.

He will highlight the fact that anyone can research problems on the internet and come to a rational decision. But big data, he believes, can augment the strengths of a multi-generational workforce in order to bring experience and newer technologies together in the right way.

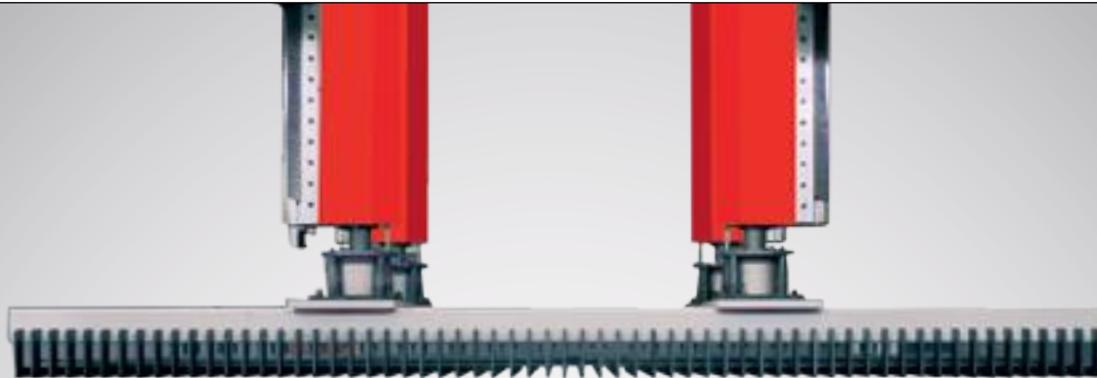
Tessier recommends that companies establish clear-cut career paths for their employees that lay out the steps needed to move on to the next level, and what needs to be done to be granted a pay raise. This approach, he thinks, can go a long way in transforming career growth from a subjective to an objective activity. During the panel, Tessier will cover how he has applied these principles in his own company to bring about greater success and a more fulfilled workforce.

"Putting multi-generational employees together in our 22-week apprentice program has delivered excellent results," he says. "We find college hires bring a modern technological viewpoint and seasoned veterans bring experience that blend together nicely. They help each other succeed, they find they need each other to resolve work projects to pass the class."

Learning to Adapt

FANUC America is a leading supplier of robotics, CNCs, and Robomachines with over 24 million products installed worldwide. Dean Steadman, CNC Education Program Manager at FANUC America, has very definite views on the demands of the 21st century workforce, as you will hear in tomorrow's panel.

"Manufacturing is changing at a rapid pace with the introduction of digital factories, new techniques, and innovation." Compounded by the problem of skilled workers reaching



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retirement age and the lack of applicants attracted to industry, manufacturers need to find ways to become more efficient. "Current and future employees must learn and adapt to the latest manufacturing technologies and skill sets," says Steadman.

To produce a more globally competitive workforce that can meet the demands of an evolving digital economy, it is vital to adapt to the trends and challenges inherent in managing a multi-generational workforce. However, with an aging workforce, the U.S. has become vulnerable. The rapid evolution of technology has dictated that to remain technologically advanced and globally competitive, manufacturers must embrace automation.

"The acceptance of advanced automation and digital manufacturing plays into an area that the younger generation has grown up with," says Steadman. "New employees who learn to use and manage new technology will help companies remain globally viable."

FANUC America has adopted several strategies to address its own workforce, as you will hear during the panel. For example, it has deployed staff in its CNC and robot divisions to develop products, training, student curricula, and recognized certifications to expose students to technology currently used by advanced manufacturers. It also assists schools and instructors with the implementation of technology courses into their academic programs, so they can learn how to use the same equipment used in the industry.

Another panelist lives and breathes workforce development. As Founder and CEO of Workshops for Warriors, Hernán Luis y Prado, runs a school that provides quality training in welding, plasma cutting, fabrication, woodworking, and other manufacturing skills for veterans and transitioning service members.

He will explain how there are presently 2.3 million well-paying U.S. manufacturing jobs unfilled each year. If nothing is done, he believes that in 10 years the demand will grow as high as 3.5 million. Workshops for Warriors is all about solving the shortage. Students earn nationally recognized credentials that allow them to obtain well-paying careers.

"The health of our advanced manufacturing sectors informs the designing, building and welding of components that are used on our country's ships, bridges, and machinery," says Prado. "Yet the average age of those doing that work is 59."

He likes to cite Apple co-founder, chief executive and chairman Steve Jobs, who once said, "Innovation has nothing to do with how many R & D dollars you have. When Apple

came up with the Mac, IBM was spending at least 100 times more on R & D. It's not about money. It's about the people you have, how you're led, and how much you get it."

That's why he's passionate about helping to build the workforce of tomorrow. Innovation is essential to the sustainability of America's manufacturing sector, but harnessing innovation requires a large capable and certified workforce.

The students at Workshops for Warriors receive hands-on training free of charge. Its school offers two primary programs: welding and machining. It teaches and certifies to the nationally recognized standards of the American Welding Society, National Institute of Metalworking Skills (NIMS), Mastercam University, SolidWorks, Immerse2Learn, and the National Coalition of Certification Centers (NC3).

Come hear the experts share their strategies at the Leadership Exchange-Building Tomorrow's Workforce, tomorrow at 11:00 AM in the Lakeside Center Ballroom to find out how to navigate the changing waters of shop floor personnel. ■



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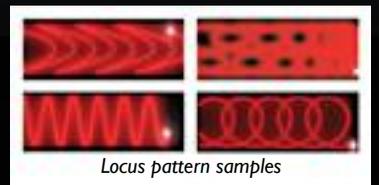
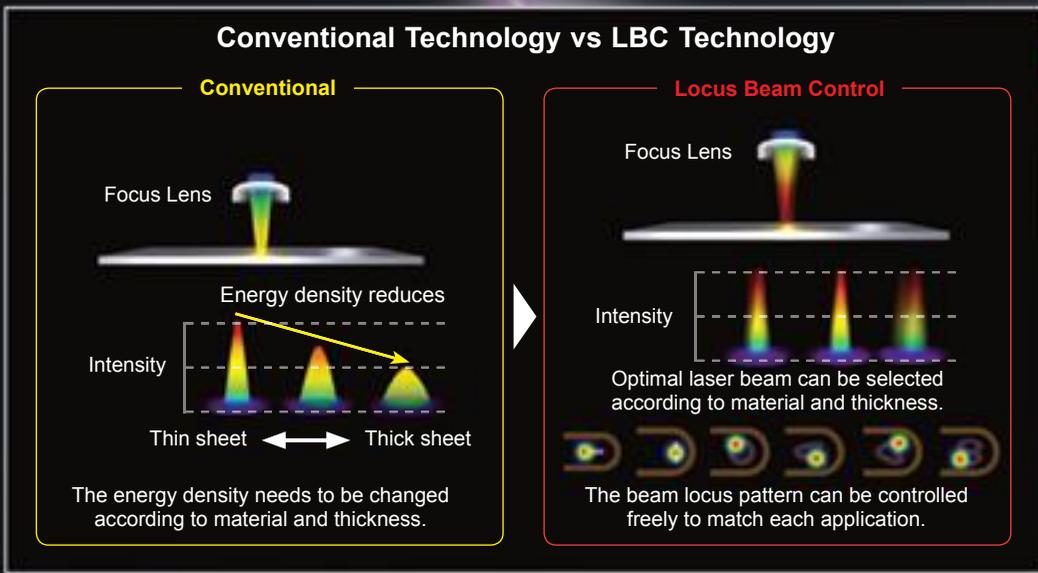
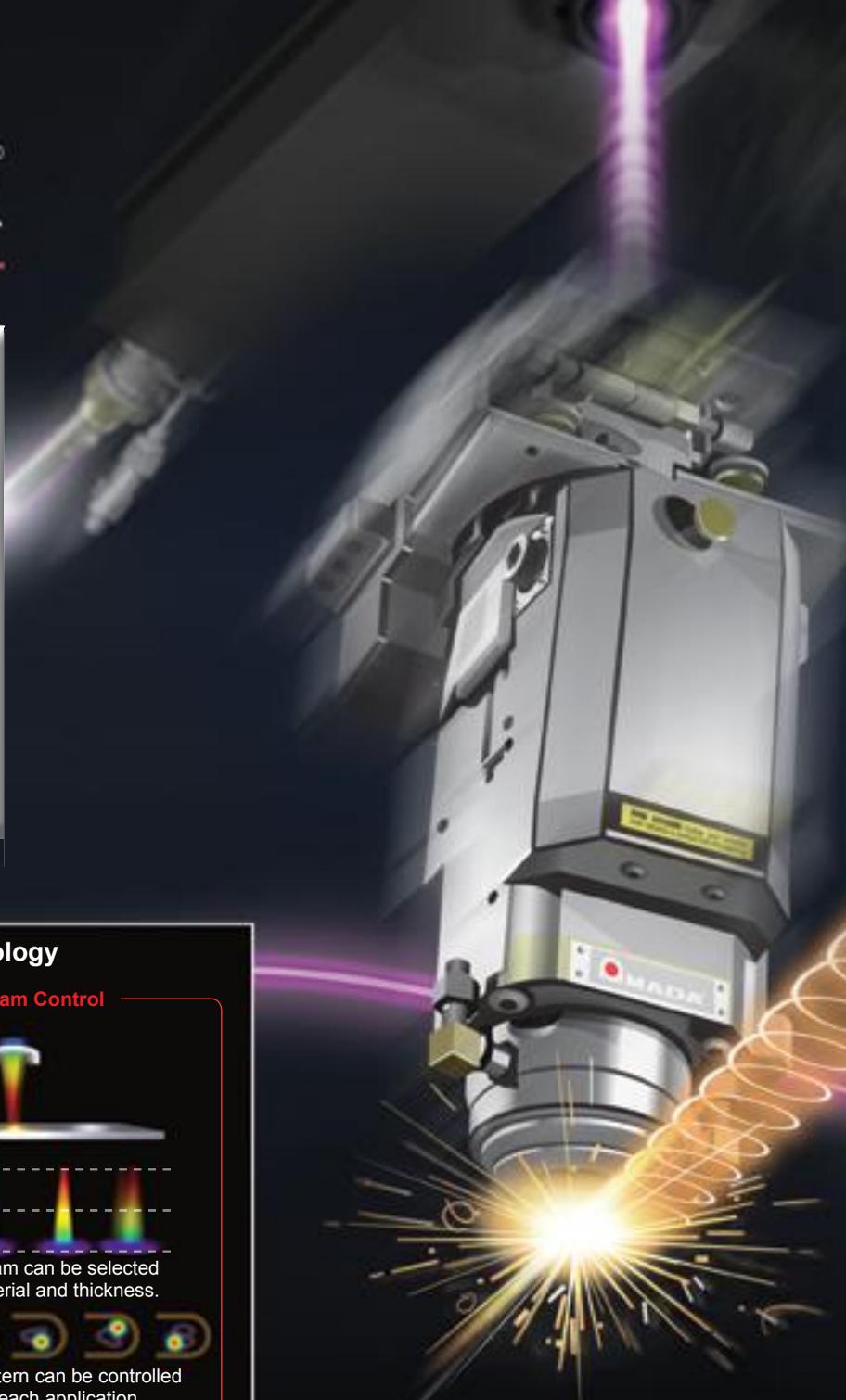
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 FUELS CUSTOMER
 GROWTH



VENTIS 3015 AJ
 will be ceremonially unveiled
 at FABTECH.

Revolutionary VENTIS Fiber Laser with Locus Beam Control

AMADA will introduce the world's first fiber laser cutting system with Locus Beam Control (LBC). LBC Technology can freely manipulate the laser beam to create an infinite number of locus patterns and greatly enhance cutting performance. In conventional fiber laser cutting systems, energy density reduces as material thickness increases, resulting in a lack of efficiency. In marked contrast, LBC Technology offers flexible beam pattern control matched to each application, while retaining high-efficiency cutting and high energy density. As a result, VENTIS achieves cutting speeds up to 3 times faster than a conventional 4kW fiber laser while producing superior edge quality.

AMADA's Carolina Technical Center and Manufacturing Center in High Point, NC will open in 2020.



North American **DEBUT**

North American **DEBUT**



The new HRB Series of Press Brakes will be produced at the Carolina Manufacturing Center.

- **HRB 1003 ATC** — The latest advancement in press brake technology combined with AMADA's patented Automatic Tool Changer (ATC) enables you to perform even the most complex tool setups in less than 4 minutes.
- **HRB 1003** — The new HRB Series of Press Brakes leverages AMADA's latest bending technology and a variety of production-enhancing features to provide an outstanding price/performance ratio.

North American **DEBUT**

- **AMADA's latest 9kW Linear Fiber Laser Cutting System** — will be ceremonially unveiled at FABTECH.
- **ENSIS 3015 RI** — 3kW Fiber Laser with an integrated Rotary Index that enables you to switch from flat cutting to tube or pipe cutting in less than 2 minutes.
- **EML 2515 AJ** — 3kW Punch/Fiber Laser Combination Machine that's equipped with a multi-purpose turret and the unlimited shape cutting flexibility of a fiber laser which gives you the flexibility to work with your customers to create more efficient part designs.
- **ENSIS 9kW + AMS 3015 CL** — The ENSIS Fiber Laser and AMS CL Automation are both manufactured in Brea, CA. ENSIS technology provides continuous processing of thin materials and thick plate without a cutting lens change or manual setup. The AMS 3015 CL is a modular system that allows you to easily expand your automation capabilities as future demands evolve.
- **HG 1003 ARS** — A Fully-Integrated Robotic Bending System with a 7-axis robot, Automatic Gripper Changer (AGC), and Automatic Tool Changer (ATC) with patented AMADA tooling — that will enable you to achieve high levels of unmanned productivity.

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Metalformers Build Own Skilled Workforce Solution

Precision Metalforming Association develops innovative online training platform to tackle industry skills gap and support sector's growth.

Over the long, strong history of the manufacturing industry in the United States, a single word has characterized its progress: innovation. Manufacturers have engineered

solutions to some of the country's biggest challenges, constantly creating processes and products to meet the moment.

So it should be no surprise that today, as manufacturing faces the dual industrial challenges of shifting demographics and evolving technology, leaders in the sector

are innovating their way to solutions – and success.

Right now, the American economy is in the middle of the second-longest expansion in our nation's history, and the manufacturing industry is an engine of this expansion. There is no doubt that the industry has a big opportunity here, but companies will need to adapt and advance in order to meet it. If history is any indication, a solution is right around the corner – or maybe just a mouse click away.

A Custom Solution for a Common Challenge

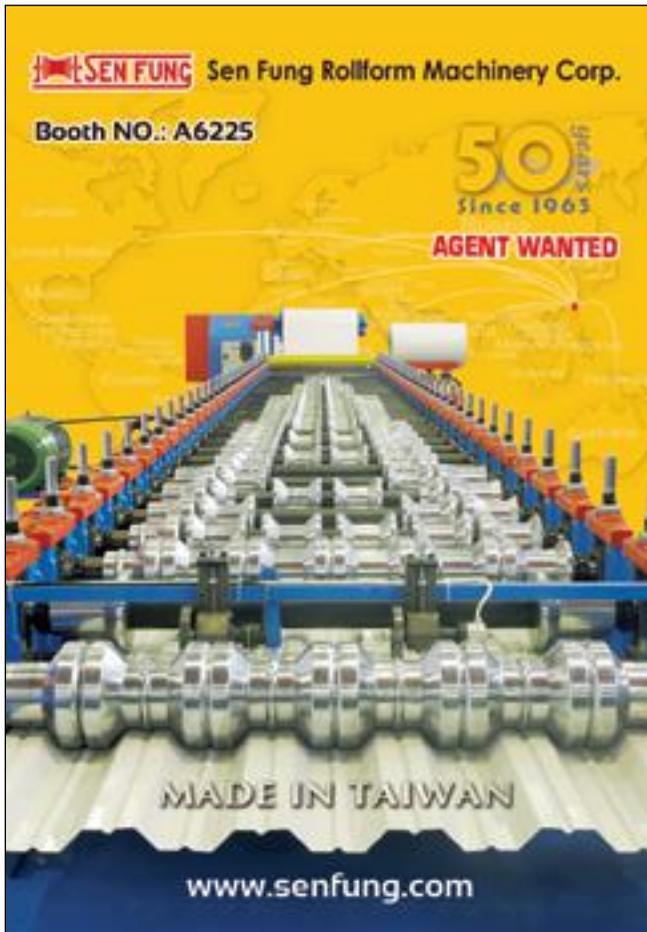
In October of 2018, the Precision Metalforming Association (PMA) launched METALFORM EDU, the only online training program specifically designed for workers in the metalforming industry. The platform, which can be found at pma.org/metalformedu, is user-friendly and packed with easy-to-follow demonstration videos. Companies and employees can get started quickly on the platform by using the nearly 30 PMA-designed learning paths with recommended courses for key jobs and skill sets needed in the metalforming industry. A deeper dive reveals more than 550 courses in both industry-specific and broad business and professional skills. Each course includes interactive eLearning content, a downloadable study guide, and a graded final assessment.

Under the direction of PMA President David Klotz, the platform is constantly evolving, incorporating new courses, adapting different license options and even including additional languages. Klotz, who took the reins of the Association in February of this year, is passionate about assisting PMA members and others with the industry-wide challenge of finding – and keeping – skilled workers.

“The recruitment, training and retention of workers is our members’ top priority,” Klotz says.

And it's no wonder. The industry faces a daunting skills gap, with some half-a-million manufacturing jobs currently open in the United States and more openings anticipated as older workers, who make up the bulk of the sector's employees, advance toward retirement. Experts predict that more than 2.6 million baby boomers will retire from manufacturing jobs over the next decade.

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TRUST BLUE

continued on p. 22

WEDNESDAY, NOVEMBER 13

SCHEDULE-AT-A-GLANCE

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 MANUFACTURING	NEW! F90: The ROI of 3D Printing: Analyze the Cost of Implementing 3D Printing for Your Business Room S403A	NEW! F100: Impact and Quality Considerations for Additive Manufacturing Room S403A	F110: Lasers and Additive Manufacturing Processes Room S403A		
AUTOMATION	NEW! F91: Effective Automation for Joining in Emerging Technologies Room S401D	NEW! F101: Integrating Robotic Automation into Your Process Room S401D	NEW! F111: Which Robot Application is Right for Your Needs? Room S401D	NEW! F121: Automating the Material Handling Process - Why Now is the Time Room S401D	
CUTTING		F102: Advantages of Waterjet Cutting Machining Technology Room S404A			
FINISHING	C90: Architectural Coatings - Today and Future Room S501A	NEW! C100: Conveying Effectively Room S501A		NEW! C120: Quality Still Counts Room S501A	
	C91: Optimizing Powder Operations Room S501BC	NEW! C101: Mastering Batch Powder Coating Operations Room S501BC		NEW! C121: Powder Coating Troubleshooting Room S501BC	
	NEW! C92: Creative Finishing Solutions Room S501D	NEW! C102: Choose Your Weapon - Finding the Right Liquid Applicator Room S501D		NEW! C122: Automation Roadmap for Liquid Finishing Operations Room S501D	
FORMING & FABRICATING	NEW! F93: A Modular Approach to Turning Non-Value-Added Time on a Press Brake into Productive Time Room S502A	F103: Press Brake Safety Room S502A	NEW! F113: Alternative Forming Processes Room S502A	NEW! F123: Press Brake Hurdles Room S502A	
	F94: Roll Forming: Press Tonnage Rating and Welding Systems Room S502B	F104: Tube & Pipe Lubricants, Bending and Case Studies in Tube Field Failures Room S502B	NEW! F114: Alternative Techniques for Annealing, Testing and Grinding Abrasives Room S502B	F124: Coil Processing: Slitting Thin Materials, Leveling & Deburring Room S502B	
LASER	AWF100: Laser Welding Workshop (8:00 AM - 12:30 PM) Room S403B			NEW! F115: The Use of Additive and Subtractive Lasers in Applications Room S403B	
LEAN	NEW! F96: Lean Principle: Go to Gemba Room S401A	NEW! F106: Lean Tools: Lean Production Shop to a Job Shop Room S401A			
MANAGEMENT	F97: Ensuring Tomorrow: How to Effectively Choose and Prepare Your Successor Room S404BC	NEW! F107: Win the Inner Game: Free Yourself of Overwhelm and See Your Highest Potential Come True Room S404BC	NEW! F117: Diagnose Your Business: How to Free Yourself from Budget Limitations by Finding and Unlocking Hidden Money in Your Operations Room S404BC	F127: Enable the Transition to Next Gen - Family Business Room S404BC	
MARKETING & SALES	NEW! F98: Digital Recruiting Strategies & Data for Continuous Improvement Room S405A	F108: Business Builders: Make Business Development a Competitive Advantage Room S405A	F118: Protecting Original Design: The Importance of IP in Metal Forming Room S405A	NEW! F128: A Marketing Framework: From Lead to Sale - Tools & Tips for Fabricators & OEMs Room S405A	
SMART MANUFACTURING	NEW! F99: The Smart Factory & Feasibility with Case Studies Room S402B	NEW! F109: A.I. for Predictive Manufacturing: Zero-Downtime, Zero-Defects Room S402B	NEW! F119: Prevent Digital Failure and Benchmark Your Performance Room S402B	NEW! F129: Smart Manufacturing on Predictable ROI Room S402B	
STAMPING	NEW! S90: Stamping-1 Room S503A	NEW! S100: Stamping-2 Room S503A		NEW! S120: Stamping-3 Room S503A	
	NEW! S91: Sensors-1 Room S503B	NEW! S101: Sensors-2 Room S503B		NEW! S121: Quality & Tooling Room S503B	
WELDING FABRICATION		NEW! W100: Optimization of Welding Documentation and Continuity Efficiency Using Computer Software Room S404D			
WORKFORCE DEVELOPMENT	NEW! F217: Operational Excellence for Significant and Sustained Performance With Incentive Pay Room S401BC		NEW! F219: Leading Innovation & Change Initiatives in Your Organization Room S401BC	NEW! F220: Manage, Mentor and Develop Your New Workforce & Staff for The Future Room S401BC	
WELDING					
SEMINARS	W11: AWS Educational Overview of Welding Codes and Standards - Day 2 Room N133			8:00 AM	5:00 PM
	W14: "Welding" Don't Be Afraid to Ask Room N134			8:00 AM	4:00 PM
	W15: Stainless Steel Welding D1.6 Structure Room N132			8:00 AM	4:00 PM
CONFERENCES	W16: 5th International Electron Beam Conference - Day 2 Room N227B			8:00 AM	5:00 PM
CAREER PATH WORKSHOPS	W19: Development of a New Standard for Metal Additive Manufacturing: AWS D20.1/D20.1M, Specification for Fabrication of Metal Components Using Additive Manufacturing Room N131			9:00 AM	11:00 AM
PROFESSIONAL PROGRAM	W25: SESSION 10: Plenary Session Rooms N138-N140			8:00 AM	9:30 AM
	SESSION 11: In-Situ Measurement Techniques Rooms N138-N140			9:40 AM	12:00 PM
	SESSION 12: Honorary Symposium for Prof. D. Olson I Rooms N138-N140			9:40 AM	12:00 PM
	SESSION 13: Industrial Technology I Rooms N138-N140			9:40 AM	12:00 PM
	SESSION 14: Process Sensing & Control Rooms N138-N140			1:40 PM	5:00 PM
	SESSION 15: Honorary Symposium for Prof. D. Olson II Rooms N138-N140			1:40 PM	5:00 PM
	SESSION 16: Weldability Rooms N138-N140			1:40 PM	5:00 PM
RWMA SCHOOL	W22: RWMA Resistance Welding School - Day 2 Room N227A			8:00 AM	5:00 PM

Detailed Education Program session descriptions, speakers, pricing, room locations and more can be found at fabtechempo.com/edu.

■ = Basic ■ = Intermediate ■ = Advanced

3 Customer Success Stories

continued from p.10

Read more from Jeffrey, AIM Computer Solutions' MRP Software Consultant, in the FATBECH blog [How the Right ERP Configuration Delivers Traceability in Manufacturing at fabtechexpo.com/blog](http://fabtechexpo.com/blog).

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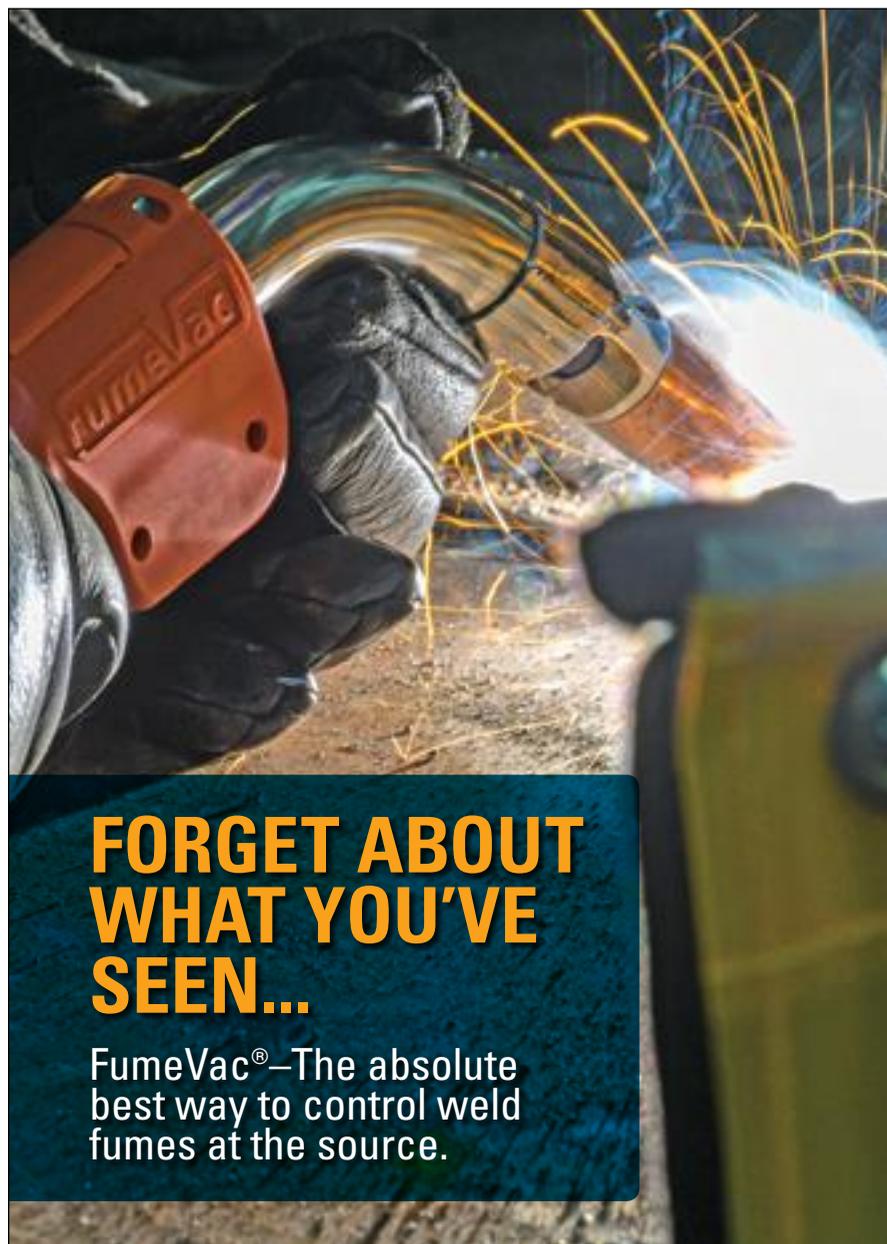
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continued on p. 22

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Metalformers Build Own Skilled Workforce Solution

continued from p. 18

A recent industry survey showed that a lack of workforce capacity forced one quarter of manufacturing companies to turn away new business in the first quarter of this year.

And that impacts the whole industry – and larger U.S. economy. Key findings from the 2018 state of manufacturing analysis by accounting and consulting powerhouse Deloitte predicts significant industry growth over the next decade. However, the study also suggests that as much as \$454 billion in additional manufacturing value could be lost in the year 2028 alone, if the industry is unable to fill the anticipated open jobs.

“METALFORM EDU reflects PMA’s leadership in tackling the vitally important challenge of recruiting and training a high-caliber workforce now and in the future,” Klotz says.

Speaking Their Language

With majority funding from the PMA Educational Foundation, the unique METALFORM EDU program helps companies build their own talent pipeline by providing access to the right training, at the right time, in the right format for employers and employees.

“Younger workers, like generations of workers before them, want to know something about what they are going to be doing before they do it,” says Bill Jordan, Human Resources Manager at Larson Tool & Stamping in Attleboro, MA. “But, new employees today do not necessarily want to read a manual or sit down with an in-person instructor. They are accustomed to researching and learning at the computer, and at their own pace. METALFORM EDU allows them to get the information they need in a format that is comfortable and familiar to them.”

The platform is also convenient and cost-effective for employers.

“It’s great that we don’t have to send people out for a day-long seminar,” continues Jordan. “And, with the built-in quiz component, we can still know that participants have really mastered the material.”

The coursework available on the platform is not specific to new hires. In fact, as the team at Henderson Stamping & Production, Inc. found out, it can be just as useful for experienced employees. The Henderson, TN-based company is planning a significant expansion that will involve bringing on a number of new workers.

“METALFORM EDU has helped us assess and increase the knowledge base of our existing employees,” says Stephanie Ray, the company’s Human Resources Manager. “These are really experienced, talented people, but also people who have been in the industry for a long time. Some of them use industry jargon and other unofficial terms and language. That’s fine until you want to bring in new employees – and you don’t want to have a lot of confusion. So, right now, we’re using these training courses to unify our staff around common terms and best practices so that we’re all on the same page as we build and grow for the future.”

Ray also expects to use the METALFORM EDU platform with the company’s new hires. “The struggle with the labor pool is real,” she says

ruefully. “Being able to offer the training that people need in a way that is less expensive and more practical for our company is a big benefit to us.”

Early Signs of Success

PMA members and others who have tried the METALFORM EDU platform and coursework are reporting positive results.

Henderson Stamping & Production, Inc.’s Ray notes that all of the company’s employees who have participated in the online courses have been impressed. “Our employees said that the classes have good information and that they learned something new,” she says. Just as important, Ray reports that the training is having an impact on the company’s work product. “Our group leaders say that they are seeing improved performance from employees who have done the training.”

“I personally have taken over 30 courses on the METALFORM EDU platform,” says Larson Tool & Stamping’s Jordan. “If people take a look at the options, they will be surprised at how many there are that are truly useful to anyone who wants to improve in their manufacturing industry career. I’m excited to get this out to as many people as I can.”

More information about the METALFORM EDU platform and course catalogue is available online at pma.org/metalformedu. Use the license calculator to choose an appropriate plan for your workforce training needs. ■

FUMEVAC Weld Fume Extraction at the Source

continued from p. 21

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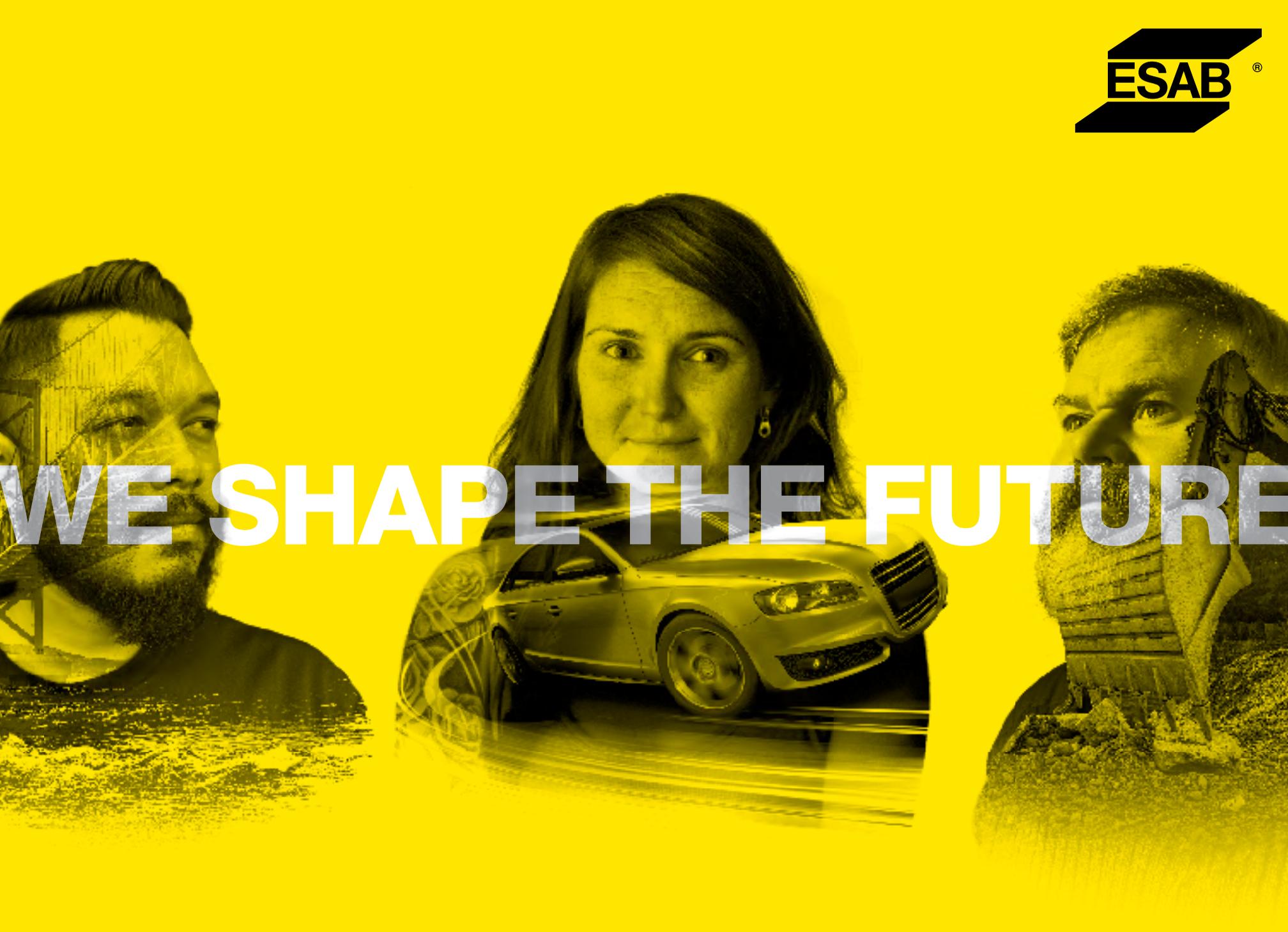


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A photograph of three people—a man on the left, a woman in the center, and a man on the right—looking towards a silver car. The car is positioned in the center of the frame, and the background is a bright, yellowish-green gradient. The overall image has a high-contrast, vibrant aesthetic.

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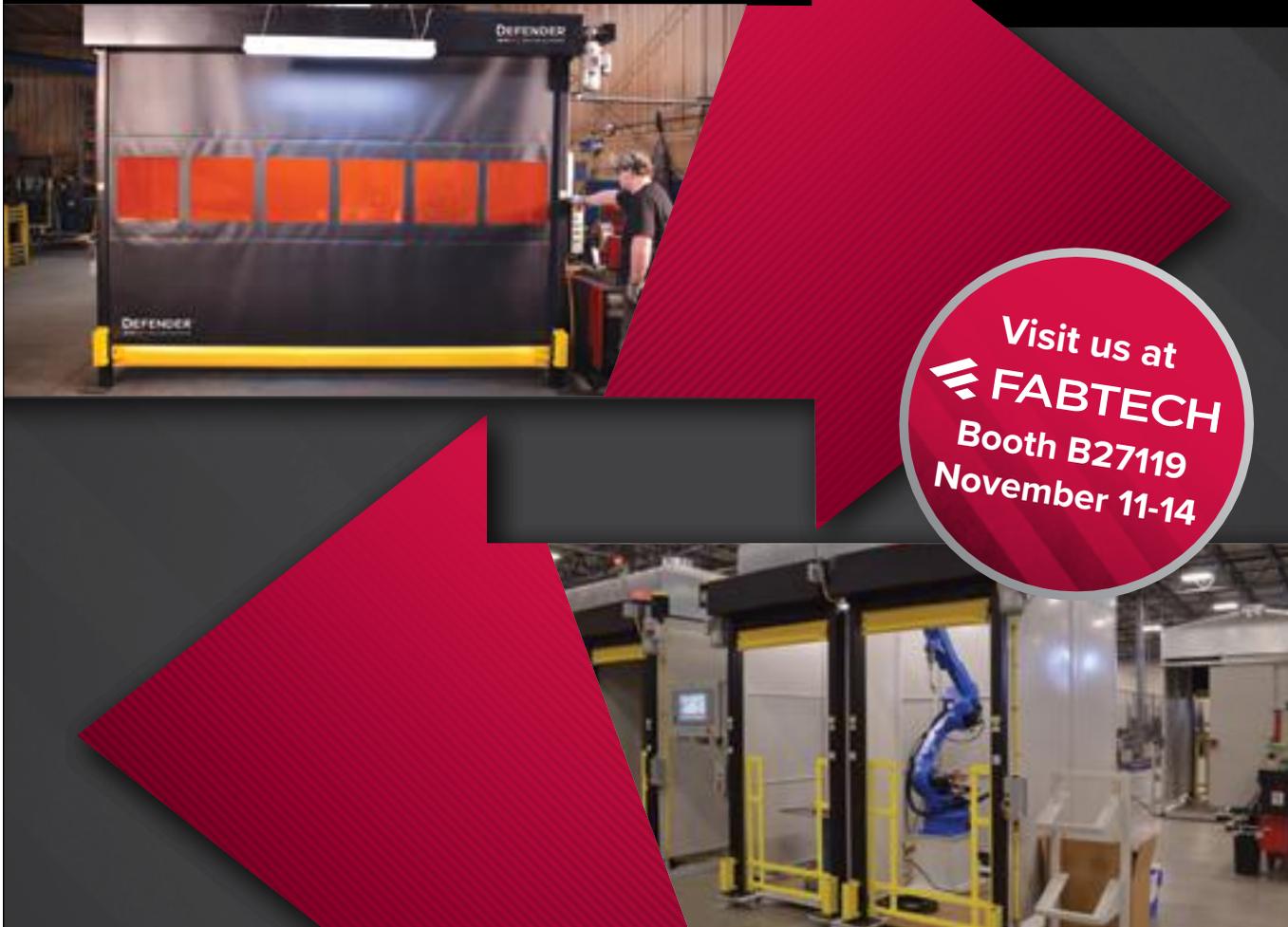
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B31026

Scam Me if You Can

continued from p. 1

themselves from fraud. Due to his history as a scammer on the FBI's Most Wanted list (colorfully portrayed by Leonardo Di Caprio in the Spielberg movie *Catch Me If You Can*), his ability to teach others how to avoid fraud is second to none.

It became very clear within a few minutes of starting his talk that Frank Abagnale knows exactly how scammers work. Through a series

of real-life anecdotes, stories and his own experiences in conning millions out of unsuspecting victims, Abagnale revealed the very latest tricks that today's scammers, hackers, and con artists use to steal money and personal information, whether online, over the phone, or face to face.

Charity scammers, for example, know how to tug at the heartstrings. They engagingly

spin heartwarming but fabricated stories in person, over the phone, via email, or in places like online fundraising sites. There was the one about a homeless man helping a couple who ran out of gas. All three parties were in on a scam that raked in \$400,000 before they all disappeared. Abagnale's advice: It's important to be careful when donating to causes online; researching the fundraiser (preferably



personally) are two of the best ways to avoid getting burned.

Online dating apps, said Abagnale, have become a wild world of opportunity for scammers. Catfishing has become commonplace – where someone is lured into a relationship by means of a fictional online persona. Over the years, romance scammers have stolen millions of dollars from unsuspecting people looking for love. Abagnale revealed that the tally has gone as high as \$220 million in a year. In one case, a lady was contacted by a handsome, soft-spoken man who claimed to be a war veteran. After going out for a few weeks, he convinced her to lend him her Audi and some money. He spent the money on gambling and the car was never seen again.

And with so many high-tech automobiles hitting the roads, cyber thieves are finding inventive ways to hack vehicular systems. Some lurk near vehicles to record digital codes from car fobs when owners are locking up. They can then electronically transmit that code to be able to enter the automobile illegally and take whatever is inside. This is a favorite trick of criminals looking to score expensive laptops and tablets as well as any suitcases or valuables they notice in the vehicle.

Hackers can even take over the AC, radio and other controls of vehicles from outside. As cars with self-driving and autopilot features are becoming more common, it is now possible for a criminal to remotely take control and drive a car away. It is just too easy, these days, due to the use of wireless networks and computerized systems, to maneuver around the lax security measures typically provided for vehicles. Abagnale explained the steps to take for protection.



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Social media, he added, has become an identity thief's treasure trove. Criminals look through Facebook and other social media postings to gain a picture of someone's life. This allows them to craft the perfect email scam to trick even the most careful people. Take the case of a person who went for drinks with a golf buddy. A thief used this information and other data posted online about the meeting with the golf buddy and about a cause important to him to devise an email scam that seemed to be coming directly from the golf buddy he had met the other day. The email detailed the bar where they had met, and other items pulled from his online postings to complete a truly convincing picture of a good friend following up from a recent meeting.

Passwords Are Not Enough

Some assume that passwords act as a safeguard against attack. That is true to some degree. However Abagnale said that passwords can be hacked even when they require re-authentication. SIM swapping is an approach where hackers contact a phone carrier claiming to be the victim. They manage to pass any security checks by doing online research. That enables them to redirect the victim's SIM card and incoming texts to their own phone, easily getting the security code needed for reverification from online accounts.

It wasn't only online and digital scams or cybercriminals that Abagnale warned about. He brought up the fact that DNA testing companies have been selling biological data to third-party companies. As well as scammers, this puts the individual's biology at risk of falling into the hands of health insurance companies and employers who could use this information to discriminate against people; perhaps to turn them down for jobs or coverage.

Abagnale's simple but counterintuitive rules provided plenty of guidance against scams. Perhaps one of the biggest errors, he said, is to completely trust computerized security or to think you are not vulnerable to attack.

"If you believe you have a foolproof system, you have failed to take into consideration the creativity of fools," said Abagnale. ■

IVEC Ultra continued from p. 24

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Although manufacturing has seen a boom in recent years, welding, like other sectors, struggles in one critical area: Securing a highly skilled workforce to keep up with the demands

of advanced manufacturing. While welding affects about 50% of gross national products made in the U.S., companies still struggle to find workers equipped with essential skills. To make matters worse, the American Welding Society estimates the U.S. will need more

than 450,000 welders by 2022 to meet the demands of the industries they serve.

College as the “only option” for success has not helped either. For the past 30 years, parents and school counselors have steered students in the direction of a four-year degree, urging them to forego careers in trades and industry. When you compound the damaged image of skilled trades jobs with baby boomer retirements, technology advancements and lack of interest among youth, the shortage of skilled welders deepens.

New opportunities to solve these problems are on the horizon.

Stakeholders in the industry – business, academia, government and associations – are working together to help curb the skills gap challenge and ensure welders have the skills needed to perform successfully.

Earlier this year, Lincoln Electric and Tooling U-SME announced plans to broaden workforce education for the welding sector by making U/LINC – Lincoln Electric’s flagship welding curriculum platform – more user-friendly and accessible to industry and educational institutions. The new partnership will allow Tooling U-SME to administer U/LINC, leveraging its extensive access to industry and academia, as well as its competency-based learning and development solutions.

Powered by Tooling U-SME’s learning management system, U/LINC improves learning and student engagement, while giving management and instructors control over their programming.

Developed by 35 of the industry’s top welding instructors, U/LINC contains more than 18,000 pages of curriculum resources connecting welding theory, practice, and knowledge in one place. Subscribers to U/LINC can easily search, download, and print out lesson plans, class assignments, presentations, group-based activities and more with in-depth directions, tips and teaching strategies that leverage Lincoln Electric’s more than 100 years of welding training experience.

The latest collaboration between Lincoln Electric and Tooling U-SME is crucial. Not only are the partners able to reach a critical mass of instructors and training authorities, they can directly develop today’s and tomorrow’s welding workforce and ensure users learn from the latest industry standard curriculum.

To learn more about the U/LINC curriculum platform, visit <https://education.lincolnelectric.com/ulinc> ■

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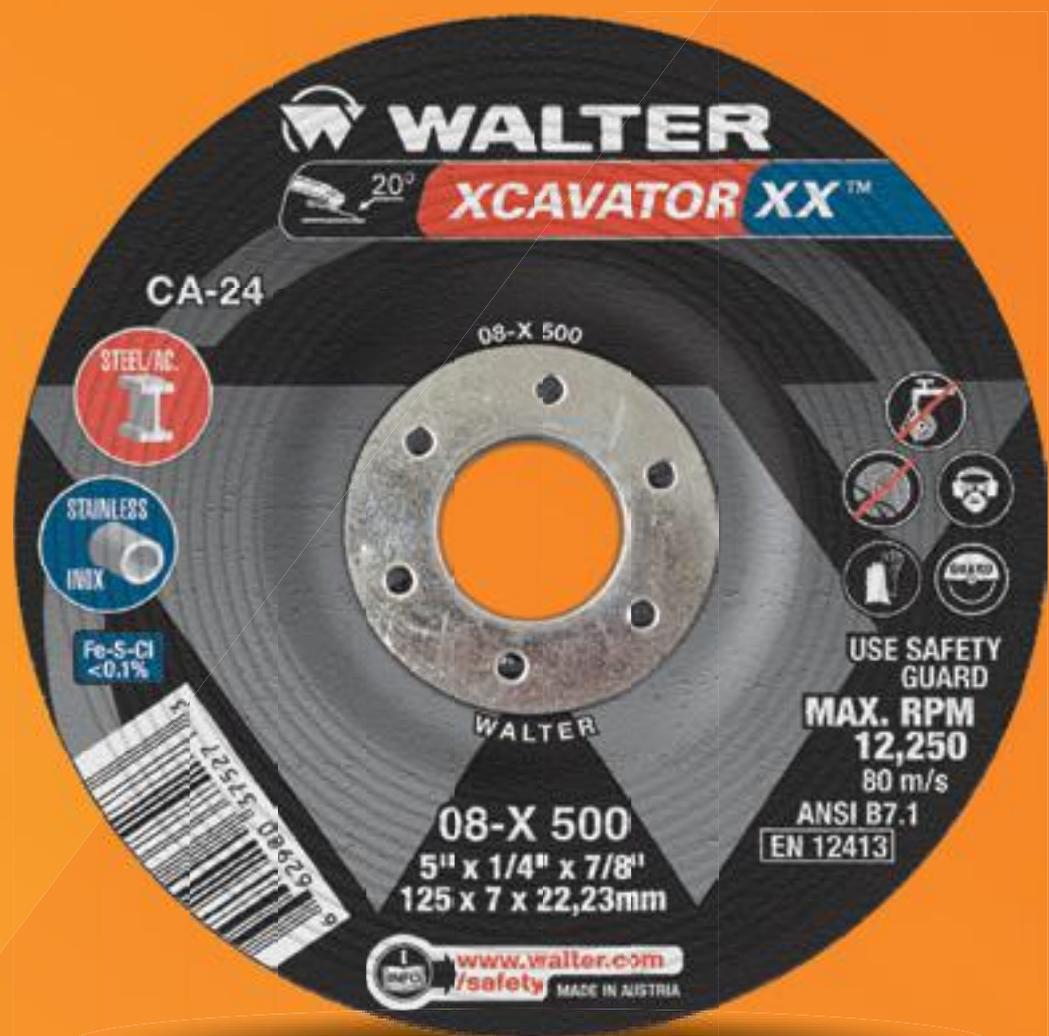
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