



# DAY 4

THURSDAY  
NOVEMBER 14, 2019

THE OFFICIAL FABTECH PUBLICATION



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# SHOW DAILY

## TODAY'S EVENTS

### Leadership Exchange: 21st Century Workforce — Building Tomorrow's Workforce

11:00 AM – 12:00 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)

## Mythbuster Delights FABTECH

FABTECH attendees were treated to an outstanding keynote yesterday from animatronics engineering expert Grant Imahara, a former host on DiscoveryChannel's *MythBusters*. He told tales of how he used his electronics and robotics expertise during his time on that show, as well as his nine years working behind the scenes creating special effects for blockbuster after blockbuster. He is currently consulting for Walt Disney Imagineering, working on next-generation robots to go into Disney's theme parks around the world.

### Behind the Scenes at MythBusters

For almost a decade, Imahara was a host of *MythBusters*. Using a blend of science and fun, he put hundreds of urban legends to the test, sometimes with explosive results. He had the audience laughing as he told anecdotes from his days on that show.

The FABTECH crowd heard story after story, each one wilder than the last

- The time he swam with sharks
- Hanging from the skids of a helicopter
- Firing cheese out of a cannon into the San Francisco Bay
- Allowing 25 tarantulas to crawl on his head
- Dropping a BMW from an aircraft
- Slicing a car in half using a rocket sled
- Destroying so many cars he's stopped counting

While all of this was lots of fun, he said it was all in the name of science.

Imahara reflected on the tools and machines that he designed and built on his science-based reality TV show. He made the point that the activities of his former line of work present many similarities to that of engineers, fabricators, and software developers.

"I want to share some of the things I've learned from 10 years of Mythbusting that are applicable to problem solving in many other fields," he said. "We made things that no one had ever made, few people have thought of, and along the way solved dozens and dozens of problems."

He related that kind of work to the tasks engineers, manufacturers, and fabricators face every day. Innovation, he stressed, starts with creativity. Whatever field you happen to be in, creativity is required to deal with the challenges that life throws at you. Being on TV or in movies might provide more fame and recognition, but his work boiled down to addressing technical and engineering problems. This, he said, is no different from the work done every day by thousands of technicians and engineers across the nation. It's the attitude toward it that counts. If you treat every task and every day as a new adventure, work can be transformed from the daily grind into a fulfilling activity.

For Imahara, that adventure began with his first Lego set, given to him by his parents at age three. Little did his mom and dad know what they had unleashed. He used it constantly to find new ways to build things with limited resources.

"Lego is an amazing tool for innovation; it makes you figure out how to use what you have to make what you don't have," he said.

The Lego of his day was quite different to that of today. Back then, it was only composed of square and rectangular blocks of a few different sizes. You had to be creative about how to put your blocks together.

"This kind of challenge is engineering at its core," said Imahara.

He had to learn step-by-step the basics of how to put those blocks together. Gradually, he figured out how to go beyond the basics and how to take simple Lego pieces to new places.

"Not unlike the Matrix, there are rules: some can be bent, others can be broken," said Imahara.

After his initial schooling in the fundamentals of Lego, he attended school with an enthusiasm for mathematics and science. He went on to earn a Bachelor of Science degree in Electrical Engineering from the University of Southern California and is a Senior Member of the Institute of Electrical and Electronics Engineers (IEEE).

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FABTECH's marketing-leading events take place at different times of the year and in different locations across North America.

### 2020

Mexico City, Mexico | May 12-14

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

Toronto, Ontario Canada | June 14-16

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### 2023

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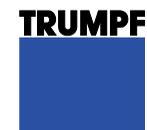
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# Women of FABTECH Breakfast

Yesterday's Women of FABTECH Breakfast served up two excellent presentations. The first discussed how women could more easily keep up with technology trends. It was delivered jointly by two women who have carved out successful careers in manufacturing: Susanne Lauda and Gretchen Zierick. They presented the same theme, but from two different

perspectives – that of a major manufacturer and a small job shop. This made it very clear that keeping up with technology applies to everyone, from the largest corporation to the smallest startup.

Susanne Lauda is Director of Global Advanced Manufacturing Technology at AGCO Corporation, one of the largest producers of agricul-

tural equipment. "At AGCO, we do not go for the shiny new thing, but instead look internally for areas that can benefit from the latest technologies, and then select what gives us the best return on investment," she said.

From Industry 4.0 to artificial intelligence and virtual reality, manufacturing as we know it is undergoing a major revolution – one

that impacts companies large and small. The speakers animatedly discussed some of the changes they've made within their organizations to keep pace with today's manufacturing advancements. They also shared tactics companies of all sizes could incorporate into their own organizations.

AGCO, for example, is best known as being the first company that used Google Glass smart glasses on a large scale on the shop floor to display work instructions or assist during quality inspection steps. In addition, the company has started optimizing its line layouts by digitally simulating operations. This is similar to the concept of the digital twin, which is used to provide a model of a large piece of equipment that is a digital replica of the real thing. The company has implemented a wealth of new technologies to improve efficiency and productivity. It relies on automated guided vehicles (AGVs), robots, digital picking aids, the latest scanning and tracking devices, and 3D printers, to name a few.

For those worried about cost, she had some good news. "Not every disruptive technology comes with a hefty price tag," said Lauda.

She gave the example of a cobot (collaborative robot). If installed in the right area, she found, it can pay for itself within a few months. However, she added, it is advisable to engage the workforce before making such decisions. Only if they buy into new technology will it be successful.

Further, AGCO has a professional women's network called AGWN that has been in existence for many years.

"The biggest benefit of having more women in manufacturing is a larger talent pool to choose from," said Lauda. "I cannot even think of any job that cannot be done by women, especially now that we have all these new technologies that eliminate physically challenging and repetitive operations."

Gretchen Zierick, President of Zierick Manufacturing, co-presented with Lauda. She runs a 100-year-old family owned small manufacturer of electrical connectors. Like Lauda, she offered tips on how to cost-effectively introduce technology.

"We always try to invest inexpensively in new technology," said Zierick.

When 3D printers came out, for example, the company bought one for \$2,300. It paid for itself in the first week as it was used to make temporary replacement parts for equipment in the plant. Zierick Manufacturing also invested in vision systems early on and slowly put them on every press as well as on its plating line. Then it added a Tormach CNC machining center, which was much cheaper than the

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# CCAI Announces New Education Initiatives

## New Foundation to Increase Education and Training Opportunities

The Chemical Coaters Association International (CCAI) has established an education foundation to support education and training in the industrial finishing and coatings

arena. The Chemical Coaters Association International Finishing Education Foundation (CCAIFEF) strives to develop and deliver effective and affordable educational and training opportunities that support the industrial finishing and coatings industry.

“Through CCAI’s Finishing Education Foundation we will expand our reach into educating

the industrial finishing and coatings industry, and work to recruit the next generation of employees,” shared Anne Goyer, executive director. Programs that will benefit from support of the foundation include Workshops for Warriors, Women in Finishing, the Association’s extensive scholarship program, online education, and more.



CCAI and CCAIFEF will work closely together to develop programming and secure funding to support the Foundation’s mission. Leading this effort are the officers of CCAIFEF’s founding Board of Directors:

**President, Sam Woehler,**  
George Koch Sons LLC

**Vice President, Victoria Gelling,**  
Sherwin-Williams

**Secretary/Treasurer, James Malloy,**  
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## CCAI Training Manuals Available in Español

CCAI recently began the process of translating its popular line of training manuals into Spanish. The CCAI Board of Directors approved the translation of all five existing manuals, a project expected to be completed in the first half of 2020. Manuals slated for translation include: System Design for Industrial Finishing Applications, Powder Coating for Industrial Finishing Applications, Pretreatment for Industrial Finishing Applications, Liquid Coatings & Equipment for Industrial Finishing Applications, and Electrodeposition.



While previous editions of the pretreatment and powder coating manuals had been translated, these will be the first Spanish versions for the system design, electrodeposition and liquid coatings and equipment manuals. Anne Goyer, CCAI’s Executive Director, notes,

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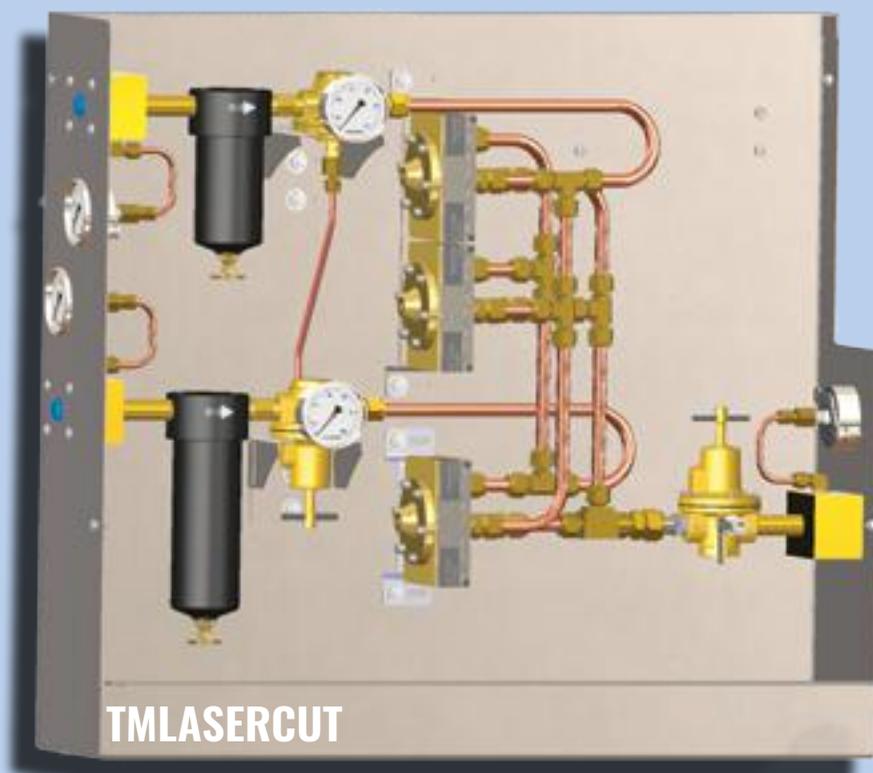
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# Driving Improvements and Profitability to a Metal Former's Bottom Line

By: Laurie Harbour, president and CEO, Harbour Results, Inc.

The U.S. manufacturing industry currently faces great uncertainty, with tariffs, trade negotiations, the skills gap, and economic instability contributing to an increasingly

challenging environment for metal formers and fabricators.

That said, in 2018 the metal forming industry saw significant growth. A recent annual

survey of stampers conducted by Harbour Results, Inc. (HRI) reports that the industry experienced revenue growth of more than 8 percent, with more than 74 percent of

survey respondents indicating revenue increases for the year. While the first half of 2019 looks slower than 2018, survey results signal an overall uptick in 2019 for stampers, with capacity forecast to reach more than 72 percent.

Additionally, stampers expect to invest more in 2019 than they did in 2018. Specifically, they are projected to increase machine-related capital expenditures. This investment in updated equipment and advanced software is critical for helping shops stay competitive through improved speed and efficiency. Finally, stamping throughput—a company's total revenue minus outsourcing and material spend divided by the full-time equivalent of employees—continues trending upward as it has since 2011. In fact, stamping's throughput leads other industries, due in part to the metal forming industry's continued focus on efficiency improvements.

## Improvement Potential: Operations, Marketing and More

HRI data show three areas with the greatest potential for improvement for stampers: operations, management, and sales and marketing. A strong strategy involves aligning these areas.

Yet, when leaders spend much of their time addressing day-to-day challenges, developing long-term strategies and a solid business plan for long-term success often are overlooked. When this happens, four common challenges can derail a business:

- Lack of direction. When an organization lacks a vision of what it wants to be, everyone does what they believe is best.
- Competing goals. This results when different communities within the organization disagree about vision and strategy.
- Disconnected leadership. When leadership fails to communicate effectively its vision and strategy throughout the organization, employee buy-in does not occur and the vision and strategy does not take hold.
- Wrong goals. When an organization unites in a direction counter to its vision and strategy, wrong goals and objectives are reasons why.

To identify a sound strategy, leadership must look at all aspects of the business and determine what the company does best and how to leverage that.

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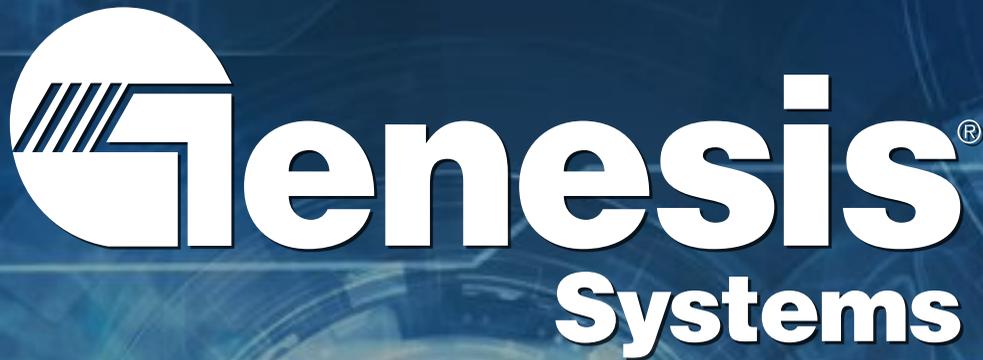
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# Manufacturing in Chicagoland

By: Kristin Campbell and Katie Pacheco

Called the “City of the Big Shoulders,” Chicago is known for its hardworking men and women, making it the perfect fit to host FABTECH 2019.

Out of the 4.87 million workers who call Chicago home, 430,600 are employed in

the manufacturing industry (Ref. 1). This represents an increase of 7100 workers, or 1.7%, from June 2018 to 2019 (Ref. 1).

Last year was also a productive one for the Prairie State’s manufacturers and other goods-producing industries, with manufac-

turing accounting for one in every four net job additions (Ref. 2). Illinois’ largest manufacturing industries, accounting for 60% of all manufacturing jobs, in order of number of jobs, are as follows: fabricated metals, food processing, industrial machinery, chemicals, and plastics (Ref. 2).

There are many companies and organizations working to further boost manufacturing in Chicago. One such initiative is Made in Chicago, which celebrates the variety of manufacturers that choose the city. This brand, launched in January 2014 to center on the local design, manufacture, and market value chain, works to ensure what’s designed here is made here as well as with locally sourced component parts. It’s a joint effort of the City of Chicago and the Illinois Manufacturing Excellence Center and powered by a shared platform by the Urban Manufacturing Alliance and Britehub.

“The region is home to makers of some of the world’s best-known brands, a rich and diverse network of suppliers and component manufacturers, a tremendously productive workforce, and a robust variety of public and private support,” according to madeinchicago.org. “Manufacturing is a central part of the city and regional economy, from small family-owned manufacturers to global institutions to entrepreneurs who have chosen Chicago as the place to start manufacturing companies. As Chicago builds for another century of success, the time has come to reassert our place in the Made in America movement and global manufacturing leadership. From design to production, the Made in Chicago program is focused on promoting local manufacturers and their products.”

On its website, there’s also a “buy local” section. A category list is searchable by several subjects, including machinery and metals; company type, organized by Chicago products and manufacturers, is available as well.

This article highlights two manufacturers, found through Made in Chicago, to inform *Welding Journal* readers how they promote manufacturing in the “City of the Big Shoulders.”

## Triton Industries: Poised for Success in the Heart of Chicago

Taking its name from the mythical messenger of the sea, Triton Industries Inc. (tritonindustries.com) opened for business in 1961 under the leadership of Founder Marvin Wortell. With humble beginnings as a components supplier for consumer electronics companies in the Chicago area, Triton Industries has expanded to serve dozens of industries throughout the United States, Mexico, and Canada. Some of the industries served by this full-service

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# Manufacturing in Chicagoland

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metal fabricator include medical, food service, transportation, process control, and architecture.

Today, Wortell's son, Brent, and granddaughter, Rebecca, are at the helm of the 65-employee company, which runs out of an old, 100,000-sq-ft, single-story brick building nestled in Chica-

go's busy manufacturing district. The prime location helps the company keep costs down.

"The city of Chicago has been very helpful in supporting manufacturing. We are in a manufacturing district, and it helps keep our taxes lower and stable," explained Brent Wortell, president of Triton Industries.

Residing in the industrial and populous city of Chicago has also allowed the company to deliver to a wider audience while sidestepping some of the hurdles, such as the skilled labor shortage, encountered by many others in the manufacturing industry.

"Even though we ship all over the country, Mexico, and Canada, and in the last few years most

of our work comes from the greater Midwestern United States, we are centrally located in Chicago for transportation and a great labor market," said Brent. "I can still hire high-skilled people whether it's TIG [gas tungsten arc] welders...or engineering help, with full-time, part-time, or moonlighters, Chicago is a great skilled labor market. My friends in places like Indianapolis or North Carolina just can't get the skilled people that we can in a large, manufacturing metropolitan area. We, of course, still train and promote our own internal people."

In addition to its booming locale, the company's diverse offerings have helped secure its strong foothold within the local and global manufacturing sector. Its services include custom metal fabrication; prototype design; metal stamping; laser cutting; tapping; gas metal arc, gas tungsten arc (GTA), and resistance (spot) welding; automated hardware insertion; fabrication of custom metal boxes/enclosures; grinding and finishing; assembly; bar code labeling; packaging; painting and plating (external); and more.

"It is our versatility that makes us unique," Brent affirmed. "We do the customer's entire product so they can install their electronics or plumbing, or whatever is needed."

Operating two shifts, 20 hours a day, the company's facilities are in accordance with the following standards: ISO 9001:2008, Quality management systems – Requirements, and AS 9000, the aerospace version of ISO 9000. Its welders are also qualified to the requirements of American Welding Society D1.1, Structural Welding Code – Steel.

To ensure its continued success, Triton Industries does not shy away from alternating its services. When products mature, are replaced, or are moved to China or Mexico, the company loses work. To combat this issue, the company changes its product mix about every three to five years. It also utilizes internal and external sales representatives to attract new projects and customers.

One new project the company is working on is a commercial water dispenser that delivers naturally flavored and sweetened water that can be carbonated or noncarbonated. The product aims to discourage people from using plastic bottles as well as drinking unhealthy, sugary drinks.

As Triton Industries takes on new projects to remain current in an ever-changing industry, it's also looking to join forces with another metal fabricator.

"We are in negotiations with another metal fabrication company that does TIG [GTA] welding, laser cutting, metal forming, and hardware insertion, just like us. The management would



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like to retire, so we are in conversations now, working with our two CPA [certified public accountant] firms," said Brent. "I'm not sure how it's gonna turn out, but we're always trying to expand to serve our customers and stakeholders as best we can."

### Laystrom Manufacturing: Investing in the Present to Secure Its Future

For nearly 70 years, Laystrom Manufacturing Co. ([laystrom.com](http://laystrom.com)) has swiftly processed orders big and small, from 500,000 pieces to 1. Started by members of the Laystrom family to produce custom component parts and assemblies for original equipment manufacturers, both nationally and internationally, it's now owned and managed primarily by third-generation family members.

During a recent phone call with President Colin Cosgrove, the Welding Journal learned a lot about the company and its president. Cosgrove has worked in sheet metal his entire adult life.

At the company's 65,000-sq-ft facility in Chicago, Ill., these processes regularly get used: laser cutting; computer numerical control (CNC) metal fabrication; forming; resistance, gas metal arc, gas tungsten arc, seam, and stud welding; plus stamping.

A wide variety of materials undergo processing, including different aluminum grades; stainless, mild, and coated steels; and brass/copper alloys.

"We're pretty diverse, demonstrative of where we can help customers have more success," Cosgrove said. The broad mix of sectors served ensures a dynamic workplace with a mix of fabrication. He recalled when one customer had a "headache part" and couldn't produce tooling without spending \$50,000. Leveraging his background, Cosgrove made a part containing 11 pieces for a few hundred dollars. By asking questions, listening, looking at the application, and engineering a solution, the problem got solved.

This client is now Laystrom's biggest customer.

"A couple of years ago, we focused on a few different things," Cosgrove said, which included three areas of business review.

Over 18 months, customers were asked why Laystrom earned their orders. These trends were identified:

1. Doing things quickly. "Listening to customers' needs and being able to respond quickly," he said, "for example, from Wednesday to Monday, have 1000 pieces ready to go."
2. Taking speed and doing it to scale. As another example, 90 different parts can be made over three months – "Essentially one new part, each day, for three months," he emphasized.

3. Design for manufacturability. This means working on the design for production, lowering initial and life-cycle costs, and reducing redundancies.

With regard to the advantages and challenges of manufacturing in Chicago, Cosgrove noted while the city is known for business regulations, it's also supportive. In the building housing Laystrom Manufacturing, where the company has been since 1958, new windows were installed with assistance from the city.

Paying attention to hourly minimum wage rates by state is another factor. In Illinois, effective January 1, 2025, that will be \$15/h (Ref. 3).

"When you've got pockets around the country at higher minimum wages, and states around them that don't, there's an impact...so [you've] got to be inventive and creative to deliver value in other ways," he said.

This summer, the City Council approved Chicago's 'fair workweek' ordinance (Ref. 4). Many

workers must get two weeks' notice of their schedules. On one hand, this is beneficial; on the other, it confines ability for a competitive advantage. "I think there's a place in society for it, but in my 25 years of manufacturing experience, it limits opportunities," Cosgrove said. The company has evolved and endured thanks to loyal employees. It now has 60; many are long-term.

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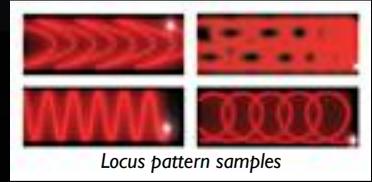
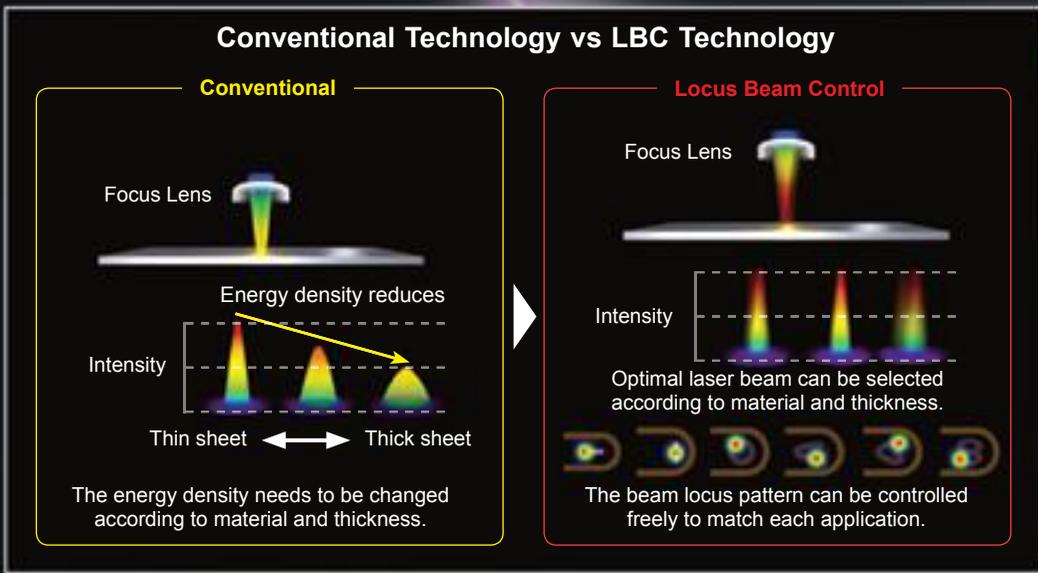
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North American **DEBUT**

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# Where's the Next Generation of Fabricators?

In *The FABRICATOR's* 2019 "What Keeps You up at Night?" survey, fabricators show concern about where the future workforce will come from  
 By: Dan Davis, editor-in-chief, *The FABRICATOR*

Peace of mind is a luxury not too many metal fabricators have. In the world of low-volume, high-mix manufacturing, a new challenge is always around the corner – particularly over the past 10 years. The manufacturing

economy has been humming along since digging out of the depths of the Great Recession. Meanwhile, manufacturers still are in search of people to help them to grow right along with the economy.

That's what the 2019 edition of *The FABRICATOR's* "What Keeps You Up at Night?" survey found. Almost 100 fabricators shared their thoughts with us in a survey that was sent to the subscriber base in

June. When asked to rank their No. 1 concern among a list of items (availability of credit, availability of skilled workers, consolidation of competition and customers, cost of raw materials, economy, erosion of manufacturing as a viable career choice, foreign competition, government regulations/policy/tariffs, growth of federal government debt, health care costs, lack of business strategy, meeting increased customer expectations, and other), 45 percent listed "availability of skilled workers," the highest percentage since this issue started dominating this survey question in 2011.

Their response should come as no surprise, particularly in recent years. The unemployment rate sits at historic lows at 3.7 percent as of the Bureau of Labor Statistics' June report. In 2018 the manufacturing sector created about 22,000 jobs per month, according to U.S. Department of Labor data. This has slowed to about 8,000 new jobs per month in 2019, but it's still been a robust expansion of the manufacturing economy since 2009.

After all, the U.S. is officially in its longest economic expansion ever, which started in June 2009. The previous record of 120 months of economic growth took place from March 1991 to March 2001, according to the National Bureau of Economic Research.

Many recognize that this economic recovery has been marked by sluggish GDP growth, but even this less-than-robust recovery has been good for manufacturers as they have added jobs, building up the manufacturing workforce to 2009 levels. The BLS counted 12.6 million manufacturing workers in the U.S. in January 2009 and 12.9 million workers in June 2019.

If manufacturers are adding jobs, that's a sign of a prosperous manufacturing economy. To keep up with those opportunities, many shops have relied on investments in new automation, looking to decrease the need for labor. In this "What Keeps You up at Night?" survey, 48 percent of survey respondents indicated they planned to invest in more automation in the coming 12 months, up slightly from 45 percent in 2017. In the 2019 survey, 32 percent said their companies planned to invest in new laser cutting machines, and 28 percent said they were looking at new press brake equipment. Twenty-five percent were considering robotic welding equipment, hoping to remedy the welding bottleneck that seems to exist for so many fabricating companies.

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<b>3D/ADDITIVE MANUFACTURING</b>	■ <b>NEW! F130:</b> How MES Transfers Data Efficiently Through The Additive Manufacturing Value Chain & Business Case Method <b>Room S403A</b>		
<b>AUTOMATION</b>	■ <b>NEW! F131:</b> Sensors, Maintenance and Platforms for Leveraging Technology <b>Room S401D</b>		
<b>FINISHING</b>	■ <b>NEW! C130:</b> Power Up and Hang On for Efficiency and Savings <b>Room S501A</b>		
	■ <b>NEW! C131:</b> Using the Dirty Dozen to Optimize Your Powder Coating <b>Room S501BC</b>		
	■ <b>C132:</b> Test for the Best - Best Practices and Measurement Methods for Quality <b>Room S501D</b>		
<b>LEAN</b>	■ <b>NEW! F136:</b> Lean Principle: Science of Lean Culture and Case Studies <b>Room S401A</b>		
<b>MANAGEMENT</b>	■ <b>F137:</b> Making Better Decisions as a Business Leader & Tools for Management Success <b>Room S404BC</b>	■ <b>NEW! F147:</b> Financing to Enable Growth & Achieve Project Improvement <b>Room S404BC</b>	
<b>SMART MANUFACTURING</b>	■ <b>NEW! F139:</b> Smart Manufacturing to Successfully Implement the Trifecta; All in Real Time <b>Room S402B</b>		
<b>WORKFORCE DEVELOPMENT</b>	■ <b>NEW! F221:</b> How to Win With Personalities & Team Engagement <b>Room S401BC</b>		
<b>WELDING</b>			
<b>CAREER PATH WORKSHOPS</b>	<b>W20:</b> Starting a Welding Inspection Business <b>Room N133</b>	8:00 AM	10:00 AM
	<b>W21:</b> Becoming a Certified Welding Accredited Test Facility for Testing Certified Welders <b>Room N134</b>	8:00 AM	11:00 AM
<b>PROFESSIONAL PROGRAM</b>	<b>W26: SESSION 17:</b> High-Energy Density Processes <b>Rooms N138-N140</b>	8:00 AM	12:00 PM
	<b>SESSION 18:</b> Industrial Technology II <b>Rooms N138-N140</b>	8:00 AM	12:00 PM

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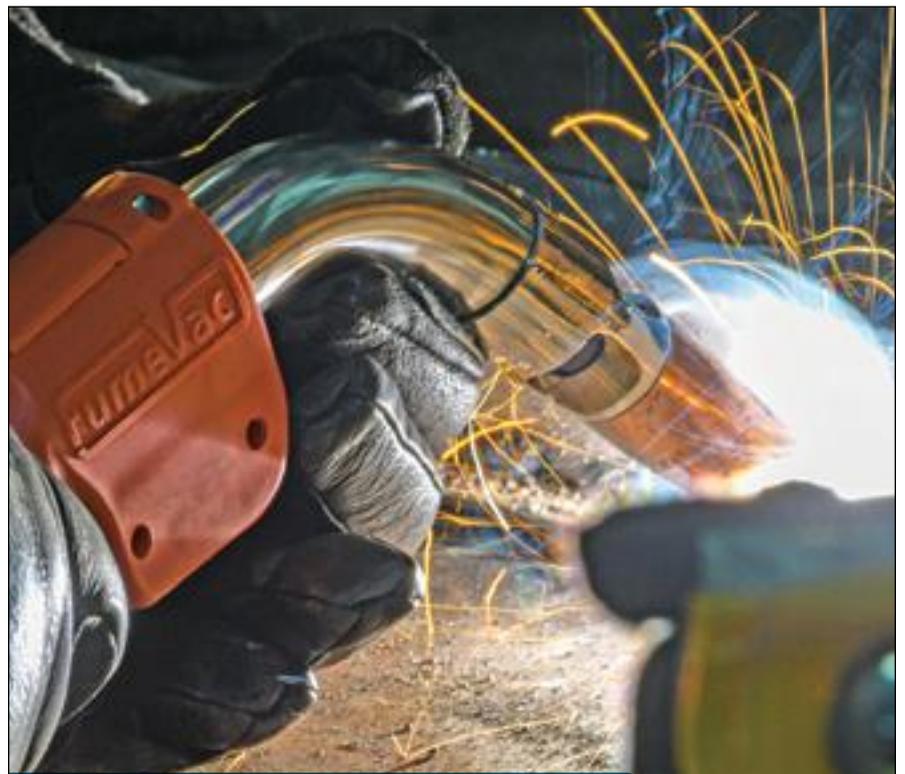
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# Inspiring Tomorrow's Manufacturing Workforce Through Summer Camps

Industry studies continue to sound the warning that the manufacturing industry will be faced with a skilled worker shortage that will only get worse over the next decade. According to reports, by 2025, up to 2 million manufacturing jobs will remain unfilled. Manufacturing employers, community colleges, and trade schools have responded to the crisis by resurrecting apprenticeship programs, developing skilled training curricula, and creating career pathways through industry credentials. While these efforts are helping to attract students to the field, they are simply not enough to combat a negative public perception, and senior year of high school may be too late to change a student's career direction.

Nuts, Bolts & Thingamajigs® (NBT), the foundation of the Fabricators & Manufacturers Association, Int'l. (FMA), has found an effective way to reach young people at a more impressionable age through summer manufacturing camps. Hosted by community or trade colleges and technical high schools, the camps introduce students ages 12-16 to the exciting world of advanced technology and manufacturing. The one or two-week camps offer students an opportunity to design and build a take-home project that they make with their own hands. NBT provides schools with grant funding, materials, and key resources needed to host a successful manufacturing camp.

In addition to the financial support, NBT provides a camp curriculum guide, developed in coordination with the National Association for Community College Entrepreneurship (NACCE), along with a camp safety manual. The five-section curriculum introduces entrepreneurship concepts to encourage learning about the business side of manufacturing. In addition, each camper also receives a 365-day license for SolidWorks CAD software and a customized T-shirt with the name of the camp and supporting sponsor logos.

The program has grown significantly, and this summer, NBT supported 130 grant-funded and affiliated manufacturing camps across the country serving nearly 2,500 students and their families. Plans are in progress to expand the NBT camp program across the U.S. with a goal to host a camp in all 50 states.

## Making an Impact Close to Home

One of the highlights of the NBT camp experience is the opportunity for schools to improve the feed of students into STEM classes in their local high school which, in theory, will increase enrollment in college-level technical programs. In addition, as the target audience

is middle-school students who aren't yet driving themselves, NBT summer camps have the unique advantage of connecting with parents. By keeping family members informed and engaged on camp activities, the host school

can change parents' perceptions about manufacturing and influence discussions with their child about career choices.

Another benefit of hosting manufacturing camps is the ability to build and strengthen

relationships with community employers. Many schools develop training programs based on the needs of the local manufacturing base, so it is in a company's best interest

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# Driving Improvements and Profitability to a Metal Former's Bottom Line

continued from p. 10

## Sales Process Delivers Results

Stamping throughput – total revenue minus outsourcing and material costs, divided by the number of full-time employees – continues trending upward. Bars show the average value-added revenue per full-time employee in thousands of dollars.

Along with developing a viable strategy, metal formers and fabricators should focus on developing a sales process. Top shops leverage a best-in-class sales process to help define and implement a plan to fill their pipelines, manage capacity, and bring in additional revenue. A good place for stampers to start: Gather market intelligence and use already collected data to better understand the shop's current business state. For example, an analysis of the company's current request for quote (RFQ) hit-rate data across customers, jobs,

type of work, etc., could provide insights that help drive strategy. This analysis, which reveals the number of quotes per customer, number of quotes won per customer, total value of the business won, and total value of the quotes requested, enables a shop to determine its low- and high-volume customers and whether its business is appropriately diversified among customers and/or industries. Along with the company's overall business strategy, this data provides the information needed for identifying sales opportunities and challenges, serving as the foundation for building an effective sales process.

## Creating Operational Excellence

Advancements in pressroom automation equipment and software, when integrated

with game-changers such as big data, the Internet of Things, virtual reality and artificial intelligence, point to a new era for metal formers and fabricators. Companies must find ways to continuously evaluate technology and opportunities to eliminate waste in all processes, both physical and transactional, and adopt automation that fits their business strategies.

One such practice, capacity planning, measures the maximum amount of work that a shop can complete during a given time period. Though this can be challenging, capacity planning provides a number of benefits:

- Better on-time performance (fewer missed delivery dates), resulting from understanding the time needed for jobs;
- Mitigation of margin erosion through better management of materials and resources, including predicting and filling the gaps, and accounting for quality issues and change-over times;
- Recognition of new-work opportunities by predicting gaps in equipment/tonnage and space;
- Improved profitability resulting from effective planning capacity throughout the organization; and
- Effective budgeting for new equipment and additional resources, made possible by

knowing the shop's production capabilities.

The best scenarios integrate capacity planning with sales, providing a clear understanding of when and where the shop has open capacity and then working to find jobs to fill those gaps. The more lead time the sales team has, the better the chances of identifying and pursuing the right jobs, whether it's transfer work or a bigger project.

Finally, shops should consider implementing task-based manufacturing to improve efficiency while maintaining or improving quality. By aligning roles and responsibilities by task, shops can better leverage the skills set of individual employees and capitalize on their ability to complete a task in the most effective manner. This translates to improved throughput and increased capacity without significant capital expenditures.

Task-based methodology, when not limited to the shop floor, can benefit the full enterprise. While challenging, companies that successfully accomplish this will see significant improvements as they reduce lead times and labor hours.

Moving forward, leadership must be informed and aware of several evolving areas, including the political environment, economic landscape, automotive industry slowdown, Industry 4.0, new technology such as 3D printing, the use of big data, and future mergers and acquisitions. ■

## Inspiring Tomorrow's Manufacturing Workforce

continued from p. 21

to participate in a potential feeder system of future employees. A company might provide sponsorships or offer a tour of their plant, so students can get an inside look at a modern facility and learn about products made in their community. Some employers are invited to visit camps to speak about the variety and earning potential of manufacturing careers and available jobs within their company.

Many camp directors have reported that hosting manufacturing camps has enhanced their school's potential to seek and obtain funding from other sources. Marcia Arndt, Associate Dean of Manufacturing at Moraine Park Technical College in West Bend, Wis., said "the relationships we have with employers because of the camp have aided in donations to the manufacturing programs and foundation at the college."

Through pre- and post-camp surveys and evaluations, NBT has demonstrated that the camp

programs have been successful in influencing students' opinions of manufacturing and, perhaps more importantly, their parents' views, thereby making a greater impact on future career paths. As a parent of twin campers said, "Thank you for sharing your enthusiasm and wisdom with my son and daughter over the last three years. They have left [the camps] feeling empowered to follow in an advanced technology field with anticipation for the future."

Solving the skilled worker shortage will not happen overnight. While NBT continues to work with our industry partners to promote manufacturing as a viable and fulfilling career choice, summer manufacturing camps are reaching students at the right age to motivate them to pursue the degrees and skills training that manufacturers need now. To learn more and support NBT's mission to inspire the next generation of manufacturers, visit [nbtfoundation.org/camps](http://nbtfoundation.org/camps). ■

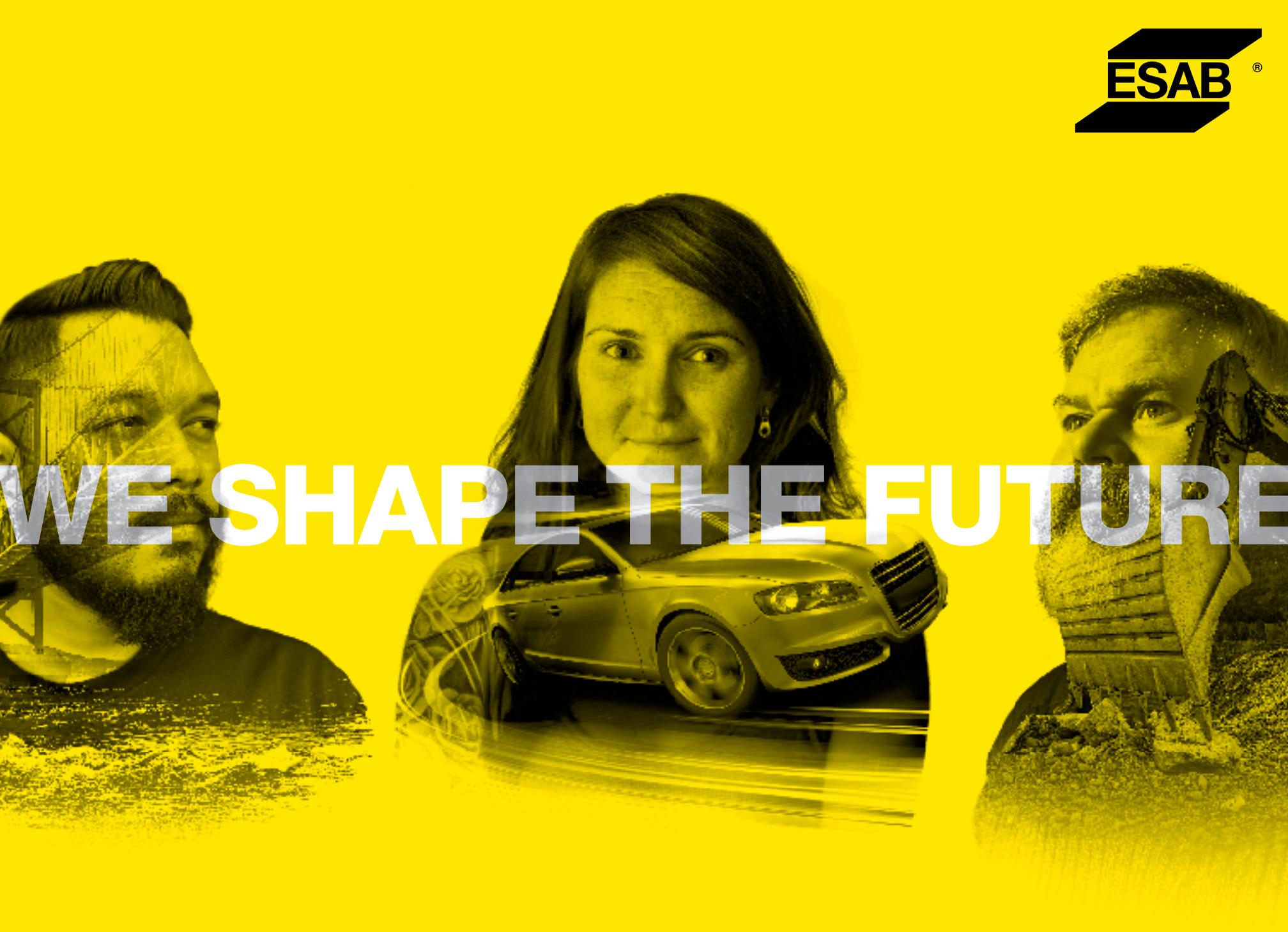


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The background of the top half of the advertisement features three people—a man on the left, a woman in the center, and a man on the right—looking towards the camera. In the center, a silver car is shown in motion, with motion blur lines trailing behind it. The entire scene is overlaid with a semi-transparent yellow filter. The text "WE SHAPE THE FUTURE" is written across the middle of the image in large, white, bold, sans-serif capital letters.

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# CCAI Announces New Education Initiatives

continued from p. 8

“Being a partner in FABTECH Mexico combined with the fact that many of our members across the U.S. employ Spanish-speaking staff, our board determined it is time to invest in translating all of our training manuals. Our manuals have been revised multiple times since the first two were translated to Span-

ish. The consensus is that it is time to bring the original two translations up to date and translate the remaining manuals as well. We believe our manuals in Spanish will provide a great resource for our members in the U.S. and attendees of FABTECH Mexico.”

Each manual is thoroughly reviewed by CCAI-member Spanish-speaking experts who regularly do business in Mexico to ensure translation accuracy. Antonio Tapia of Coral Chemical Co., a board member of the CCAI Southern California chapter and manual reviewer, feels this translation is an important

next step for the Association. He states, “CCAI is making an effort to be up to date in the education of their members and end users. These translations will reach beyond the classroom; they will provide a tool for the leadmen, supervisors and owners to communicate with operators and technicians in their language. This effort is making a big move forward in the meaning of the International part of our association.”

**The first Spanish language manuals are available in the CCAI Booth (B13026) and online at [www.ccaiweb.com/store](http://www.ccaiweb.com/store).** ■

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# Where's the Next Generation of Fabricators?

continued from p. 18

## Why Not Manufacturing?

That still doesn't address metal fabricators' concern about finding the right workers for their shops. Sure, more schools are upgrading their vocational skills development facilities, such as building more welding labs, and associations like the Fabricators & Manufacturers Association are trying to boost awareness of manufacturing with young people by

sponsoring hands-on manufacturing camps. But it's still an uphill battle, even in the face of ample opportunities in the manufacturing sector.

In June the Brookings Institution conducted a poll that examined attitudes toward manufacturing. The researchers connected with 2,001 adult internet users. When people were asked how they feel about manufacturing, 58

percent reported that they believe manufacturing is important to the U.S. economy, 14 percent think it is somewhat important, and 6 percent feel that it is not very important. Twenty-two percent said they are unsure.

That sounds promising, but responses differed significantly by age. Seventy-one percent of people over the age of 55 indicated that they view manufacturing as very important,

whereas only 45 percent of those aged 18 to 34 years felt the same way.

When the "What Keeps You up at Night?" survey asked fabricators what should be done to boost young people's awareness of manufacturing, they had some specific ideas:

- "Have the government and the schools bring back industrial arts."
- "Better and more emphasis on trades education. Also, funding or tax credits for companies that invest in technology to narrow the gap between the experienced workforce and the entry-level employees' quality of work and production."
- "More schools involved with sheet metal process training."
- "Federal-level programs for employee training that transcend state lines."
- "All high schools should have an introduction to skilled trades class available sometime during ninth to 12th grade."
- "Revamp of our nation's education focus, which would need to include a change in our culture so that skilled factory jobs become desirable again for young people."
- "Implementation of a European-style apprenticeship program throughout the U.S."

In the meantime, fabricators continue their search. Fifty-four percent reported that they were going to devote major resources to finding and retaining skilled labor over the next three to five years. Over the same period of time, however, only 15 percent pledged to establish or offer apprenticeships and internships, and only 13 percent expected to offer technical training for shop floor employees. In the midst of trying to keep up with customer demands, many small to medium-sized companies struggle to find the time and resources to tackle employee training.

Despite the concerns, a majority of fabricators revealed that they are resting easy considering what is going on around them. Sixty-one percent reported that their businesses are growing, and 74 percent said that they were satisfied about their situation working in metal fabricating. They may not be able to control the public's perception about manufacturing or national trade policy, but metal fabricators are maintaining a positive attitude about their immediate futures. ■

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## Manufacturing in Chicagoland

continued from p. 15

“The Laystrom family has always treated the people who work here with integrity and respect. You can’t underestimate the impact of that over time. We’ve tried to capture the truth of that history and make sure we are aligning with what the company has always been,” Cosgrove said.

Production, with purpose, is a new adaptation to give employees the opportunity to enjoy fulfilling careers, using technical skill, creativity, and a culture of caring to deliver profitable value to all its stakeholders. Core values include safety, character, connection, contribution, and cultivation.

“That represents the future of our organization, and it’s in alignment with the past,” Cosgrove added.

The company is looking forward to continued growth; investments, such as incorporating a cobot to be part of the daily workforce; expanding capacities, possibly through adding robotic welding; and relaunching its website.

“We like solving fun problems,” Cosgrove concluded. ■

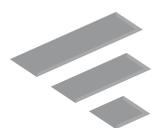
*\*This article appeared in the October 2019 Welding Journal.*

### References

1. U.S. Bureau of Labor Statistics. Chicago area economic summary. Aug. 2019. [bls.gov/regions/midwest/summary/blssummary\\_chicago.pdf](https://www.bls.gov/regions/midwest/summary/blssummary_chicago.pdf).
2. Commission on Government Forecasting and Accountability. 2019. State of Illinois Economic Forecast February 2019. [cgfa.ilga.gov/Upload/2019MoodysEconomyILForecast.pdf](https://www.cgfa.ilga.gov/Upload/2019MoodysEconomyILForecast.pdf).
3. Illinois Dept. of Labor. Hourly minimum wage rates by year. [www2.illinois.gov/idol/Laws-Rules/FLS/Pages/minimum-wage-rates-by-year.aspx](http://www2.illinois.gov/idol/Laws-Rules/FLS/Pages/minimum-wage-rates-by-year.aspx).
4. Fair Workweek Chicago. Aug. 8, 2019. City Council approves Chicago’s ‘fair workweek’ ordinance. [chicagofairworkweek.com](http://chicagofairworkweek.com).
5. Major League Baseball. The 1060 Project. [mlb.com/cubs/ballpark/1060-project/vision/overview](http://mlb.com/cubs/ballpark/1060-project/vision/overview).
6. Pepper Construction. 2016 annual review: Wrigley Field [pepperconstruction.com/AR2016/Wrigley.html](http://pepperconstruction.com/AR2016/Wrigley.html).



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**11-14**



# Mythbuster Delights FABTECH continued from p. 1

## Special Effects Master

Before becoming a Mythbuster, Imahara had a storied career in the movie special effects business. He even worked as an animatronics engineer and modelmaker for George Lucas' Industrial Light & Magic (ILM) in Marin County, California. In that capacity, he specialized in electronics and radio control at the ILM Model Shop. That

has earned him an incredible list of movie credits. These include classics such as *Jurassic Park: The Lost World*, *Star Wars: Episode I – The Phantom Menace*, *Galaxy Quest*, *AI: Artificial Intelligence*, *Star Wars: Episode II – Attack of the Clones*, *Terminator 3: Rise of the Machines*, *Matrix: Reloaded*, *Matrix: Revolutions*, *Van Helsing* and *Star Wars: Episode III: Revenge of the Sith*.

Imahara regaled the audience with a series of stories from these historic movie sets. Like the time when he was given the job of installing the electronics in the R2-D2 units for *Star Wars*. This involved the replacement of the halogen light source and a rotating color wheel from the head of the robot (for the sparkly displays). He had to figure out how to fit out R2-D2 with a custom microcontroller-

based LED circuit that was originally created to make the pulsating lights for the main engines of the Protector spaceship from the *Galaxy Quest* movie. He also upgraded all the radio equipment and speed controls of R2-D2 to modern standards. Along with R2-D2 Crew Chief Don Bies and Nelson Hall, he was one of only three official R2-D2 operators in the United States.

“Working on the *Star Wars* movies was a dream come true,” said Imahara. “My job at ILM was anything that lit up or moved.”

He related how he built many of the robots and sets used in all three *Star Wars* Prequels. The famous Federation Battleship, for example, was created from scratch without CGI. This required Imahara to utilize his many other skill-sets such as electronics design and fabrication, CAD layout, laser cutting, mold making, and machining.

“The motion control cameras used to film the Federation Battleship in *Star Wars* were made from scratch using a lathe and couple of mills,” he said.

The cameras, the equipment, and all the models incorporated an incredible amount of technology. This, after all, was in the era before computer graphics. Even the vast hangar bays in the movies were physical scale models created to simulate the real thing.

Further tales from his moviemaking past included how he built Dracula's Castle for *Van Helsing* and erected many of the sets for the Spielberg movie *AI*.

From his later work on TV, Imahara recounted anecdotes about how he figured out how to give the Energizer Bunny its beat, and the time he designed the irreverent robot skeleton sidekick Geoff Peterson for *The Late Late Show with Craig Ferguson*. That robot became a long-running favorite for the popular Scottish late-night host.

He loves to bring audiences inside the thrilling world of science and entertainment. In recent years, he brought his unique skills to the *White Rabbit Project* on Netflix, hosted *Punkin Chunkin* and *Killer Robots* for Science Channel, and has appeared on *Junkyard Wars* and Comedy Central's *BattleBots*. He could also be seen playing Lt. Sulu in the critically acclaimed webseries *Star Trek Continues*.

As well as providing a behind-the-scenes look at his work on various sets and productions, he ended with a word about the importance of advancing the engineering and manufacturing industries. These, he said, are critical to the nation's future. ■

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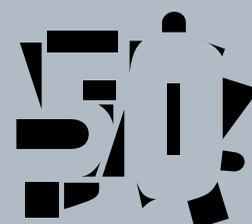
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# Women of FABTECH Breakfast continued from p. 6

equipment in use for mainline production but was a capable machine and a good way for apprentices to learn. Next, she said, the company added a cobot.

Zierick suggested several tips on how to stay up to date on the latest trends. Magazines such as “Popular Science” and “Popular Mechanics,” can provide smart technology ideas for small shops that can also be tried inexpensively.

In addition, her company supports a scholarship program through the local Rotary club. Money is donated to a student headed for either a technical school or an engineering program.

“Three out of the last four winners have been female and two of them have done summer internships with us,” she said. “We also participate in a tech program at the

high school where the kids have to do a three-week internship.

Over the last 3 years, Zierick Manufacturing has interned three young women. Two went on to win a scholarship and do summer internships with her firm after their senior year of high school.

“With such a shortage of workers, getting women interested in working in manufacturing could be a huge help,” said Zierick. “While

manufacturers can’t offer the ‘work from home’ option that many women look for, manufacturing jobs are reliable and predictable.”

Her company works four 10-hour days, so employees get a three-day weekend every week. They’ve also occasionally had a team of two women set up a job share and work together to make sure the job was covered every day.

## Women of John Deere

The second presentation at the Women of FABTECH Breakfast came from Monica Silliman, Manufacturing Engineering Manager, Combine Final Assembly at John Deere Harvester Works, and Erin Welken, Manager, Business Process Improvement, Global Ag & Turf Supply Management Organization at John Deere. They talked about internal women’s initiatives at their company and how to go about starting one in your own organization.

“John Deere supports women’s initiatives through employee resource groups dedicated to supporting our female employees,” said Silliman. “We also have an active membership in organizations like SWE (Society of Women Engineers) and WiM (Women in Manufacturing). Several of our units also host Introduce a Girl to Engineering Days to inspire our future female leaders.”

These initiatives have the full support of John Deere CEO, Sam Allen. He believes his company’s commitment to delivering world-class products and services parallels its commitment to diversity and inclusion. Diverse teams bring better ideas and decisions, helping the company build more innovative products and forge stronger partnerships around the world.

The breakfast helped to make women in the FABTECH industries more aware of the resources available to them. Tabletop displays featuring organizations that support women supplemented the presentations at the breakfast. Participating organizations provided information to attendees about the services they offer. Some of the participating organizations included Women in Manufacturing, Women in Finishing (CCAI), Women in Gases & Welding (AWS), Nuts Bolts & Thing-amajigs Future Women in Manufacturing (FMA), Women in 3D Printing and Women of Today’s Manufacturing.

The Women of FABTECH Breakfast was established to provide a venue during the show where women engaged in the FABTECH industries can connect, network and learn. The success of the event has made it a regular fixture of the show. ■



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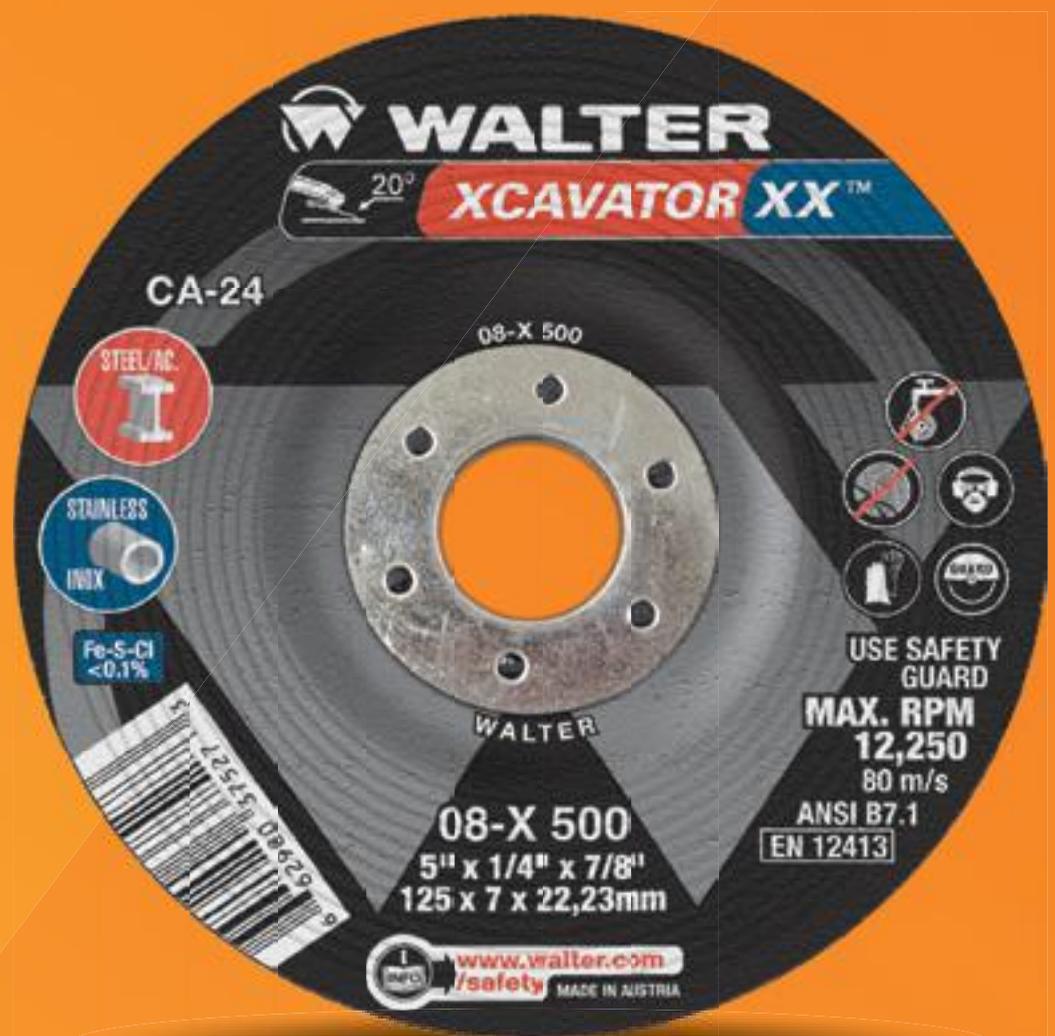
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