

WHY APPRENTICESHIPS ARE THE KEY TO MANUFACTURING SUCCESS IN AMERICA:

NTMA Companies Set the Bar for Industry Growth and Innovation



SERVING THE NEEDS OF MANUFACTURING COMPANIES FOR 75 YEARS

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TAPPING INTO THE FUTURE:

Why reaching out to high schoolers now will impact industry tomorrow. p.12

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Member companies who believe in the power of apprenticeships. pp. 34-35

2018 EVENTS

LEARNING

- ✓ Software Bootcamp • Cleveland, OH • May 10—11
- ✓ Big Hairy Audacious Growth Conference • St. Louis, MO • June 6—8
- Emerging Leaders Roundtable • Nashville, TN • August 22

GLOBAL

- Japan Tour • Japan • April 22—28 ✓

NETWORKING

- ✓ Chapter Leadership Summit • New Orleans, LA • January 28—30
- ✓ MFG Meeting • Miami, FL • March 7—10
- ✓ Emerging Leaders Conference • Pittsburgh, PA • April 30—May 2
- Fall Conference • Denver, CO • October 23—26

ADVOCACY

- Legislative Conference • Washington, DC • April 16—18 ✓
- NRL Competition • California, PA • May 18—19 ✓

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LOOK FOR THIS SYMBOL THROUGHOUT THE ISSUE FOR STORIES
RELATED TO THIS MONTH'S FEATURED TOPIC.

75
YEARS
MADE
STRONG



NATIONAL TOOLING AND MACHINING ASSOCIATION

75 YEARS OF MANUFACTURING SUCCESS AND EXCELLENCE

75
YEARS
MADE
STRONG

In 2018, the National Tooling and Machining Association is celebrating our 75th Anniversary. We'll share stories, information and the history of the organization throughout the year. Do you have something that you would like to share? Please contact Kelly LaMarca at klamarca@ntma.org with any stories, photos or ideas. We look forward to celebrating our diamond anniversary together!



WELCOMES NEW MEMBERS

ATC AUTOMATION

Tennessee Chapter
Bob Faulhaber
101 Mill Drive
Cookeville, TN 38501

EVERWEAR, INC.

St. Louis Chapter
Rodney Moulin
401 Stag Industrial Blvd
Lake St Louis, MO 63367

I-CORP, INC.

General
Steve Ingraham
4935 Fannett Road
Beaumont, TX 77705

INNOVATIVE METAL SERVICE, INC.

St. Louis Chapter
Skip Miller
1686 Sugar Grove Road
Troy, MO 63379

JOHN SWETT HIGH SCHOOL

San Francisco Bay Area
Chapter
Tony Tammer
1098 Pomona Street
Crockett, CA 94525

RYERSON

Kansas City Chapter
Brent Hall
101 E 9th Ave
Kansas City, MO 64116



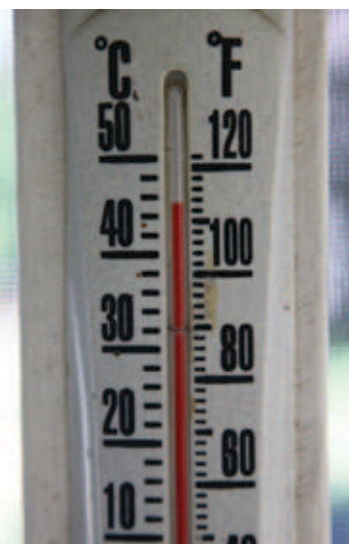
FEATURE

WITH A HOT SUMMER AHEAD, DON'T LET ENERGY PROCUREMENT MAKE YOU SWEAT

SUBMITTED BY APPI ENERGY, NTMA NATIONAL ASSOCIATE MEMBER

With summer fast approaching, it's prudent to examine the factors that determine the price of electricity and natural gas supply throughout the United States. Summer is typically a "demand" season – a season where the energy needs of the country necessitate that we expend energy sources, such as natural gas, rather than expand them. Naturally, that demand primarily corresponds to the intensity of summer weather we experience.

Late afternoons in mid-summer typically make up the grid's "peak demand" days. Those peak demand days affect a business's capacity tags, and how that can lead to reduced or increased expenses going forward. In this article, we will discuss the factors that are likely to impact energy procurement this summer, both supply and demand. We will



also discuss energy procurement strategies, and how APPI Energy works to provide our clients with solutions that reduce upward pricing risk during these summer months.

SEE "APPI" PAGE 5



PRESIDENT'S UPDATE

DAVE TILSTONE / NTMA PRESIDENT

75
YEARS
MADE
STRONG

Prior to the Great Recession, the word “apprenticeship” was not highly regarded or descriptive of the preferred training to fill the job openings in the U.S. It was most commonly used to describe the very popular TV show, *The Apprentice*. Regardless, in many manufacturing communities, it survived and was an important training curriculum and foundation for workforce development. However, most school districts in the U.S. viewed it as “old school” and not a path to a career. “Go to a four-year college for a career” was the guidance provided by counselors, parents and educators. Trades schools and shop classes were closing as a result of poor enrollment and funding. Times have changed. We now have the President’s Task Force on Apprenticeship Expansion. The Task Force—representing companies, trade and industry groups, educational institutions, and labor unions—brings to the table substantial workforce development experience in addressing the nation’s skills gap. Apprenticeship programs ben-

efit the student, the employer and our industry.

Bill Gates writes on his blog (October 17, 2017), “Based on the latest college completion trends, only about half of all students (54.8 percent) will leave college with a diploma. With almost 50 percent of college students deciding to drop out before they enter their junior year.” Apprenticeship training, when combined with new e-learning platforms and technologies, is gaining momentum. As all NTMA members know, acquiring the skills for our trade provides a great career path, income to support a family as well as a rewarding and prosperous lifestyle.

A good example is NTMA-U. It is the only tool and die online apprenticeship program in the U.S. sanctioned in all 50 states. The NTMA-U platform provides a convenient and easy to use interface that offers the opportunity for student to learn when it’s convenient for the family and employer.

We should all be proud and recognize NTMA members and chapters that support their local schools and apprentice-

ship programs. One of the most rewarding and exciting events is attending an apprenticeship graduation. You see the proud graduates celebrate their achievement with their family, employer, friends and educators. The only way we are going to solve the skills gap is to invest in training, our local schools and students.

Please read about some of the successful programs in this edition of *The Record* provided to us by NTMA members. Be safe and enjoy your summer! See you at the Fall Conference in Denver.

DAVE TILSTONE / NTMA PRESIDENT

Dave Tilstone



THE RECORD

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NATIONAL TOOLING & MACHINING ASSOCIATION

1357 Rockside Road

Cleveland, OH 44134

1-800-248-6862

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FEATURE

"APPI" CONTINUED

DEMAND

As mentioned previously, the weather is a primary driver of energy demand, and is chiefly responsible for summer's status as a peak demand season. This summer, NOAA predicts above average temperatures across much of the country, primarily in the Southwestern United States, and pockets of the Northeast. However, many factors could skew temperatures away from their currently projected ranges. High latitude cloud cover and expanding drought in the Southern Plains may pressure temperatures upward throughout the southern and central United States, whereas a developed El Niño and continued rainfall (as we've been experiencing in

the Eastern United States throughout May) may lead to a cooler (and thus less demand intensive) season. However, as of this article's publication, estimates are that we'll have a hot summer, beginning early into the season.

While weather plays the most fundamental role in energy demand, it is far from the sole contributor. At the writing of this article, U.S. exports of crude oil hit a record high, at 2.6 million barrels per day. The U.S. continues to bolster its exports, in the fields of crude oil and natural gas. As global demand for energy increases, as it is projected to do, the U.S. will likely continue to increase its exports and build infrastructure to support

SEE "APPI" PAGE 7

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APPRENTICESHIPS: NTMA LEADS THE WAY

BY STACEY SCHROEDER, NTMA,
DIRECTOR OF WORKFORCE DEVELOPMENT



Earn while you learn. Gain technical skills without going into debt. Be in a financial position to own a house, a nice car, and have the funds for vacations and other big purchases at a young age.

There are many marketing tactics and taglines for apprenticeship programs, and the administration's focus on apprenticeship is helping shift mindsets and decisions. Many NTMA members believe in the value of apprenticeship – and invest their time, treasure and energy in selecting great candidates, training them, and building their talent pipeline for the future. In this month's Record, you'll read stories from members about their apprenticeship programs that will get you feeling excited and engaged about younger generations' interest in manufacturing!

The process of registering an apprenticeship program can seem daunting, but we have many members that can talk you through the process, as well as our staff at NTMA, and our contacts at the Department of Labor. There is funding available to help you pay for related training instruction, as well as for other training for incumbent workers. It often varies state-by-state, but it's often just a few phone calls or Internet searches away!

The value of apprenticeship programs is apparent for companies, but also for individuals. Younger generations have seen their parents' financial future implode when big companies closed their doors – decimating



their retirement savings. The opportunity to participate in a structured program with training and pay raises based on new skills acquired is exactly the kind of career path that appeals. Newer workers are often looking for frequent feedback and advancement – which are exactly what happens with a structured apprenticeship program. From the company perspective, it creates a competitive advantage – not only are you proving that you invest in your employees, but it creates a short- and long-term incentive for those apprentices to stay during and after the program. As they're earning and learning, they are earning more vacation time, getting to know their fellow employees and becoming friends, participating in profit-sharing, retirement plans or other benefits packages. All of those factors create 'stickiness.'

NTMA offers NTMA-U courses online – all of which are approved by the Federal Bureau of Apprenticeship Training and the Department of Labor as the related training instruction for apprenticeship programs related to our industries. This means that getting an apprenticeship program registered at your company can be a fairly streamlined process. We are happy to provide the appropriate documentation for that approval, and can also help you determine which courses would best match the specific program(s) you're looking to build. Our Education Team also has a number of experts on apprenticeship that would be happy to get on a call with you to talk you through any questions you have.

We also have become a National Apprenticeship Program Sponsor for a 3-year Precision Machinist apprenticeship program, and are working out the administrative and logistics side of that over the coming months.

Learning is one of the three key pillars of NTMA, and I encourage to utilize all your member benefits related to it – the mechanical aptitude test, NTMA-U, educational sessions at conferences and roundtables, and even more content to come in a variety of formats.

Please reach out to me at sschroeder@ntma.org if you'd like help getting an apprenticeship program set up, or have other questions.



LEAVE IT TO LEECH

SUBMITTED BY BILL BEERS, LEECH INDUSTRIES

Leech Industries is celebrating its 70th anniversary in 2018 with the fourth generation in place. The company strives to offer competitive pricing and on-time delivery while maintaining stringent standards of quality. Statistical process control techniques are used throughout manufacturing facilities as required, and the quality system implemented has successfully attained ISO 9001:2008 and AS9100 certifications.

Leech Industries is a staunch supporter of apprenticeship programs. Leech Industries has five apprentices currently. The program is a differentiator for us - not many companies in our area have programs like this, so we have been able to attract and retain young talent. The apprentices often come from local technical schools with a strong desire to learn, and a desire for a structured wage scale. Our company believes in the value of apprenticeships and we would like to see other NTMA members start or grow their own programs to help fill the manufacturing skills gap! Please contact me if you have questions about starting or growing your company's apprenticeship program.



Pictured: current class of apprentices at Leech Industries

FEATURE

NATIONAL TOOLING AND MACHINING ASSOCIATION

"APPI" CONTINUED

these increases.

Factors that drive energy demand typically create an upward pressure on prices. If summer proves hot, it is likely that we will see energy prices increase accordingly.

SUPPLY

A hot summer, driving demand, may have a negative impact on certain areas of the country. Southern California and Texas have expressed concerns about their ability to meet demand this summer, should we experience (as is predicted) above-average temperatures. In Southern California, lower-than-average hydropower generation, combined with our unusually low natural gas supplies (the result of a cold spring, which has brought natural gas stocks 24.6 percent lower than the five-year average) may create challenges for grid operators in the area. California plans to utilize demand response incentives and consumer conservation initiatives to combat the threat of blackouts.

In Texas, it's a similar story. In recent months, the Lone Star state saw the retirement of several large coal-fired plants, and one large gas-fired resource. These retirements have resulted in the loss of 4,334 megawatts of generating capacity. Additionally, three gas-fired resources, planned to come online before or during the summer of 2018, have been delayed beyond the season, depriving the grid of 1,193 MW of generating capacity. ERCOT expects that it will have sufficient

operational tools to maintain reliability, but it is expected that prices in Texas will peak, in the event of a hot summer.

Despite everything, natural gas production remains very strong. Oil prices have been driving up drilling activity, with 132 rigs added to total rig count, year-over-year. Total U.S. crude oil production, as of this article's composition, was 15.9 percent higher than it was the same week a year ago. This is important, because increased oil production leads to higher natural gas production. This is because most wells in the U.S. produce both oil and natural gas. When oil prices are higher, it encourages the development of new oil rigs, which in turn contributes to stronger natural gas production.

When examining energy procurement strategies during the summer months, we typically find that it is best to start early, especially if there's a contract expiring in July or August, when demand could be at its highest. By examining pricing in May or June, even for a contract that expires months (or even a year) in the future, it maximizes the time that we have to monitor the market and identify



an ideal price point. Waiting until a contract expires to examine renewal pricing could subject a business to the upward pricing pressures present during the peak demand season.

Additionally, we have a number of services available in the APPI Energy Intelligence Suite that are designed to help businesses utilize data-driven solutions to reduce and manage energy expenses. Services such as demand response, renewable energy procurement, and utility management systems are ideal for businesses that seek efficient solutions to summer's peak demand conditions.

For more information about how APPI Energy can help your business prepare for the summer season, please contact us online or via our phone number, 800-520-6685.



5 SHOP FLOOR PROBLEMS THAT DRIVE CUSTOMERS AWAY

(AND HOW YOU CAN MAKE THEM DISAPPEAR)

BY MIKE MELZER, VICE PRESIDENT OF OPERATIONS, GLOBAL SHOP SOLUTIONS

If you ask 10 different manufacturers to identify their toughest problem, odds are at least half will say, "We can't get parts through the shop floor fast enough." When you think about it, their answer shouldn't come as a surprise. Today's manufacturing customers demand increasingly shorter turnaround times. They consider changes to jobs in progress to be your problem, not theirs. And by the way, they expect you to deliver on time, every time. In such an environment, if you don't run a lean, mean shop floor, you're going to struggle to meet those demands. If you're not getting parts through the shop in time to satisfy your customers, these five problems could be part of what's getting in the way.

PROBLEM #1

LACK OF DATA VISIBILITY

Few things are more frustrating (and costly) than watching machinists stand around because they don't know what to work on next. Yet, that's just one of the many issues that occur when real-time information doesn't flow



WITHOUT REAL-TIME DATA, YOU'RE CONSTANTLY STUCK IN REACTIVE RATHER THAN PROACTIVE MODE.

through the shop floor in a timely manner. Others include poor communication between work centers and departments, difficulty tracking the status of work in progress, and not being able to see how scheduling changes will affect other jobs in progress. Without real-time data, you're constantly stuck in reactive rather than proactive mode.

SOLUTION:

The solution starts with implementing a fully-integrated ERP system where everyone has access to the data they need to make in-the-moment decisions with the click of a mouse or swipe of a finger. Meeting customer demands as they happen rather than when you can get around to them requires an ERP system that

provides:

- Instant access to live data as projects move through the shop floor
- Detailed information on the status of every step of a project
- Dashboards that can display live data throughout the shop floor
- Real-time information on bottlenecks as they occur
- Automatic alerts to "hot" jobs that are behind schedule

When people have the data they need, everyone works from the same page rather than their own agendas.

"We used to guess about the status of most jobs," says John Davis, ERP director for Leiden Cabinet. "Now we simply log-in to our ERP system and all the data we need is right there. Improved shop floor control has by far been the biggest benefit of our ERP system."

PROBLEM #2

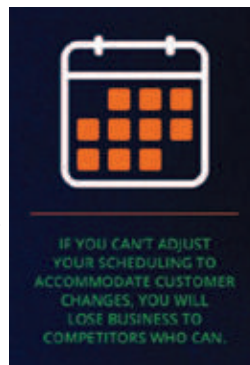
SCHEDULING IS A MESS.

Scheduling is second on the list for two reasons. One, it initiates and drives the flow of work through the shop. Two, if you can't adjust your scheduling to accommodate customer changes, you will lose business to competitors who can.

Not knowing the true capacity of your labor, machines and work centers makes it difficult to establish realistic schedules, especially with short due dates. The inability to engage in "what if" scheduling scenarios makes it equally hard to adjust your schedule on the fly. When you can't see how inserting a hot job into the schedule will affect everything else, all you can do is guess.

SOLUTION:

Meeting current market demands requires an ERP system with robust scheduling capabilities, starting with advanced finite/infinite scheduling to provide the real-time data necessary to conduct ac-



IF YOU CAN'T ADJUST YOUR SCHEDULING TO ACCOMMODATE CUSTOMER CHANGES, YOU WILL LOSE BUSINESS TO COMPETITORS WHO CAN.

curate "what if" scenarios. The ability to move jobs up or back days, weeks or even months allows you to meet customer changes (or negotiate realistic due dates) based on real data rather than guesswork. Other features to look for include:

- A Master Schedule Dashboard that lets you see schedules by department, work center, project, work order and bill of material (BOM).
- Ability to schedule similar jobs by work center
- Real-time reporting on job status
- Employee, tool and material scheduling

"Our scheduling module lets us easily see where we have available time on our machines in case we need to move up a job or push others out," says Dave Dahl, Plant Manager for the custom fabricator Alexandria Pro-Fab. "Whenever we make a change to the schedule, the system immediately shows how it will affect every other job. As a result, our on-time delivery rate averages 98 percent."

PROBLEM #3

INCORRECT ROUTERS, WORK ORDERS AND BOMS.

Moving parts through the shop in a timely manner depends to a large degree on the accuracy of your routers, work orders and BOMs. Get them right and jobs flow smoothly and efficiently from one step to the next. Get them wrong and everything can grind to a halt.

Incorrect routers and work orders are a major source of quality problems, which, in turn, are a major source of missed due dates due to rework or the need to produce more parts due to unacceptable quality. Meanwhile, large, manually-driven BOMs practically invite data error problems and can take weeks or even months to build.

SOLUTION:

This is one problem with a straightfor-

SEE "SOLUTIONS" NEXT PAGE



STOP DOING THESE DOCUMENTS BY HAND AND START DOING THEM ELECTRONICALLY.

ward fix: stop doing these documents by hand and start doing them electronically. Most ERP systems offer basic features that make it possible to electronically send error-free routers and work orders to the shop floor. However, the really big time savings come from advanced features that eliminate the need for manual data entry and the human error that goes along with it.

- **EDI.** Electronically import customer orders, change orders, rev updates and more.
- **CAD INTERFACE.** Automatically import the dynamic BOM into your ERP software.
- **BOM COMPARE.** Compare your ERP BOM with the CAD/CAM BOM to quickly identify any discrepancies.
- **-PRODUCT CONFIGURATOR.** Build huge, accurate multi-level BOMs in minutes.

When you build and deliver routers, work orders and BOMs electronically, you'll be amazed at how your rework shrinks.

PROBLEM #4

INVENTORY SUCKS.

It's bad enough when machinists stand around because they don't know what to work on next. It's doubly infuriating when they know what to do but don't have the parts on hand to do it. In addition to causing jobs to be late, inventory problems have a way of spreading into other areas of the business. For example, over-purchasing so you don't run out of parts. Expedited shipping costs to get materials in and jobs out at the last minute. Inventory counts that take days to complete. These, and other issues, all conspire to drive up costs while lowering efficiency and customer satisfaction.

SOLUTION:

Maintaining accurate inventory is like raising kids – it takes a village. Meaning it's everyone's responsibility. It starts with barcoding all incoming materials and electronically receiving them into the system as soon as they arrive. Instead



of climbing over shelves to see what's in stock, a few clicks of the mouse will identify everything you have in inventory, what's on order, and when it's scheduled to arrive.

Your inventory module should offer advanced features such as automatic re-order capabilities (with the ability to set min/max set points), lot-bin tracking to provide complete traceability, material drop tracking, and more. You'll also need label printing capabilities, a quality module that automatically adjusts inventory due to rework, and a planning and scheduling module that integrates with inventory to provide updates on job changes that impact inventory delivery dates.

Get your inventory right and you'll know your inventory costs down to the penny. You'll know when you bought every material and why. And you won't have to worry about a \$10 part holding up a \$50,000 project.

"In the past, locating the right mold for a job could take hours," says Jay Jolly, Co-Owner of Advanced Plastiform. "Now that everything from tooling to materials has its own barcode label, we find it in seconds."

PROBLEM #5

INEFFICIENT MATERIALS MOVEMENT.

Just because you have sufficient parts and materials in inventory doesn't mean they will get to the right place at the right time. In the past, you could get by with handwritten pick and move tickets. These days, not so much. Manually tracking material movement inevitably leads to problems, including:

- Lost or misplaced inventory
- Employee downtime when parts don't arrive on time
- Jobs shipped late
- Lack of traceability required to meet government and industry standards
- Inaccurate manual inventory counts

The list goes on and on. Fortunately for manufacturers willing to step up to the latest in mobile technologies, it doesn't have to.



SOLUTION:

With mobile materials movement – which combines the latest in barcode, handheld printing, and mobile device technologies – you can perform this essential task with unprecedented speed, visibility and control. You also get complete traceability of every piece of material that moves through the shop.

Mobile materials management starts with barcoding all types of inventory, not just incoming parts and raw materials. Simply scan the barcoded label of everything that comes into your shop, and the ERP mobile application records the transaction in real time, thereby eliminating data entry errors and producing real-time transactional labels to speed up the materials management process.

With mobile, you can automatically receive advance purchases into your inventory default bin or stocking bin. You can issue material for a work order at the point of picking, making bin-to-bin transfers a snap. You can even label materials picked to WIP by printing a transactional issue-to-work order label. And you can do it anywhere, at any time, using your tablet or other mobile device.

Every manufacturer has struggled with these five problems at one time or another. So, if you're losing sleep over them, you aren't alone. Global Shop Solutions helps manufacturers around the globe put these problems behind them, and we can help you too.

To learn more about the 5 Shop Floor Problems That Drive Customers Away (and How You Can Make Them Disappear), call 1.800.364.5958 or visit www.globalshopsolutions.com.

ABOUT THE AUTHOR

Mike Melzer serves as VP of Operations for Global Shop Solutions, and is a 20-year veteran of the company. As a graduate from The Colorado School of Mines, Melzer is an unparalleled leader, coaching the industry's top talent to ensure the continued success of Global Shop Solutions customers.



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IF YOU WEREN'T IN ST. LOUIS, HERE'S WHAT YOU MISSED AT THE BIG HAIRY AUDACIOUS GROWTH CONFERENCE

This year's sales and marketing event, The Big Hairy Audacious Growth Conference, delivered. Members from across the country met in St. Louis, Missouri from June 6 through June 8.

Conference goers kicked off their experience with an interactive opening session that answered questions to help them evaluate their current marketing strategies. The follow up session introduced them to Martin Coco, Director of Ticket Sales & Marketing for the St. Louis Cardinals. He addressed how and why you should pick a specific audience and talked about utilizing the most successful marketing strategies.

Panel discussions highlighted best sales and marketing practices, diversification and the growth behaviors of Top Shops. Special sessions analyzed how you should implement new ideas and tactics and how to quantify your online marketing ROI and much more.

Michael Guckes, Chief Economist for



Above: Moderated Roundtable Discussion. Below: Presentation by Martin Coco

Gardner Business Media, addressed how current economic situations and trends can and should impact sales and marketing decisions.

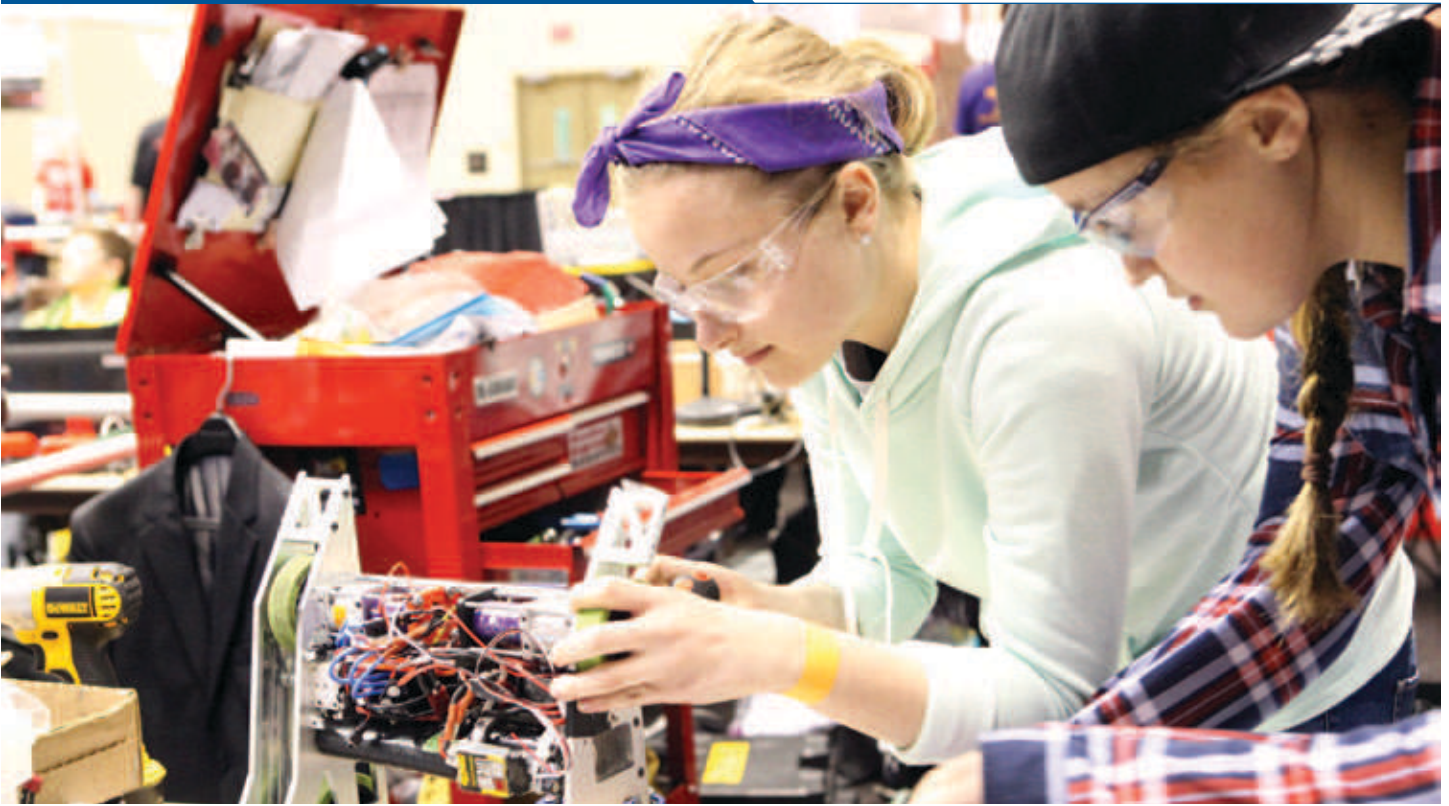
Attendees enjoyed a St. Louis Cardinals game and great networking opportunities throughout the three-day conference, including a tour of the Anheuser-Busch Brewery.

A special thank you to our breakfast sponsor, Anders CPAs + Advisors.



Top left: St. Louis Cardinals game. Bottom left and right: Anheuser-Busch Brewery tour





JUST THE FACTS

BY BILL PADNOS, NTMA, DIRECTOR OF YOUTH ENGAGEMENT

For the past five years, I have been able to utilize other people's research in promoting facts and figures about the growing effect of the skills gap on the U.S. manufacturing community. This morning during meetings in Chicago, I threw out all of the key stats:

- 2 million manufacturing worker shortage by 2025
- Currently, there are 600,000 – 1,000,000 open jobs in manufacturing
- 97 percent of NTMA members report at least one skilled job opening
- Women only represent 29 percent of the manufacturing workforce
- Companies with a diverse workforce earn 35 percent more in profits than a homogenous workforce
- Manufacturing companies lose 11 percent in profits due to increased overtime expenditures
- 64 percent of high school students will pick their career pathways based on interests and experiences
- Workforce development is the number one issue facing NTMA members

I know these stats like the back of my hand, but I also understand that no matter

how many times these facts are repeated, they don't lose their impact for NTMA members and all manufacturing companies. These stats are the cold, hard truth that is not going away anytime soon. This is not something that you want to say as the association's director of youth engagement, but these are the facts.

With the baby boomer retirement tsunami building up steam and heading straight for us, everyone is throwing up ideas about how to stop it. Associations, corporate foundations and government organizations are spending thousands and thousands and thousands of dollars on outreach programs, scholarships, web sites and pretty pamphlets to try to convince this next generation that manufacturing is a viable career option. I am a member of Generation X, and we are the lost generation when it comes to manufacturing. The key is WHO is coming up the pipeline. Can we change their mindset? Will they pursue careers in manufacturing instead of going to the University of . . . to major in 6 years of "undecided?"

In the end, the answer to this problem is not in the hands of the association, corporate foundation or government organiza-

tions. It is in the hands of each member of the NTMA and of PMA, PMPA, FMA or in reality, each and every manufacturing company. The only way to solve the skills gap is for manufacturing companies to connect with our youth and convince them that jobs in manufacturing are the best choice. It is critical for NTMA members to utilize the resources in front of them to solve their own individual workforce development issues.

Look around your facility. How many of your employees are going to be working in five years, in 10 years, in 20 years? Then, look around the community that surrounds your shop. How many students are within 5, 10 and 20 miles of your shop? Wouldn't it be great to have the opportunity to engage them and build the future workforce that you need? We have the ways to make it happen, you just need to be ready to launch.

Next month, we'll focus on Manufacturing Day and the importance of opening your doors to community so they can see what you do. We are looking to double the number of NTMA members participating in the event. Will your company celebrate Manufacturing Day?



CELEBRATING 75 YEARS MADE STRONG

FALL CONFERENCE 2018

OCTOBER 23 – 26 • DENVER, CO



NATIONAL TOOLING AND MACHINING ASSOCIATION

FEATURED SPEAKERS

CAITLIN ANDREWS

Wednesday, October 24 • 10:00AM - 11:00AM | 3:15PM - 4:30PM

Caitlin Andrews has a decade of experience in strategic communications. Her focus is on the design and implementation of comprehensive, multi-platform communications campaigns for a range of companies and associations in various sectors, including manufacturing, consumer products, national security, healthcare, energy and the environment. Caitlin leads the Policy Resolution Group's digital communications program, providing comprehensive brand development counsel, including sophisticated social media management and its use for effective advocacy. Caitlin was recognized by PR News on their list of 15-to-Watch in 2011.



JOHN GUZIK

Wednesday, October 24 • 10:00AM - 11:00AM

John Guzik is a founding partner of The Franklin Partnership with over 20 years of Capitol Hill and campaign experience. Previously, John served as Chief of Staff for Ways and Means Chairman Dave Camp. He was the top legislative strategist working on tax, trade, health care, transportation and agriculture issues. John also works closely with the Senate Finance Committee on health care, tax, trade and many other issues important to his clients.



OMAR NASHASHIBI

Wednesday, October 24 • 10:00AM - 11:00AM

For nearly ten years, Omar Nashashibi has worked with clients, members of Congress, agency officials, public policy foundations, non-profits and media in Washington, D.C. A founding partner of The Franklin Partnership, Mr. Nashashibi works with members of Congress on behalf of his clients on a variety of issues from trade to federal funding opportunities to telecommunications.





PAUL NATHANSON

Wednesday, October 24 • 10:00AM - 11:00AM

With more than 25 years of experience in strategic, crisis and corporate communications, Paul Nathanson's focus is on reputation management, message development and implementation, public policy analysis, media relations and strategic counseling services for a range of U.S. and international clients. He assists clients in formulating arguments in persuasive ways and ensures that clients' views are heard and understood by their target audiences, including Members of Congress, policymakers, the news media and the public.

BRANDON DEMPSEY

Wednesday, October 24 • 12:30PM - 2:00PM

Thursday, October 25 • 9:00AM - 10:00AM

An adventurer, entrepreneur and father, Brandon is a serial entrepreneur and driving force behind his marketing firm goBRANDgo!, specializing in outsourced marketing services for privately held \$10-100 million growth oriented companies. Brandon is a featured thought leader in numerous online and print outlets, such as Forbes, Inc., and Huffington Post. When he isn't working, he spends his time training for Ironman triathlons and motorcycling through countries around the world. Brandon lives in St. Louis with his wife Adriene, their daughter and two dogs.



PETER ZEIHAN

Wednesday, October 24 • 2:00PM - 3:00PM

Strategist, Thinker, Futurist, Speaker, Zeihan's worldview marries the realities of geography and populations to a deep understanding of how global politics impact markets and economic trends, helping industry leaders navigate today's complex mix of geopolitical risks and opportunities. With a keen eye toward what will drive tomorrow's headlines, his irreverent approach transforms topics that are normally dense and heavy into accessible, relevant takeaways for audiences of all types. In his career, Zeihan has ranged from working for the US State Department in Australia, to the DC think tank community, to helping develop the analytical models for Stratfor, one of the world's premier private intelligence companies. Mr. Zeihan founded his own firm — Zeihan on Geopolitics — in 2012 in order to provide a select group of clients with direct, custom analytical products.

DEBORAH ELAM

Friday, October 26 • 1:00PM - 2:00PM

From graduate intern to GE's first-ever black female corporate officer, Deb dedicated her career to diversity, philanthropy and inclusion. She oversaw efforts to embrace diversity in order to create an environment where GE employees are able to thrive and contribute to the company's success in the global economy. Her experience spans across multiple organizations within the corporation. After thirty years with the multinational conglomerate, Deborah Elam has retired from her dual role at General Electric as Chief Diversity Officer, as well as President of the GE Foundation. Most recently, Deb launched Corporate Playbook, a business consulting firm in which she serves as President and CEO. The firm coaches organizations to elevate diversity, inclusion and philanthropy. Its specializations include executive development, strategic solutions and the empowerment of women to shatter the glass ceiling.



GENERAL SESSIONS



IMPACT OF 2018 ELECTIONS ON THE TRUMP AGENDA

Wednesday, October 24 • 10:00AM - 11:00AM

The Franklin Partnership & Bracewell Update: Omar Nashashibi, John Guzik, Caitlin Andrews & Paul Nathanson

With the 2018 congressional elections just days away, this is your chance to hear directly from Washington insiders about how the potential results will impact the Trump Administration's agenda. NTMA's consultants with The Franklin Partnership and the Policy Resolution Group at Bracewell will provide an update on how the elections could change the outlook for tariffs, taxes, regulations and workforce development. The first two years of the Trump presidency were filled with action; come hear what is in store for the remainder of the President's first term and the effects of Democrats possibly taking control of the House, Senate or both.

NO ASSEMBLY REQUIRED: THE FUTURE OF GLOBAL MANUFACTURING

Wednesday, October 24 • 2:00PM - 3:00PM

Speaker: Peter Zeihan, Founder, Zeihan on Geopolitics

The world of manufacturing is an endlessly specialized venture, with most manufacturers sourcing components from scores of facilities across a dozen or more countries. But what if the ability to sail components from site to site became compromised? What if capital availability proves insufficient to update industrial bases as technology evolves? What if intermediate and end markets become less desirable – or less accessible? All that and more is about to happen, which signals the end of manufacturing as we know it. The successful manufacturers of the future will be those who can command access to raw materials, capital, labor and markets – all in the same location.



WORKFORCE DEVELOPMENT PANEL

Wednesday, October 24 • 3:15PM - 4:30PM

Moderated by: Caitlin Andrews, Director, Policy Resolution Group at Bracewell, LLP

Hear from a diverse group of educators, industry experts and NTMA members on the most pressing topic in today's shops – people. Our panelists will share best practices and lessons learned on engaging with your community to build the talent pipeline, attracting the best talent and creating a culture and environment that delivers results and keeps your top performers engaged.



HR SOLUTIONS CIRCLE

Thursday, October 25 • 9:00AM - 10:00AM

Facilitated by: Brandon Dempsey, Partner, goBRANDgo!

A collaborative group activity where each person states a burning issue or challenge; then each challenge gets its turn at the table for the group to help brainstorm ideas and provide advice on each problem. At the end, the group will have a table of ideas and solutions.

STRATEGIES TO ATTRACT AND RETAIN DIVERSE TALENT TO DRIVE IMPRESSIVE BUSINESS RESULTS

Friday, October 26 • 1:00PM - 2:00PM

A Q&A with Deborah Elam, former Chief Diversity Officer and President of GE Foundation at General Electric Company

Competition for trainable, technically skilled labor is fierce in the precision manufacturing sector. Innovative approaches to sourcing, onboarding and keeping diverse talent are more imperative than ever. In this session, you will gain valuable insights and learn how to develop your own playbook to attract and retain diverse talent in an inclusive environment. Don't miss out on the opportunity to leverage this key competitive advantage and growth enabler.



IGNITE SESSIONS

Sessions 1 & 2: Thursday, October 25 • 1:00PM - 2:45PM

6S/Lean – Creating a Workplace That is Safe, Clean, Efficient and Productive

What to expect:

- » Continuous Improvement Boot Camp – where to start and how to sustain

Team Engagement – Developing a Culture That Thinks and Acts Like Owners

What to expect:

- » Recognition and Communication – the secret ingredients of a healthy team
- » Leadership Development and Talent Succession – mentoring and coaching 101

Sessions 3 & 4: Friday, October 26 • 9:00AM - 10:45AM

Analytics and Information Management – Ensuring Our Data is an Asset

What to expect:

- » Strategies for cultivating and harvesting the data we already have

The Future of Manufacturing – Implementing the Essential Technologies

What to expect:

- » Technology Integration – trends in machinery, fixturing, tooling, and successfully integrating robotics and maximizing unattended operations



EMERGING LEADERS SESSION

Wednesday, October 24 • 12:30PM - 2:00PM

Speaker: Brandon Dempsey, Partner, goBRANDgo!

Tools and Techniques to Step Up Your Leadership “Game” and Team Engagement Levels

Leading in today’s workforce requires a unique set of communication methods and tools. Why do some leaders struggle, while others constantly succeed at growing and engaging their teams? Come learn what these leaders are doing to grow and win in this challenging environment and walk away with ACTIONable tools and techniques you can implement.

BUSINESS SOLUTIONS WORKSHOPS

Thursday, October 25 • 10:15AM - 11:15AM | 11:30AM - 12:30PM

(all tracks repeat)

Financial Managers Solutions Workshop

Tax Landscape Update: Many companies struggle to stay informed, navigate and plan for the ever-shifting tax landscape they operate in. Take stock of your current tax landscape and assess current and future opportunities to increase the value of your business through tax planning strategies as well as reduce risks to your business. Come to discuss new tax law updates and practical considerations, common tax incentives in our industry and how to take advantage of them and common tax pitfalls and how you can avoid them.

Workforce Development Solutions Workshop

This session will be a lively mix of updates on major NTMA workforce development projects (NTMA-U Series 1 refresh, pre-apprenticeship program and more) and best practices in human resources and workforce development. These topics may include outreach to veterans and National Guard members, methods to entrench with your local school boards and community partners, new ways to market your companies to different generations and strategies to create an inclusive environment that will drive better business results.

Safety Solutions Workshop

Since safety is a chief concern for our members, NTMA has leveraged its partnership with Grainger, the international leader in safety solutions, to help their business become safer and more efficient. Grainger experts will discuss best practices in workplace safety and provide their unique perspective on OSHA compliance while providing a treasure trove of safety resources to take back to the shop.

Software Solutions Workshop

Grainger provides NTMA member companies with deep discounts on the products that help their businesses “get it done”, but they offer so much more as well. This session will explore how Grainger.com can be effectively utilized to significantly reduce procurements costs, manage ordering and inventory and drop substantial savings right to your bottom line.

Sales and Marketing Solutions Workshop

Value Stream Selling: Almost every corporate manufacturer has an operational excellence process which determines how work is done. For many, either Lean or Six Sigma or a combination of these two are used to define processes. By learning the operational excellence method of each customer, some shops have found significant, loyal success in delivering customer value and increasing sales. We’ll look at the programs used by customers and how to use them to our advantage using Value Stream Selling methods.

CELEBRATING 75 YEARS MADE STRONG



JOIN US ON THE BLUE CARPET AT THE 75TH ANNIVERSARY AWARDS GALA

It will be an anniversary celebration to remember! We invite you, our guests of honor, to walk the blue carpet at this black tie optional event. We are celebrating 75 years of companies who adapt and develop with the changes that come with time. We are celebrating 75 years of companies that recognize that we are stronger when we support each other. We are celebrating 75 years of men and women who believe that through networking, education and advocacy we are building our industry into a legacy for generations to come.

Join us in recognizing our Past Chairs, as we acknowledge those who have provided great leadership through the years. Our Founding Delegates, those companies who have been part of NTMA from the very beginning days, will be in attendance to present awards to NTMA members who are making monumental impacts on the future of our industry. We'll award NTMA members with the Honor Award, William E. Hardman Award, Distinguished Service Award, LA Sommer Award and of course our Years of Service Awards. The NTMA will also proudly present the 6S Awards and announce this year's Star Chapters, Most Improved Chapter and Chapter of the Year.

It will be an evening to recognize excellence, honor our history and inspire future success. It will be an evening to acknowledge you—and your contributions to the precision metalworking industry.

75TH ANNIVERSARY GALLERY

Walk through 75 years of NTMA history in our special diamond anniversary photo gallery. See the faces, the places and the history as the precision manufacturing industry has grown and evolved over the years.



EVENING EVENTS

NRL FUNDRAISER

Tuesday, October 23 • 7:00PM - 10:00PM

Registration Rate: \$25 per person • \$50 for a team

Back by popular demand, simply because it was a whole lot of fun, we are kicking off opening night with our 2nd Annual Cornhole Tournament. Pair up with a favorite teammate or let NTMA help you connect with another member, and help us Toss Out the Skills Gap. The winning team will go home with a special trophy and bragging rights! All proceeds will benefit the National Robotics League. Watch for a link to register!



NTMF COCKTAIL HOUR

Wednesday, October 25 • 6:00PM - 7:00PM

Network with the industry's best and brightest before our Diamond Anniversary celebration. Enjoy light hors d'oeuvres and cocktails and have your picture taken with friends as you make your way down the blue carpet.

75TH ANNIVERSARY AWARDS GALA

Wednesday, October 24 • 7:00PM - 11:00PM

Suggested Dress: Black Tie Optional

Come enjoy an event that will be remembered for years to come as NTMA celebrates 75 years of making America strong together. The gala will feature an awards ceremony highlighting the key achievements and achievers of the first 75 years of NTMA's history. After the awards are announced, put on your dancing shoes and help us close out the night in style!

PAC RECEPTION

Thursday, October 25 • 4:30PM - 5:30PM

Come have a drink on us as we celebrate those who support NTMA's Political Action Committee (PAC). Talk with John Guzik and Omar Nashashibi of The Franklin Partnership to learn more about all of our recent successes on the Hill and what you can do to become involved.

CASINO NIGHT AT WYNKOOP BREWING CO.

Thursday, October 25 • 7:00PM - 10:00PM

Suggested Dress: Casual

Meet with old friends and make new ones as you help support the Government Affairs Administrative Fund (GAAF) at Wynkoop Brewing Company, Colorado's First Brewpub, home to tastemakers and rulebreakers, bushwhackers and envelope pushers. Purchase all the chips you'd like and put your winnings towards one of our many raffle prizes. In between the gambling hopefully you'll find some time to take a brewery tour or challenge your colleagues to a game of pool, darts or shuffleboard! Dinner and drinks will be provided.

OPTIONAL ACTIVITIES

COORS FIELD TOUR

Wednesday, October 24 • 11:15AM-1:45PM

Registration Rate: \$25

Named for Denver's famed beer, Coors Field in Denver's LoDo district is home to Major League Baseball's Colorado Rockies. Visit areas you wouldn't get to see if you simply attended a game. **Please note:** Should the Rockies make the World Series, we will be offering a different optional activity during this time.

3RD ANNUAL 5K

Thursday, October 26 • 7:30AM

Registration Rate: \$35

Be part of NTMA's third annual 5K and join your fellow NTMA members for a race through downtown Denver. Get in the competitive spirit and invite your whole crew to watch and network before and after the race. All participants will receive a race t-shirt. Medals will be awarded to the top male and female runners.

COORS BREWERY TOUR

Thursday, October 25 • 1:00PM-4:30PM

Registration Rate: \$20

See and taste traditional brewing at the foot of the Rocky Mountains. Since 1873 the Coors Brewery has thrived on a legacy of quality, innovation and customer service. The tour showcases the company's history and passion for brewing. After the tour sit back, relax and enjoy a fresh Coors beer!

PLANT TOUR

Friday, October 26 • 2:15PM-4:30PM

A Tour of Hirsh Precision

Come experience the latest in advanced manufacturing at Hirsh Precision. Visual management, high mix production scheduling, shop floor automation and outstanding team engagement will be apparent during the tour. Hirsh Precision was just named a 2018 Top Shop by Modern Machine Shop for Shop Floor Practices!



HOTEL AND DENVER INFO



GRAND HYATT DENVER

1750 Welton St. • Denver, CO, USA, 80202 • 303.295.1234

Treat yourself to an exceptional experience at Grand Hyatt Denver. Our AAA Four Diamond hotel in Denver, CO welcomes you with beautifully designed guestrooms and premium amenities that make your stay easy and comfortable. Discover what happens when urban luxury meets personalized service and enjoy instant access to everything exciting that Denver has to offer.

Prime downtown location: Situated near 16th Street Mall and the city's most popular historic, cultural and entertainment venues

Room Block Information: NTMA has a negotiated room rate of \$240 per night with the Grand Hyatt. The cutoff date to reserve your room at the negotiated rate is Friday, September 28. Rooms are available based on availability. To make your reservation by phone, call 303-295-1234 and reference NTMA Fall Conference, or you can make your reservation online by following the link: <https://book.passkey.com/go/NTMA18>

ABOUT DENVER

Experience one of the most walkable downtowns in the nation.

Denver boasts the 10th largest downtown in America and is one of the most exciting and walkable. Within a mile radius, downtown Denver has three major sports stadiums, the nation's second-largest performing arts center, three colleges with 30,000 students, an assortment of art and history museums, a mint that produces 10 billion coins a year, a river offering white water rafting, more than 8,400 hotel rooms, a \$140 million theme and water park, a \$100 million aquarium and 300 restaurants.

Things to See and Do in Denver:

- » 16th Street Mall
- » Botanical Gardens
- » Children's Museum
- » Clyfford Still Museum
- » Coors Field (Colorado Rockies)
- » Denver Aquarium
- » Denver Art Museum
- » Denver Center for the Performing Arts
- » Denver Mint
- » Denver Museum of Nature and Science
- » Denver Pavilions
- » Denver Zoo
- » Red Rocks Park

TRANSPORTATION

Getting to and from the Denver Airport

Location: 23 miles from Downtown Denver

Travel Time: Typically 30-40 minutes

Convenience: A new airport rail line whisks visitors to the downtown area for only \$9 each way



SCHEDULE

Meetings Marked ♦ are open to Team Members or by invite only

Meetings Marked ♦♦ have limited lunches available and are first come, first served

Schedule Subject to Change

TUESDAY, OCTOBER 23

1:00PM – 5:00PM	Regiception: Sponsored by BIG Kaiser A reception and registration wrapped in one! Come register for all your Fall Conference sessions and events while enjoying a drink and networking with all the attendees.
4:00PM – 5:00PM	First Timer's Reception ♦
7:00PM – 10:00PM	2 nd Annual Cornhole Tournament - NRL Fundraiser

WEDNESDAY, OCTOBER 24

8:00AM – 5:00PM	Registration
8:00AM – 5:00PM	75 th Anniversary Gallery
8:00AM – 5:00PM	Exhibit Tables
8:00AM – 9:00AM	Continental Breakfast
7:00AM – 8:30AM	NTMF Board Meeting & Breakfast ♦
9:00AM – 10:00AM	General Membership Assembly - NTMA Update & Healthcare Update
10:00AM – 11:00AM	General Session 1: Impact of the 2018 Elections on the Trump Agenda The Franklin Partnership & Bracewell Update
11:00AM – 11:15AM	Networking Break
11:15AM – 1:45PM	Optional Activity: Coors Field Tour
11:15AM – 12:30PM	Board of Trustees Meeting
12:30PM – 2:00PM	Team Meetings with Lunch Budget & Finance Team Meeting ♦ Government Affairs Team Meeting ♦♦ Education Team Meeting ♦♦ Chapter Executive Team Meeting ♦♦ Emerging Leaders Session ♦♦
2:00PM – 3:00PM	General Session 2: No Assembly Required: The Future of Global Manufacturing Speaker: Peter Zeihan
3:00PM – 3:15PM	Networking Break
3:15PM – 4:30PM	General Session 3: Workforce Development Panel Moderated by: Caitlin Andrews
6:00PM – 7:00PM	NTMF Cocktail Hour
7:00PM – 11:00PM	75th Anniversary Awards Gala (Onsite) - Black Tie Optional

SPECIAL THANKS TO OUR SPONSORS

PLATINUM PREMIER SPONSOR LEVEL



SILVER SPONSOR LEVEL



BRONZE SPONSOR LEVEL



THURSDAY, OCTOBER 25

7:30AM	Optional Activity: NTMA 3 RD Annual 5K
8:00AM - 5:00PM	Registration
8:00AM - 5:00PM	75 th Anniversary Gallery
8:00AM - 5:00PM	Exhibit Tables
8:00AM - 9:00AM	Continental Breakfast
8:00AM - 9:00AM	Nominating Team Meeting & Breakfast ♦
9:00AM - 10:00AM	General Session 4: HR Solutions Circle Facilitated by: Brandon Dempsey
10:15AM - 11:15AM	Business Solutions Workshops: Financial Managers Solutions Sales and Marketing Solutions Workforce Development Solutions Safety Solutions Software Solutions
11:15AM - 11:30AM	Networking Break
11:30AM - 12:30PM	Business Solutions Workshops: Financial Managers Solutions Sales and Marketing Solutions Workforce Development Solutions Safety Solutions Software Solutions
12:30PM - 1:00PM	Lunch
1:00PM - 4:30PM	Optional Activity: Coors Brewery Tour
1:00PM - 1:45PM	IGNITE Session 1: 6S/Lean - Creating a Workplace That is Safe, Clean, Efficient and Productive
2:00PM - 2:45PM	IGNITE Session 2: Team Engagement - Developing a Culture That Thinks and Acts Like Owners
2:45PM - 3:00PM	Networking Break
3:00PM - 4:30PM	Industry Roundtables: Aerospace Tools, Dies & Molds Medical Precision Machining 1 Precision Machining 2
4:30PM - 5:30PM	PAC Reception
7:00PM - 10:00PM	Casino Night at the Wynkoop Brewery (Offsite) - GAAF Fundraiser

FRIDAY, OCTOBER 26

8:00AM - 11:00AM	Information Center
8:00AM - 11:00AM	75 th Anniversary Gallery
8:00AM - 11:00AM	Exhibit Tables
8:00AM - 9:00AM	Continental Breakfast
9:00AM - 9:45AM	IGNITE Session 3: Analytics and Information Management - Ensuring Our Data is an Asset
10:00AM - 10:45AM	IGNITE Session 4: The Future of Manufacturing - Implementing the Essential Technologies
11:00AM - 1:00PM	Team Meetings with Lunch WD Meeting ♦ Past Chair & Spouses Lunch ♦ ♦ Tech Team Meeting & Lunch ♦ ♦
1:00PM - 2:00PM	General Session 5: Strategies to Attract and Retain Diverse Talent to Drive Impressive Business Results A Q&A with Deborah Elam
2:15PM - 4:30PM	Optional Activity: A Tour of Hirsh Precision

REGISTRANT INFORMATION



National Tooling & Machining Association:
1357 Rockside Road
Cleveland, OH 44134

Name:	Additional Employee:
Company Name:	Title:
Title:	Email:
Email:	Phone:
Phone:	Spouse/Guest:
Company Address:	
City/State/Zip:	
Spouse/Guest:	

REGISTRATION FEES PER PERSON

Early Bird Registration: Thru September 30TH (Members Only)

- ☐ NTMA Member (1ST Co. Employee): **\$1,195**
- ☐ NTMA Member (Additional Co. Employee): **\$895**
- ☐ Corporate Rate (3 or More Employees): **\$895 each** ◆
- ☐ Emerging Leader: **\$895** ◆
- ☐ NTMA Member Spouse: **\$895** ◆
- ☐ First Timer Rate: **\$595** ◆
- ☐ Chapter Executive Rate: **\$495**

Standard Registration: After September 30TH

- ☐ NTMA Member (1ST Co. Employee): **\$1,395**
- ☐ NTMA Member (Additional Co. Employee): **\$1,195**
- ☐ Corporate Rate (3 or More Employees): **\$995 each** ◆
- ☐ Emerging Leader: **\$995** ◆
- ☐ NTMA Member Spouse: **\$995** ◆
- ☐ Affinity Partners: **\$995**
- ☐ Non-Member (1ST Co. Employee): **\$1,495**
- ☐ Non-Member (Additional Co. Employee): **\$1,395**
- ☐ Non-Member Spouse: **\$1,095 each**

- ◆ Spouse rate includes either the Coors Brewery Tour or the Coors Field Tour (Additional fees added to attend both)
- ◆ To qualify for the Emerging Leader rate, you must have previously attended an Emerging Leaders Conference
- ◆ Corporate Rate is for Member Companies only (Does not include National Associate Members)
- ◆ First timer rate is limited to one attendee per company and those who have yet to attend a National Conference

Networking and Optional Events

- | | | |
|---|---|---|
| <input type="checkbox"/> 3 RD Annual 5K (\$35) | <input type="checkbox"/> Coors Field Tour (\$25) | <input type="checkbox"/> NRL 2 ND Annual Cornhole Tournament (\$25 per person/\$50 per team) |
| <input type="checkbox"/> Coors Brewery Tour (\$20) | <input type="checkbox"/> Hirsh Precision Plant Tour | |

Teammate Name ☐ Find me a Teammate

PAYMENT INFORMATION

Method of Payment

- ☐ VISA ☐ Mastercard ☐ American Express ☐ Check

Credit Card Number:	Signature:
Expiration Date: CVV Code:	Total Amount Due:

Please send via email, fax or mail. If any questions, contact:

NTMA: Kristen Hrusch, Brittany Belko

Kristen Hrusch: khrusch@ntma.org

Brittany Belko: bbelko@ntma.org

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ONE MAN'S MISSION TO STRENGTHEN MANUFACTURING KEEPS HIM RINGSIDE IN ROBOTICS AND POLITICS

AN INTERVIEW WITH STEVE STAUB, PRESIDENT OF STAUB MANUFACTURING SOLUTIONS BY CAITLIN ANDREWS, POLICY RESOLUTION GROUP, BRACEWELL LLP

Steve Staub is busy. He is President and Co-Founder of Staub Manufacturing Solutions, a metal fabrication and laser cutting company with about 40 employees. He is also the co-head, with Dan Griffith and Neil Arthur, of XtremeBots, the National Robotics League (NRL) program in Southwest Ohio which pairs student robotics teams with manufacturing industry partners to build and battle robots. In recent months, he was named to the Board of Directors for the National Association of Manufacturers (NAM), where he will work to advance a national policy agenda for manufacturing. Steve speaks passionately about the future of American manufacturing everywhere he goes, from local schools to the halls of the United States Congress. Steve sat down with NTMA for an interview this month to talk about the importance of engaging young people and policymakers.

YOU AND YOUR COLLEAGUES TOOK OVER THE XTREMEBOTS PROGRAM SIX OR SEVEN YEARS AGO. WHAT MADE YOU WANT TO TAKE THAT ON?

Being a part of the National Robotics League, for me, is really about getting kids to have an insider's view into manufacturing. We need young people, their parents, and their teachers to see the opportunities available in manufacturing careers today. XtremeBots gets kids in the door in a way that is engaging and fun. And, through the program, manufacturers connect directly with schools and students, giving them access to a pipeline of new, top talent. In that way, I see XtremeBots as an important part of our industry's overall growth strategy.

HOW DO YOU SECURE THE STUDENT TEAMS AND GET COMPANIES INVOLVED?

It's a matter of making the phone calls and beating the bushes to get people to participate. At this point, we have several companies who have made participation in the competition a part of their formal recruitment process. One local company has hired eight to 10 folks right out of the Bots program.

XTREMEBOTS NEEDED A NEW PLACE TO HOLD THEIR COMPETITION THIS YEAR, AND YOU DONATED YOUR WAREHOUSE TO HOST THE EVENT. WHAT WAS IT LIKE TO HOST THE EVENT AND HAVE ALL OF THOSE STUDENTS, TEACHERS, PARENTS AND FANS AT YOUR FACILITY?

Hosting the competition this year was fun. Our company recently purchased the



warehouse next door and it's still an empty space. So, we cleaned it out and set it up for the event. We already had the arena for the battles because we built our own a few years ago. We rented bleachers for spectators and also had a live online broadcast so people could tune in from home.

One thing that is important to me is making sure that all the kids who attend the competition get to experience manufacturing, not just the students on the Bots teams. So we have built in a 3D printing competition alongside the bots battles. We have seven 3D printers where kids can de-

sign and print pretty cool stuff. We've done hovercrafts, wind turbines, and rockets. The kids can print them and take them home.

WHAT ARE YOUR GOALS FOR XTREMEBOTS IN THE COMING YEARS?

I definitely want to expand the program, all the way around. We recently added Beth VanHareen to our Board of Directors. I'd like to add more board members. Secondly, we had 51 teams at our most recent competition. I'd like to get that number up to 100. It would be great to bring in more teams from surrounding cities in Ohio. I'd like to

SEE "ROBOTICS" PAGE 27

"ROBOTICS" CONTINUED

make it a bigger event and make it more challenging for the teams.

YOU ARE OBVIOUSLY FIERCELY COMMITTED TO ADVOCATING FOR MANUFACTURING AND RECRUITING THE NEXT GENERATION OF MANUFACTURING WORKERS. WHAT'S YOUR MOTIVATION? WHAT KEEPS YOU GOING?

Talking about manufacturing is really one of my passions. I'm a third-generation manufacturer and I love it. I think there is so much opportunity in manufacturing careers. But not enough people know about that opportunity. I think we're failing as a society by saying that if you don't get a four-year degree, you aren't going to be successful. The reality is that not everybody is built for college. And that's okay! Did you know that the average machinist makes the same amount of money as the average attorney? And the attorney comes out of school with over \$100,000 in debt. In our shop, we start non-skilled positions at \$15/hr., plus benefits, plus support for training and education. I want people to know that these careers are available. So I am telling them myself. I am visiting the schools; I am hosting students at my facility. I'll even pay for the buses! But the guidance counselors and teachers have to come, too.

YOU'RE NOT JUST ADVOCATING FOR MANUFACTUR-

ING IN YOUR COMMUNITY. YOU'RE ALSO WORKING AT THE NATIONAL LEVEL. YOU ATTENDED THE 2017 STATE OF THE UNION ADDRESS AT THE INVITATION OF PRESIDENT TRUMP, PARTICIPATED IN A SMALL GROUP ROUNDTABLE DISCUSSION WITH THE PRESIDENT AND VICE PRESIDENT PENCE, AND TESTIFIED BEFORE THE U.S. HOUSE OF REPRESENTATIVES COMMITTEE ON WAYS & MEANS. WHAT IS YOUR MESSAGE TO THE GOVERNMENT AND WHAT HAVE YOU LEARNED FROM THESE EXPERIENCES?

We make more in this country right now than we ever have. The recent tax cuts and regulatory reforms have been rocket fuel for manufacturers. Everyone is growing; everyone is hiring. Politicians are starting to realize that there is something there in manufacturing. But we need to keep spreading that message. In Dayton, Ohio, where our company is, one in five people are employed in manufacturing. But people don't know that. So I'm always extending invitations to politicians, asking them to visit our company so that we can show them what modern manufacturing is all about. Every manufacturer in the country needs to do that.

In talking with policymakers, one thing I've learned is that changing attitudes is a lot tougher than I thought it would be. The way we think about education and careers in this country is pretty entrenched. It's a

big ship to turn and it won't change course easily. Add to that the reality that policymakers have limited time and lots of people competing for their attention.

YOU RUN AND COMPANY AND STILL FIND THE TIME TO TAKE ON THE BIG ISSUES. HOW DO YOU BALANCE IT ALL?

It's really about taking stock of what's important. You can always make time for something that is important to you. As manufacturers, we know that we need more workers now and in the future. So, we need to take action now. Teddy Roosevelt said, "Complaining about a problem without proposing a solution is called whining." Manufacturers are not whiners and supporting the future of the industry should be important to all of us. We're all going to retire and when we do, we'll want to sell our businesses. If there's nobody under 70 to buy your business, you're going to have a problem. Getting involved now makes our industry stronger for today and tomorrow and that's good for everyone.



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APPRENTICESHIPS ARE HOT IN ARIZONA

BY BOB BONURA, APPRENTICESHIP TRAINING COORDINATOR, AZPMAP



ARIZONA
CHAPTER

The Arizona Precision Manufacturing Apprenticeship Program (AZPMAP) is designed to spring-board off the groundwork laid in place by our local NTMA chapter (ATMA). The ATMA, looking to address the shortage of skilled machinists, worked with local workforce and economic development teams.

The ATMA played a critical role in bringing together these groups with our “pipeline” local school districts to identify the true need, now and for the future. AZPMAP meets the diverse needs of local manufacturing companies that otherwise could not afford to be a part of a structured apprenticeship due to cost and manpower. Our competency-based apprenticeship manages the on-the-job training with each employer and their apprentice. The “re-

lated” training is partnered with our local educational centers providing secondary and post-secondary education. We are excited to now offer an online option for our apprentices through the NTMA-U learning center.

The skills of each apprentice are assessed at work, as well through the National Institute of Metalworking Skills (NIMS). We track all documentation through an online site, Grovesite. This allows the apprentice, their journey worker, company sponsor and our training coordinator to have ongoing and immediate access 24 hours a day, 7 days a week. We at AZPMAP are excited about the growing possibilities for our apprentices through their association with our local industry. But, the proof that this methodology is working is in our successful apprentices and their supportive

companies. To best explain our important relationship with companies, journey workers, apprentices and the dedicated people, listen to some of our current customers.

Our partnering shops range from aerospace & defense, automotive, medical, semiconductor to our local mining industry. The flexibility of our apprentices to learn while working on our partners' components in their processes is critical to this program design. Just as diverse as our partners are the apprentices filling in this critical pipeline.

AZPMAP currently has 18 apprentices working across the manufacturing sector in Arizona with three offers pending. We also have a pipeline of candidates that have been identified as “pre-apprentice” candidates meeting the needs of an entry level worker. We continue to grow and improve our program. For more information please visit our website at www.azpmap.org.



“Cadence Aerospace has been involved with the AZPMAP program for approximately 5 years. Over the years it has become increasingly difficult to find qualified machinists. Combine that with the fact that Cadence ADM has been growing steadily over the past decade and you have a difficult task of finding the employees needed to keep pace. That is where AZPMAP and the ATMA come in, matching up business, education and motivated individuals to create tomorrow’s machinists. The apprenticeship program is not going to cover all of our staffing needs (we have had multiple openings here for many months) but it is a solid complement to the normal process of recruiting, screening, interviewing and hiring employees in the machining trade.”

Here at Cadence ADM we experienced some tough luck early on with candidates completing the program for various reasons. Most recently however, we have had the good fortune of onboarding an outstanding individual that has made it through graduation and has joined the Cadence team full time. Jacob DeVerna is an outstanding addition to the workforce here and has skills that compare to someone with many more years of experience under their belt. In addition, we have two candidates going through the early phases of the program and we are confident they are going to graduate and become strong additions to Cadence. We have recognized the value that these people bring to the business and we will strive to always have multiple candidates working towards their certification with us.”

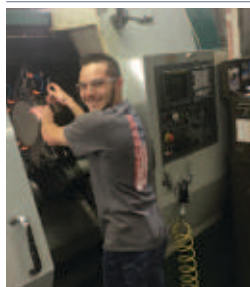
Michael Holmes

President, Cadence Aerospace, ADM Operations

“The AZPMAP partnership has helped Empire facilitate continuation of our machining apprenticeship. AZPMAP resources are a key reason why we continue this program. Investing in apprentices grows our next generation of workforce that is well-versed on both industry standards and our shop’s specialized needs.”

Mike Wagoner

**Service Operations Manager
EPM / Salvage Operations**



“It has been a great program that has taught me the skills needed to pursue a career in machining.”

Jacob DeVerna

**Recent Apprenticeship
Graduate, Cadence Aerospace, ADM Operations**



“The apprenticeship program was a very good experience for me. I enjoyed being able to learn some things in the classroom but the real attraction for me to participate in this program was the hands-

on learning aspect and learning the trade from journeyworkers with real-world experience in the industry. This program has given me the skills and opportunity I needed to get started in machining. It has also taught me skills and lessons that I am able to use every day in building a lifelong career. I am shocked at how much I have learned in what seemed to be a relatively short time period and what I am now able to do and what I can make thanks to this apprenticeship. It has been an amazing opportunity for me and I strongly encourage anyone else who has the chance to participate in this or similar apprenticeship programs to not hesitate.”

Gunnar Richardson

**Recent Apprenticeship Graduate
EPM / Salvage Operations**

"ARIZONA" CONTINUED



"From a very young age I have been fascinated with how things work and how I could recreate those same mechanisms. I love making things out of metal because metal lasts, unlike wood or plastic. I got my start in welding around the age of 8, helping my father build the family sand rail. Once high school started I immediately joined welding

class, where I used the work ethic given to me by my father to achieve Dobson High School's outstanding advanced welder of the year. The obvious next move to hone my skills was at the East Valley Institute of Technology's prestigious welding program. I worked until I could confidently say I was the best welder in the class. I've been invited to numerous welding competitions in and out of state. After I graduated EVT a certified welder and the Skills USA welding state champion, I realized that I wanted to be an aerospace engineer. I did some research and found that the best engineers typically had a background in machining, so I hung up my hood and tried on an apron for the best machine shop in AZ. I could not be happier with my decision. The road to becoming an engineer will be long but I will be learning the whole way, thanks to Modern Industries, AZPMAP, and the NTMA program."

Jacob Smigel

Current Apprentice, Modern Industries

"My personal Experience of finishing the AZPMAP apprenticeship was very positive. AZPMAP gave me the opportunity to work full time learning the different aspects of manufacturing while also helping me pay for my college classes."

Markus Gonzales

Recent Apprenticeship Graduate, Modern Industries

"Modern Industries is a charter member and a significant participant in AZPMAP since its inception. We continue to embrace the value that the program provides to our workforce.

With the very tight job market locally and nationally, many industries, and in particular manufacturing, have been experiencing restricted growth as a result of the lack of available experienced talent. As a result, it becomes critical that companies find alternative channels of employee development. The apprenticeship program is such a channel, in that we have the opportunity to "develop our own" as a path to obtain production skills that are necessary for our business. AZPMAP was developed through a consortium of state and local government, community colleges and private industry to meet this demand.

Of course, developing trainees to become accomplished machinists requires commitment from both the company and apprentice. While it provides a rewarding career and income to the apprentice, the company must invest time, oversight, and patience to reap the benefits. Modern Industries has partnered with AZPMAP extensively to take advantage of the program. We have already graduated four apprentices from the program and currently have 11 in various phases of training. All four are currently working as qualified machinists in our shop and continue to develop their skills, while greatly contributing to our company growth. We will continue to add apprentices to supplement our labor force and use the AZPMAP model of supervised work instruction with formal education to create new careers and enhance our critical skilled labor pool."

Ernie Bergmann

FDR Shop Supervisor, Modern Industries



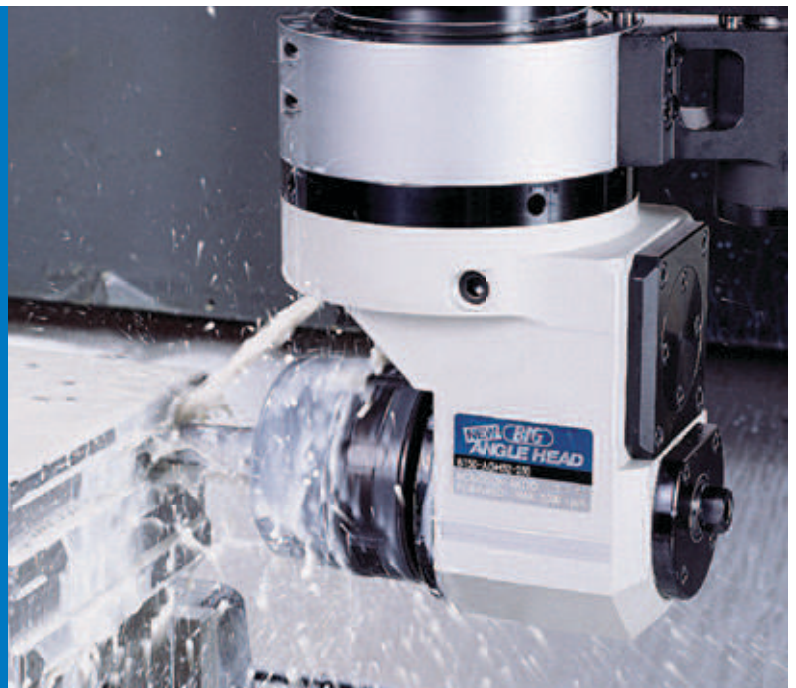
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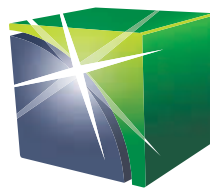
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APPRENTICESHIP IS ALIVE AND WELL IN SUNNY CALIFORNIA

BY MILT THOMAS, PRESIDENT OF WIRE CUT COMPANY, INC.



Although they have changed over the years, apprenticeship programs are still alive and thriving in Southern California. The Los Angeles Chapter of the National Tooling and Machining Association is the sponsor. The LA/NTMA Training Centers supply instructors and classrooms and keep all the apprenticeship program records. The Southern California Tool & Die, Mold, Machinist and Metal Working Trades Apprenticeship Committee controls the basic rules and regulations of the entire program.

Milt Thomas has been an integral part of the Committee, and apprenticeship programs in general, for 35 years. His company, Wire Cut Company, Inc. has been providing specialized, high-quality EDM services since 1978.



Above: The 2018 Apprenticeship Committee (L to R): Bob Collins, Milt Thomas - Co-Chairman, Eddie Buchler - Chairman, and Carey Knutson - of the LA/NTMA Training Center
Left: The 2018 Apprenticeship Class



The Committee has developed two- and four-year programs. The four-year programs are for the standard machinist, tool makers, mold makers, tool and die makers and maintenance machinist and others. The two-year programs are for CNC set-up technician, machine set-up technician wire EDM, conventional EDM set-up / operators, die finishers, and other machine technicians.

The four-year programs require 8,000 hours of on-the-job training, and the two-year programs require 4,000 hours on-the-

job training. The two-year program requires four related technical instruction classes - totaling 576 hours. The four-year program requires eight related technical instruction classes - totaling 1,152 hours. The courses cover shop math, shop theory, blueprint reading, metallurgy, jig and fixtures, machinery handbook and non-traditional machinery (EDM laser, water jet, etc.). The on-the-job requirements are addressed in the Employer Requirements agreement. The schedule is broken down to allow the

employer to schedule his or her employee to cover all the on-the-job requirements under the classification the employee has signed up for.

The program puts on a graduation banquet every year. The committee and chapter give special honors to the student with the best grades and the student with the best overall attendance. This banquet is hosted by the Board of Directors of The Los Angeles Chapter of The National Tooling and Machining Association and is attended by the graduates and their families.

The Journeyworker Certificate from Southern California Apprenticeship Program is recognized nationally in the machinist industry. There are many stories of people that have moved up the ladder because of this program.

Apprenticeship programs are worth it for your company, your region, and the individuals in the program. If you have questions about the program, please feel free to reach out.





WHAT DOES IT TAKE TO BE ONE OF THE LONGEST RUNNING NTMA CHAPTER APPRENTICESHIP PROGRAMS IN THE COUNTRY?

PITTSBURGH SHARES THE SECRETS TO THEIR LONGEVITY.



PITTSBURGH
CHAPTER

- Founded in 1976
- Accepting approximately 70 new apprentices each year into the four-year training program.
- Apprentices complete 144 hours of classroom training and 2000 hours of hands-on application at his or her job site annually.
- Apprentices attend training at three different locations across the city.
- The Pittsburgh Chapter NTMA works with a regional workforce development non-profit, New Century Careers, to manage the apprentice training program. They oversee the day-to-day operation of the program and handle everything from recruitment, registration, text book orders, NIMS testing and data entry.

• Our apprentice steering committee is the voice of industry that provides oversight for this program. This committee is made up of representatives from industry and meets almost every month during the year.

• This year, the steering committee introduced hands-on-training for first and second year students as part of the TMT curriculum.

• The Pittsburgh Chapter NTMA is proud to announce the graduation of 41 apprentices in 2018.

• Every year, the Pittsburgh Chapter holds a competition to identify the top apprentice. The day long competition consisted of a lathe project, a mill project and a written exam. Contestants are scored on the accuracy of their parts, time saved and the written test score.

Top: Central Westmoreland CTC Graduates Bottom Left: NCC Training Innovation Graduates
Bottom Right: Northern Westmoreland CTC Graduates

Below: Apprentice Contest 1st Place Winner and Hamill Manufacturing



Highest honors this year go to Chase Cramer of Hamill Manufacturing as Top Pittsburgh Apprentice.

The Pittsburgh Chapter extends congratulations to the men and women who represent the future of our industry in southwestern Pennsylvania!



ROCK RIVER VALLEY CHAPTER GRADUATES 23 JOURNEYWORKERS

BY DUTCH HINCK
APPRENTICE ADMINISTRATOR
ROCK RIVER VALLEY CHAPTER NTMA



On May 23, Journeyworkers from 16 different sponsors in 6 different trades: CNC precision machinist, CNC precision machinist-turning emphasis, CNC precision machinist-milling emphasis, tool & die maker, mold maker and machine builder graduated! The event brought 220 people together to celebrate the accomplishment.



Each journeyworker received a journeyworker card, certificate and medallion. To become a journeyworker, an apprentice needs to complete 640 hours of job related education which is provided by Rock Valley College, and 8,000 or 10,000 hours, depending on their trade, of on-the-job training provided by their sponsoring companies.

The keynote speaker was the honorable Paul Logli, who eloquently illustrated the importance of education plus on-the-job training in providing valuable products to fuel our country's economy.

Those students with Perfect Attendance and Perfect 4.0p Grade Point were also monetarily rewarded. Receiving \$200.00 for perfect attendance was Thomas Ross from Rockford Process Controls. Receiving \$200.00 for a perfect 4.0 grade point was Stephen Aupperle from Heritage Mold, John Breson from Dial Machine and Alex Carter from Circle Boring. Scott Lacerra from RG Mfg and Machining earned \$400.00 for perfect attendance and 4.0 grade point.

To top off the night, the Association gave five local seniors with the goal of continuing their education and pursuing a career in manufacturing, \$1,000 scholarships. This makes a total of \$27,000 awarded in the past 6 years.



MACHINIST APPRENTICE PROGRAM IN UTAH

SUBMITTED BY MADDIE DAHL, CHAPTER EXECUTIVE,
NORTHERN UTAH CHAPTER



MachineUtah.org is a campaign sponsored by the Northern Utah Chapter of the National Tooling and Machining Association (NUNTMA) to attract and recruit machinist apprentices for high-tech skilled jobs along the Wasatch Front.

Funded by a grant awarded by the Utah Cluster Acceleration Partnership (UCAP) program (2016-2017), the Machinist Apprentice Program is open to candidates who have completed high school and are at least 18 years of age. The four-year program includes 8,000 hours of on-the-job training and 576 hours of classroom training. Candidates who complete the program will receive the nationally recognized journeyworker's certificate, as issued by the U.S. Department of Labor.



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ALLE KISKI (AKI) IS ALL-IN FOR APPRENTICESHIPS

BY KEVIN HARTFORD, PRESIDENT OF AKI



AKI is a leading quality supplier of precision CNC machining, tool & die, welding, and fabrication products, based in Allegheny Township, Pennsylvania. We have a long reach across many industries, large and small. Since 2005, we have proudly called ourselves a leader in manufacturing and have been recognized throughout our community as trustworthy and dependable.

As the President of AKI, I believe in apprenticeships, and I encourage you to start or continue programs at your shop.

We're strongly affiliated with the NTMA's Pittsburgh Chapter. I was the President of the NTMA's Pittsburgh Chapter for eight years, and am extremely proud of our chapter's very

thorough and hands-on apprenticeship program that has been in existence for over 40 years. Over the last few years we've had five young men graduate from the program with their Journeyworker's Papers. Not only have they graduated but they're doing an excellent job for us. They're all in their twenties, so they'll be here for a while. Plus, they also love their jobs. We're very pleased with what they've learned, their attitude and their overall job performance.

We also have another young man in the program and two more young men starting the program next school year. The young man who will be starting his third year just received his report card for his second year. I'm happy to

5 graduates from the Apprenticeship Program. Front row: Erich Crissman, Chuck Kiehl, Brandon Jackson. Back row: Cameron Murdock, Travis Shellhammer.

share that our young apprentice, Tyler Ozarowicz, has straight As for the second consecutive year! We're very proud of these young men and their work ethic.

What better proof is there that apprenticeship works, then these great stories of young adults entering (and staying) in our industries?

Please feel free to contact me with specific questions about apprenticeship programs.





JOURNEYWORKER GIVES BACK

BY TERRY BRENDLE, SUPERVISOR, ASTRO MACHINE WORKS



Terry Brendle is a supervisor in the Manual Machining Department at Astro Machine Works in Ephrata, Pennsylvania. Astro Machine Works, Inc. was founded in 1984 with a clear vision: to serve the custom machinery and precision parts needs of the area's top regional and national companies. With each successful project, Astro's reputation grew, enabling the company to gradually expand their customer base geographically and from an industry standpoint. Today, Astro-built machines and parts can be found across the globe, doing all types of work for some of the world's leading companies.

Terry is responsible for working with new team members and is a key member of the Workforce Development Collaboration Team at Astro Machine Works. Terry wanted to share the following with our NTMA family, about the impact that the apprenticeship program has had on him both personally and professionally.

"My apprenticeship journey started while I was learning the Machine Tool trade at a local Technical College (Thaddeus Stevens College of Technology in Lancaster,

Pennsylvania). Even though I would be graduating with an Associate's Degree, my instructors were very adamant that I register to be an apprentice. Not only would it guarantee that I be trained on numerous pieces of equipment in numerous applications but would also make me more valuable to my employer or other potential employers.

After completing my apprenticeship and receiving my Journeyworker's papers as a Machinist, I was presented with the opportunity to continue to the next level as a tool and die maker. This was a career goal of mine and I feel very grateful to have had instructors and an employer that supported me through this process.

Now, after almost 20 years in the trade, I am in a position to help train our new apprentices. I find it very satisfying to help these young people develop into the employees our company needs and help them meet their career goals. I've met many talented and generous people that helped me along the way and I hope I can return the favor to others!"

Apprenticeship programs truly are life-changing. If you're interested in starting an apprenticeship program and

have questions, please reach out!



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OVERTON TOOL & DIE CELEBRATES THEIR GOLDEN ANNIVERSARY

Overton Tool & Die, a division of Overton Industries celebrated 50 years in business May 18 by hosting an Open House at the Mooresville, Indiana location. The event was well attended by customers, employees, family and friends. Local and state dignitaries were on hand to show support along with Mooresville law enforcement and firemen.

The event was catered and guests were treated to live music in the evening. Games were provided for the youngsters. Overton introduced a corporate logo, "Refueling for

the next 50" signifying the company's focus on positioning itself for growth and employee security for the next 50 years. If you're an IndyCar League fan, you may have seen this logo on the Ed Carpenter #20 car and the Spencer Pigot #21 car where it will appear for the rest of this year. Overton Industries is now a Technical



Partner for Ed Carpenter Racing of the Verizon IndyCar League.

Overton Tube Forming Systems, Franklin, Indiana will hold their Open House later this year on September 21.



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We'll see you in Denver, Colorado October 23-26, 2018.



The NTMA logo, featuring the letters 'NTMA' in a bold, white, sans-serif font, set against a solid blue rectangular background.