

THE RECORD

Published by the National Tooling and Machining Association

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THE RECORD

OPERATIONS & EDITORIAL

Roger Atkins, President
Doug DeRose, Editor

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Upcoming NTMA National Events



Legislative Conference RESCHEDULED

With all that is happening, we are bringing you the opportunity to have your voice heard by your elected officials in Washington, D.C. This is your chance to discuss our industry's priority issues and key challenges facing your business ahead of the 2020 elections.

The Legislative Conference is being rescheduled as a series of regional, virtual meetings. Once the dates have been coordinated in your area, you will receive a direct invite to attend this accessible and impactful experience. If you have questions or need more information, please contact Bill Padnos at bpadnos@ntma.org

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November 17-20, 2020

Registration is now open for NTMA's Precision Manufacturing Conference, Engage2020! This "all virtual" event will provide attendees with the same fantastic quality content that's always been at NTMA's core - industry-renowned speakers, informative breakout sessions, and incredible opportunities to connect, network, and engage with peers in the nation's manufacturing industry. Plus, your entire company can join us on our virtual platform! **Learn more starting on Page 14.**



PRESIDENT'S UPDATE

As you read this article, I hope that it finds each of you - our Members, National Associate Members, and our Affinity Partners - safe and healthy, both personally and professionally.

It is hard to believe we are entering Q4, the final stretch of the year. Oh, what a year it has been! We ended 2019 with great optimism for 2020, which the first couple of months seemed to deliver. And then, need I say more? Seemingly overnight, our lives and our businesses were changed. Setting aside the change to our personal lives, what did the changes to our business and industry expose?

All of these changes showed the entire country that we are a resilient industry, one that's prepared to protect and support our nation. Over 98% of our members and partners were deemed essential businesses and never missed a beat. It also highlighted the importance of the small to medium size manufacturers to our nation's employment and economy. We reacted before regulations to ensure we could continue to safely provide goods and services to the areas we serve.

It underscored the importance and commitment of our workforce. And lastly, it showed our willingness to step up when our country is in need.

Now, as we enter the final turn of the year, I would love to write that we are out of the woods and the tide has turned. However, while things are trending in a positive direction, I believe challenges and threats to our businesses and industry lurk ahead, and will unfortunately continue into 2021.

Those challenges and threats include:

- *the upcoming election and a possible administration change*
- *continued civil unrest*
- *the continued slow recovery of new orders*
- *the depletion of critical stimulus funds*
- *the continuation of the virus*
- *the difficulty of access to capital*
- *creation, effectiveness, and eventual distribution of an effective vaccine*
- *a potential significant gap in the development of our future workforce*

Unfortunately, I'm sure there are others. So, what's the good news? We are over-comers. We are the eternal optimists. We are creators. We are dreamers. We see what others can't. We are leaders. We are the "backbone" of U.S. Manufacturing. We are part of the largest association of elite precision manufacturers in the entire United States. We must continue to STAND TOGETHER on behalf of our businesses, employees, and customers.

I am totally committed to help lead and navigate us through these challenges and threats. As an industry, I believe that we will overcome these obstacles. We will continue to be the innovators that lead manufacturing into the future.

We are Stronger Together. BRING IT ON!!!

Roger Atkins, President - NTMA

NTMA MEMBERS

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How NTMA Members Stay Connected During Unprecedented Times

Many NTMA members are looking for ways to stay connected during these uncertain times. While we are not able to gather together in person, we can still connect virtually. To address this issue, in May, NTMA started hosting a bi-weekly "Member Drop-In" virtual meeting. This is a unique opportunity to check in with your fellow NTMA members, discuss complex problems, and get ideas or solutions from your peers.

This "virtual roundtable" has been very beneficial to the members who have attended and we encourage you to take advantage of this quick, easy, and free networking opportunity.

“

The Drop-Ins have been very informational for me and have helped me keep in touch with membership... I think it has really helped me get to know and interact with different members across the country. I see many old friends there as well as making some new ones. The NTMA remains a very important organization for Blaser and we will remain committed to participation in events.

Drew Borders
Business Development Manager, Global Markets
Blaser Swisslube Inc.



Upcoming Member Drop-Ins are scheduled on the following dates:

October 27th, 2pm EDT; November 10th, 2pm EDT

Please check your email for future invites, or contact NTMA's Member & Chapter Relations Manager, Kelly LaMarca at klamarca@ntma.org or (216)264-2837.

We hope to see you on the next call!

New Member Highlights



AEM Tool & Machining

355 Linnerud Dr.
Sun Prairie, WI 53590
608.837.6898
www.aemtoolandmachining.com
Milwaukee Chapter

AEM Tool and Machining is a third generation owned and operated machine shop serving customers for over 70 years. It is located in Sun Prairie, WI and serve multiple industries throughout the U.S. including the automotive and food services sectors. AEM specializes in CNC machining, low volume production, custom machined parts, prototyping, and tool and die machining. Russel Webber founded the family business as Acme Sales and Service shortly after returning home from serving in the U.S. Army during World War II and started out repairing electric motors and radios. In the 1960s he began focusing on rewinding

electric motors and doing machine shop work for a local business. Through the years the shop evolved to focus on custom machining. Russel's two sons, Robert and Richard, joined him and formed Acme Electric and Machine L.L.C. in the early 1990s. In the early 2000s they began doing business as AEM Tool & Machining. In January 2020 Richard's son, Paul, took over business operations. Throughout the years, AEM has remained committed to serving customers with quality and integrity, and striving to produce machine finished parts that exceed expectations.

Major Tool & Machine Sends Objects to Space



As a thank you for the work they contributed to the Boeing CST-100 Starliner, Major Tool & Machine was granted the privilege to send several objects into space aboard the flight test that took place on December 20, 2019.

During the flight test, Starliner orbited the earth 33 times and covered a distance of 854,367 miles before touching down on December 22, 2019 in New Mexico.

MTM chose to send its company flag, signed by several individuals involved with the program, along with a small medallion and patch as seen in the photographs. Incredible work by everyone involved!

www.majortool.com





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- What technologies increase shop floor efficiency?
- How can you train and retain top talent?
- What changes in the front office can affect the bottom line?

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Interview with Ben Belzer, President and COO of TCI Precision Metals



Ben Belzer, President and COO of TCI Precision Metals

Ben Belzer has been with the company for over 16 years and participated in NTMA's Emerging Leaders program for over a decade, since its inception. He sat down with Caitlin Sickles, NTMA's communications consultant, to discuss the role of technology in shaping the future of manufacturing and of our world.

NTMA: How did you arrive in your current position?

BB: My grandfather started the company in 1956. My father took over in the 1980s, so I grew up around the place. I spent my summers working here in high school and in college, starting in the shop and eventually in the Inside Sales Department. I didn't know immediately that this would be my career path. But, I was in college when it just clicked. I was taking econ and business classes at the University of Illinois, and I realized the coursework was a lot like what I was doing at home in the summers. I thought about how I could apply the coursework I learned to the machine shop, and potentially bring new ideas.

NTMA: So, what was your first full time role with the company?

BB: Well, I have always been technically inclined, interested in computer systems and the like. So, my dad knew he needed a new ERP system in order to improve the company, and he put me in charge of that almost right away. It was that process of building a team to source, select, and implement a new ERP system that gave me a broad view look into how a manufacturing company really operates – it was soup to nuts, cash to ship. I jumped right in the deep end. After a few years of implementation and training, especially on the accounting and finance side,

I started to feel like I truly understood this place. I didn't need to know how to run every machine or engineer every part, but I did start to feel confident that I knew how to lead best practices in the company. With that work under my belt, I was promoted to Inside Sales Manager, leading a team of my peers who had trained me. I was in management at about 25 years old, so I was young, but I had also earned the respect of people around me for quickly learning and picking up on the important concepts of running a business.

NTMA: So, you were both young (in age) and senior (in the company). What was that like and what are some tips and tricks other people might learn from you for managing?

BB: First and foremost, it's important to truly understand the work being done and the people doing it – what are the pain points. You don't need to be able to answer every question, but you do need to be able to guide people to find the answers. Now, I was already in NTMA, so I had been in rooms where the majority of the people were much older than I was at the time and that gave me some perspective: we're all marching in the same direction with the same fears and the same hopes for success – it's just a matter of how many years we've been at it! And I tried to lead meetings and lead the company with that same mentality: we're all in this together, and we are bringing different amounts and types of experience to the work.

NTMA: You mentioned being a part of NTMA – and seeing lots of grey hair in the room. As you likely know, there is a perception that young people, next generation CEOs, do not benefit from association membership the same way that their industry predecessors did. What do you make of that?

BB: You know, I get it. I remember my first few meetings when I'd see these guys who have known each other for 20 or 30 years and they are all having dinner together and engaging in stories from years past. Not only do they know each other, they have all kinds of experience that I didn't have. And, from that perspective, it can be uncomfortable to just jump in. For me, the Emerging Leaders team – which was called the NextGen team back then – was a great way

to bridge that gap, to find peers, and to find a place in the larger association. There are so many wonderful people in the association. For me, it was several past presidents and other long standing members who brought me right in and made me feel at home. So, I'd tell people that I understand initial hesitation, but I'd encourage them to just get involved and they will find that any reluctance will go right out the window.

NTMA: So, your advice is to young manufacturing leaders is to go the events.

BB: Yes! And I know that's a struggle, to get young people to the events. I know in the past there had been some barriers with price and location, but I think the association is trying to tackle that by planning events with younger people in mind, making things more accessible in a variety of ways. And sometimes the older generation has to pony up for the younger generation to help get them there! So, the truth is that there are older people there – that's a good thing. And there are younger people, and people making that transition into leadership positions. But, you've got to get to the event to see who is there and what you're truly missing out in terms of networking and education.

NTMA: So, we're talking about getting young people to industry events, but what about getting young people to the industry at all? We all know that the manufacturing industry is struggling to attract and retain young people. Do you have any insights or best practices for taking on that issue?

BB: Well I don't have that answer. If I did, I'd be doing all the talks at these industry events! I think, unfortunately, most young people have been steered away from technical skills and put on a fast track toward college. So, I think it starts in the schools, helping young people see that college isn't the only way to success. In fact, it can mean you're saddled with a ton of debt to get a job in a field that isn't a real fit for your skills. Meanwhile, manufacturing can make use of your skills and help you make a good living. When our company recently won an NTMA raffle, we were able to donate a Tormach machine tool to a local high school which has developed a machining technology program. These kids are brilliant and they could go

Texas State Technical College Online with NTMA

wherever they want to go. They are plugged into the manufacturing industry and into the technology that goes into making something. The more programs that exist like that, the more young people we're going to get into the industry.

NTMA: That's great.

BB: Yes, I think the technology will bring young people in. It brought me into it. It still brings me in - when there is a software or machine tool demonstration. I think that the young generation really leans into that technology piece. And we have that technology they like to play around with.

NTMA: Good point. And it's a point that seems especially important right now. The pandemic is obviously wreaking havoc on the manufacturing industry - and every industry. But, amid the challenges and difficulties, there is also a story about how technology is continuing to bring people together and make things possible. Do you see that as a potentially good thing?

BB: I do see opportunities. Before coronavirus, I had used Zoom maybe once and now it's a daily activity. So, getting everybody to jump in head first into online collaborative technology is huge. Now you can avoid those PowerPoint presentations over conference calls - those are snoozers - and you can have live, interactive video. Think of the power of that for product demonstrations. I think people will go back to trade shows and events in the future, of course, but I think you can incorporate that powerful virtual experience, too. I think there is real opportunity in it. I look forward to being able to go out and see people face-to-face again. I think things will go back to normal, whatever normal will be. But I think the future will incorporate some of the tools and tricks that we've learned and I think that will be a really good thing.

www.tciprecision.com

Darren Block, Statewide Department Chair for the machining program at Texas State Technical College, reached out to NTMA about our online courses at the end of April. He wanted to try us out to compare our content to their existing materials; most of his instructors utilized NTMA textbooks in their classrooms. Darren knew he had to prepare for the potential of limited or no in-person instruction for the start of the 2020-21 school year, and wanted to make sure he was providing students with the best quality content - preparing them for precision machining careers.

This inquiry led to a four month process of content review, along with plenty of behind-the-scenes maneuvering within the college. Darren was not just purchasing NTMA-U courses for one classroom - he needed a machining curriculum that would be utilized by 18 instructors and 200 students. Throughout the summer, all machining instructors across the college's multiple campuses reviewed our NTMA-U content, and they collectively made the decision that we offered the best program for them at the right price.



www.tstc.edu

TSTC was established 50 years ago to help create a strong Texas. TSTC graduates are highly valued by business and industry for their work ethic, knowledge, and workplace skills.

Darren spoke about the decision to utilize NTMA-U and the benefits of our courses:

"NTMA's material is extremely thorough and complete. The other material that we looked at jumped around a lot and touched on some concepts while skipping others altogether... this, in turn, added to the time that an instructor needed to ensure that all the concepts were covered thoroughly. We have used the Precision Machining Technology books before and a good portion of our program was based on those books...even with the books added to the cost it was still cheaper than the next closest competitor."

"NTMA only deals with machining. NTMA does machining really well...another small point is that all of the content meshes well and intertwines together. The math class talks about the things you need to know in machining. It does not talk about generic or theoretical concepts, but rather gives you problems you will encounter in the machining world."

"To me it was an easy choice and all of my instructors unanimously voted for NTMA."

- Darren Block

A win-win-win situation at its best: NTMA is proud that Texas State Technical College selected NTMA-U for their online machining curriculum, and Texas State Technical College is able to educate their students by utilizing industry-proven content at an affordable fee. Most importantly, our members in Texas and the surrounding states will benefit from having 200 more trained machinists entering into the field.

For more information about NTMA-U and how our online machinist education program can support your training efforts and those at high schools and colleges in your area, please reach out to Bill Padnos at 216-264-2828 or bpadnos@ntma.org.

NTMA ENGAGE2020 - FEATURED SPEAKERS - NOVEMBER 17 - 20, 2020



Harry Moser

Founder & President - Reshoring Initiative



Lisa Ryan

Chief Appreciation Strategist - Grategy



Paul Nathanson

Senior Principal
Policy Resolution Group at Bracewell LLP



Omar Nashashibi

Partner - The Franklin Partnership



Caitlin Sickles

Director, Government Affairs
Policy Resolution Group Bracewell LLP



John Guzik

Partner - The Franklin Partnership



Jim Carr

President & CEO - MakingChips LLC



Jim King

President & Chief Operating Officer
Okuma America Corporation



Jason Zenger

Founder & Visionary - MakingChips LLC



Montez King

Executive Director - NIMS



Nick Goellner C.M.T.S.E.

Partner - MakingChips LLC



Stu Shepherd

Vertical Development Director, Americas
Universal Robots USA, Inc.



David Anderson OSCP

Principal - CliftonLarsonAllen



Dr. Chris Kuehl

Managing Director - Armada Corporate Intelligence



Tripp Burd

Manager, Strategic Application Engineering
Markforged



Scott Dawson

President & Owner - Core Business Solutions, Inc.



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\ **KRISTEN HRUSCH - 216.264.2845**

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For more information and speaker biographies

EVENT PRICING \$295 PER MEMBER COMPANY

With **Engage2020**, NTMA's Premier Precision Manufacturing Conference, going all virtual, our goal is to provide the best online event experience to all attendees.

That starts with registration: to experience all four days of this virtual event, registration is **priced at \$295** per NTMA member company. You can now register an **unlimited number of individuals** from your company, allowing employees in all areas of your business to **Engage** with the nation's largest Precision Manufacturing network.

Engage2020 Schedule of Events SCHEDULE IS SUBJECT TO CHANGE

Tuesday, November 17, 2020

NTMA Connect Scavenger Hunt

1:00pm-5:00pm

Jump into our virtual world - NTMA Connect - early and join us for a scavenger hunt. Come and go as you please and familiarize yourself with NTMA Connect.

Wednesday, November 18, 2020

General Membership Assembly

8:30am-9:30am

Don't miss this first session of Engage2020. You will have a chance to meet our week's emcee and hear updates from NTMA President Roger Atkins.

Opening Keynote

The New Normal - Are You Ready for the Next Disruption?

9:30am-10:30am

Jim King President & Chief Operating Officer, Okuma America Corporation

Facing continuous workforce disruption, ambiguity, and confusion, manufacturing leaders need a reality check on which advances in technology will enable you to sustain your competitive advantage and adapt new talent strategies to grow your company. We are in the midst of a business transformation, and it is not just changing how we machine parts. It is changing nearly everything we do. Jim King, President and COO at Okuma America Corporation, will share real life examples of how emerging technologies are revolutionizing the way we all compete and operate. In the process, he will draw a road map to help you find a winning strategy to future proof your company and provide positive bottom line results.

Breakout Session: What is Industry 4.0?

Practical Strategies to Develop Your Industry 4.0 Workforce

10:45am-11:45am

Jim Carr President & CEO - MakingChips LLC

Nick Goellner C.M.T.S.E. Partner - MakingChips LLC

Jason Zenger Founder & Visionary - MakingChips LLC

As more and more processes on the manufacturing floor become digitized and connected, shop owners are finding the biggest challenge is usually not technology—it's people. Learn best practices from the men behind MakingChips for overcoming

issues, establishing practical and more effective ways to close skill gaps, maximize training efforts, and getting your frontline workforce ready for Industry 4.0.

Attend this session and go back to your shop with these takeaways

- How to reskill workers more efficiently, improve collaboration among your employees, and onboard new employees much faster and more effectively.
- How to adapt your current best practices for this new era.
- How to capture the knowledge and experience of your baby boomer employees reaching retirement to preserve their best practices for your future workforce.

Breakout Session: How Can Job Shops Automate Low Volume High Mix Production with Low Risk?

10:45am-11:45am

Stu Shepherd Vertical Development Director, Americas - Universal Robots USA, Inc.

Additive manufacturing represents a new transformative shift in the way things can be made. Each new innovation accelerates the Fourth Industrial Revolution, and the companies that thrive will do so by embracing new technologies and changing the way they do business. As with any new technology, the biggest challenges are to overcome the skills gap, identify best fit applications, and build a business case with traceable results. Investing in new equipment is a hard choice, and it is critical to balance the capital cost against the new revenue you project could be generated.

During this session, you will learn the following

- How manufacturers are using additive manufacturing in their shop to help make parts and improve profitability.
- How additive contributes significantly to the manufacturing workflow and accelerates creative problem solving.
- How educating and training your staff on new technology is critical to maximizing shop productivity.

Breakout Session: Government Resources for You - Putting Money Back in Your Business

10:45am-11:45am

John Guzik Partner - The Franklin Partnership

Omar Nashashibi Partner - The Franklin Partnership

Governments at all levels, whether state, local, or federal, provide countless incentives to invest in your business, train your employees, and grow manufacturing in America. NTMA's lobbying firm in Washington, D.C., The Franklin Partnership, will help those in the industry learn to identify the various tax credits and deductions available at the federal or state level that support manufacturing businesses. They will review the latest grants available for job training, worker retention, and hiring

new employees. In addition, this presentation will help your business identify other government resources available from OSHA workplace safety to Commerce Department export support services. This presentation will help manufacturers put their tax dollars back into their business by making your government work for you.

General Session 1

Reshoring/Onshoring

1:15pm-2:15pm

Harry Moser Founder & President - Reshoring Initiative

It is now clear: shorter supply chains are stronger, more competitive supply chains. Harry will demonstrate how to convince your customers that they will be more profitable buying from you – even if just 20% to 30% of products they now import. He helped one job shop win a \$60 million order.

Harry's session will teach you

- How to identify the companies that import what you make competitively.
- How to help the customer quantify the costs and risks of offshoring.
- How to market reshoring
- How to convince companies to reshore and buy from you

General Session 2

Election in a Pandemic - An Update from Washington, D.C.

2:30pm-3:30pm

John Guzik Partner - The Franklin Partnership

Omar Nashashibi Partner - The Franklin Partnership

Paul Nathanson Senior Principal - Policy Resolution Group, Bracewell LLP

Caitlin Sickles Director, Government Affairs - Policy Resolution Group, Bracewell LLP

Regardless of the state of the pandemic, economy, or stay at home orders, the U.S. Constitution requires that an election for President is held on the first Tuesday after the first Monday in November. Our team in Washington, D.C., The Franklin Partnership and Policy Resolution Group at Bracewell, will provide their insights into the election outcomes and the results of the race for the White House, battle for the U.S. Senate, and what control of the presidency means for manufacturing in America. 2020 has shown us the impact elected officials have on our businesses and communities; this presentation will provide manufacturers with information on how the elections affect tax, trade, job training, and regulatory policy, and possible scenarios for action in 2021.

Thursday, November 19, 2020

General Session 3

To Be Announced

8:30am-9:30am

Breakout Session: Improving Your Company's Productivity through Performance-Based Training

9:30am-10:30am

Montez King Executive Director - NIMS

In the ever-changing landscape of workforce development, manufacturers need to implement best practices in their learning and development approach to engage and retain their employees. Will company performance improve if you implement performance-based training? We will be sharing these best practices on how companies are accelerating learning and on-the-job training to impact their speed to competency and overall performance.

During this session, you will learn

- What actually is performance-based training and how does it differ from traditional OJT?
- How performance-based training enhances employee retention and improves employee experience & engagement.
- How highly-skilled team members produce more productivity and efficiency in the workplace.

Breakout Session: Introducing Additive Manufacturing in your Shop: How it can Reshape your Future

9:30am-10:30am

Tripp Burd Manager - Strategic Application Engineering - Markforged

Additive manufacturing represents a new transformative shift in the way things can be made. Each new innovation accelerates the Fourth Industrial Revolution, and the companies that thrive will do so by embracing new technologies and changing the way they do business. As with any new technology, the biggest challenges are to overcome the skills gap, identify best-fit applications, and build a business case with traceable results. Investing in new equipment is a hard choice, and it is critical to balance the capital cost against the new revenue you project could be generated.

During this session, you will learn the following

- How manufacturers are using additive manufacturing in their shop to help make parts and improve profitability.
- How additive contributes significantly to the manufacturing workflow and accelerates creative problem-solving.
- How educating and training your staff on new technology is critical to maximizing shop productivity.

Engage2020 Schedule of Events SCHEDULE IS SUBJECT TO CHANGE

Breakout Session: What I'm Seeing in Manufacturing

9:30am-10:30am

Scott LoSasso CEO - LoSasso Integrated Marketing

A look at the industry through the eyes of a social media influencer.

Breakout Session: Thriving in a Multi-Generational Workplace

10:45am-11:45am

Lisa Ryan Chief Appreciation Strategist - Grategy

With five generations in the workplace at the same time, it's important to realize that people are wired differently based on the year they were born. When you understand how each generation thinks, their relationship to the workplace, and where they place their priorities, it makes life easier for everyone. In this session we will explore the significant differences and similarities between generations, as well as the characteristics of each generation and why they "act like that."

In this session you will learn

- Onboarding practices that work and how to set up a plan to implement them
- Best practices for finding, attracting and retaining new talent
- Strategies to build employee engagement across multigenerational teams

Breakout Session: Company Certifications Today and Which Ones You Need for Tomorrow

10:45am-11:45am

Scott Dawson President & Owner - Core Business Solutions, Inc.

This year's disruption from COVID-19 caused nearly every small/medium size manufacturer to ask the question, "Do we need to diversify further?" But each market segment brings with it new requirements that must be met just to land your first contract. In many industries, vendor certifications are a go/no-go gate to land a new contract. With a renewed national focus on reshoring certain critical products, many SMEs are looking to capitalize on these opportunities to grow. Again, certifications must be part of the planning to be prepared to qualify for contracts that open up.

In this session, we will review certification requirements for a number of growing industries including aerospace, medical devices, automotive, Department of Defense and other government contracting. We will address certifications specific to these sectors and how a small-to-medium size business can use an integrated approach to simplify the addition of new certifications. We will also look at cybersecurity certifications that are becoming standard expectations in some industries.

Takeaways from this session will include

- Understanding certifications required in several growing markets.
- Learning how an integrated approach can simplify maintenance of multiple certifications.
- Developing a "certification road map" for your specific business.

Breakout Session: Augmented Reality and Connected Worker Technology for Manufacturing

10:45am-11:45am

Chris Kuntz VP Marketing- Augmentir

The way industrial companies operate has changed forever. With the growing skills gap and aging workforce causing increased pressures, as well as COVID-19 related workplace dynamics forcing remote and independent work, manufacturing companies are turning to disruptive technologies such as augmented reality, artificial intelligence, and connected worker software to connect and empower their workforces with the tools and knowledge needed to perform at higher levels of safety, quality, and productivity.

In this session, learn how leading manufacturing companies are using augmented reality and connected worker technology to adapt to the new normal. You will learn

- How connected worker technology is key to innovation with the frontline workforce in today's COVID-19 era.
- Why AI automation and AR-enabled remote collaboration are crucial to boosting productivity at a time when enterprises most need it.
- Best practices and real-world case studies of manufacturing companies that have adopted this type of emerging technology and the success they've achieved.

Industry Roundtables

1:45pm-3:15pm

Pick the industry segment that fits you best and join other industry leaders for an open discussion on the hot topics within that industry segment.

- Aerospace
- Medical
- Tools, Dies, and Molds
- Precision Machining

General Session 4

Cyber Battle - Attacker vs. Defender

3:30am-5:00am

David Anderson OSCP Principal - CliftonLarsonAllen

This interactive session will demonstrate network attacks from two perspectives: the attacker and the defender. The attacker will demonstrate popular attack vectors that many organizations are vulnerable to. The defender will demonstrate how to defend against these attacks. The defensive solutions provided will focus on free tools or configurations.

Takeaways from this session will include

- Understanding the attackers methodology.
- Identifying the ways to detect malicious activity.
- Learning about free tools that help network administrators secure their environment.

Friday, November 20, 2020

General Session 5

The Year of Living Dangerously [Economically Speaking]

9:45am-10:45am

Chris Kuehl Managing Director - Armada Corporate Intelligence

This has been a tumultuous year thus far with threats of a manufacturing recession, supply chain crises due to virus outbreak, and collapsed markets. All on top of issues that have been hitting manufacturing for years - labor shortage, trade disputes, rise of the robots, and so on. What is the sector looking at now and what does the rest of the year look like?

Closing Keynote

A Deeper Look Into the Future of Manufacturing

9:45am-10:45am

Elizabeth Engler Modic Editor, GIE Media Manufacturing Group

Robert Schoenberger Senior Editor, GIE Media Manufacturing Group

Eric Brothers Senior Editor, GIE Media Manufacturing Group

Join us for this panel and roundtable discussion session as industry experts from GIE Media discuss what the future is looking like for different industry sectors

Bonus Breakout Sessions

12:00pm-1:00pm

1:15pm-2:15pm

In an uncertain time, value doesn't just come from a price - but also what can be offered to build up and prepare you, your business, and its employees for the future. That goes beyond owners and general managers. These Targeted Breakout Sessions provide other key leaders within your company, including Human Resources, Operations & Quality, Financial Managers, Sales & Marketing, and Emerging Leaders, with meaningful, enriching discussions and key resources for their areas of your business.

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FORCE OPTIMIZATION - MACHINE SAVINGS CALCULATOR

Hourly Machine Cost \$
(total burden)

0 50 100

Number of Machine Tools

5

Weekly Machining Hours

80

Estimated Reduction in Machining Time
Reduce machining time by as much as 15-25% or more

25% (typical reported savings)

ANNUAL MACHINE SAVINGS

\$520,000



FORCE OPTIMIZATION - CUTTER SAVINGS CALCULATOR

Hourly Cutter Cost \$
(average cutter cost/cutter life hours
e.g. \$100/1 hour)

0 50 100

Number of Machine Tools

5

Weekly Machining Hours

80

Estimated Increase in Cutter Life
Extend the life of your cutters up to 100% or more

+50% increase

ANNUAL CUTTER SAVINGS

\$692,640



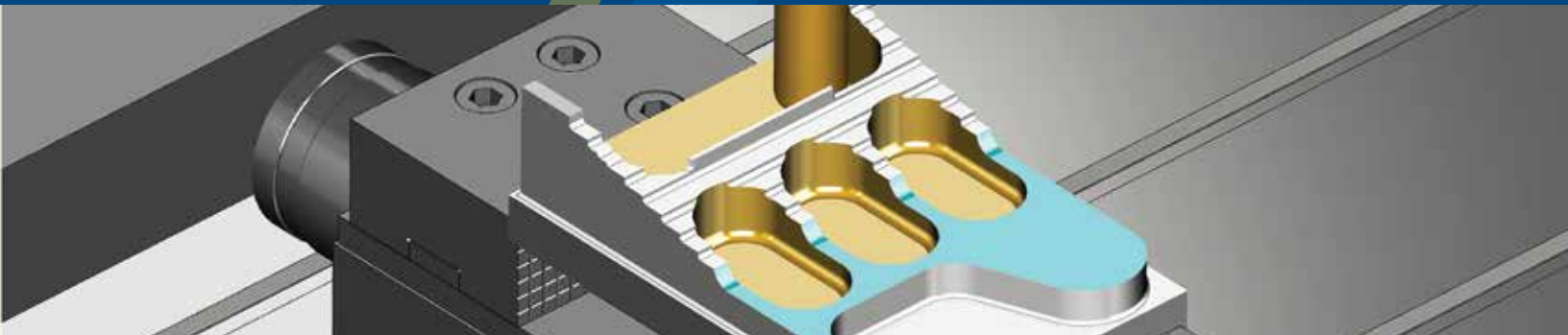
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Manufacturing Workforce Development Strategies Under COVID-19 Pandemic Conditions

By J. Craig McAtee, Executive Director & CEO, NCATC

The “New Normal” is what all of us are working hard, smart, and safely to define, refine, and adjust to as we move through the end of 2020 and into 2021.

Through all of the pain COVID-19 has and continues to cause in the world; we all have a chance to imagine and build a much better “New Normal 2.0.” The one thing we can control—right here and now—is our perspective.

There’s no better time than now to begin this process. More than at any time in recent memory, these issues have our attention. There is widespread acknowledgment that these are changes — at both the collective and individual level — we can no longer postpone. So, let’s take advantage of that.

For the foreseeable future, our economy will stumble through a slow thaw and millions of people will be out of work. Now is the time to help these unemployed workers and young first-time college students acquire the skills they will need to thrive in our tech-powered economy.

The urgency to get people back to work means that a short term program in cloud computing, for example, might be far more important to some underserved learners than the deferred payoff of a conventional four year degree. Millions of Americans don’t have the luxury nor the means of waiting.

Higher education is built around the credit hour as a measure of learning time. We build courses and programs on the number of credit hours required, assign faculty workloads on credit hours, allocate classroom space on a time basis tied to the credit hour, and disperse over \$150 billion of federal financial aid on the basis of time.

The problem is: time is a poor measure of learning — the credit hour is pretty good at indicating how long someone sat in a classroom, but not what they actually learned — and it often hurts the poverty stricken. The future of work is changing at a ferocious velocity and we will all be learning and re-learning throughout our careers. Higher education’s “New Normal 2.0” task is to offer just the right kind of learning in just the right amount in just the right way. We’ll know we have it right when students can:

- *Begin a program of learning on any day of the year;*
- *Go as fast or as slow as they need and pause when they want;*
- *Pay for mastery and actual learning instead of how long they spent sitting at a desk;*
- *Get learning from any source, as long as they can demonstrate it and it can be rigorously assessed; and*
- *Get financial aid for a wider array of programs offering a wider array of industry-recognized credentials from a wider array of providers.*

On May 1st 2020, the House Committee on Education and Labor introduced a \$15 billion Relaunching America’s Workforce Act (RAWA), the first round in the fight for a better post-Covid-19 future for America’s workers. The proposed legislation builds upon precedents established by the Great Recession-era American Recovery and Reinvestment Act of 2009 (ARRA) as well as the workforce system streamlining authorized by the Workforce Innovation and Opportunity Act of 2014.

The National Coalition of Advanced Technology Centers (NCATC) will continue to expand, explore, and exploit all of the important, emerging technology trends in advanced technology related and industry-driven workforce development needs for the 21st century, together with all of our education, workforce, and strategic industry partners and members.

We are committed to minimizing the spread of COVID-19 while maintaining quality membership value and benefits. We appreciate your ongoing connections, memberships, and partnerships with NCATC during this difficult time in our nation’s history. During the spring of 2020, the National Coalition of Advanced Technology Centers (NCATC) pivoted — like the majority of organizations across the world — to seriously and thoughtfully follow the national COVID-19 pandemic experts from the Centers for Disease Control and World Health Organization, as well as the National Governors Association, AACC and many others to

assimilate as many key factors in how and when our community and technical college members would be able to restart necessary hands-on learning in many of the applied technology and advanced manufacturing fields.

With guidance from many of our 38 industry strategic partners, such as the Association for Manufacturing Technology (AMT), the National Tooling & Machining Association (NTMA), Festo, Haas, the American Welding Society (AWS) / Weld-Ed, the National Coalition of Certification Centers (NC3), and college ATC experts, we developed a growing repository of best and promising practices that emulate real-world, successful, and safe working environments during the pandemic.

We also crafted a survey to learn how NCATC member colleges were handling hands on labs in light of COVID-19. Here are some of the highlights:

1. Labs that are currently open and providing hands on training:

- Industrial Maintenance / Mechatronics – 62%
- CNC / Precision Machining – 54%
- Welding / Fabrication – 55%
- Computer Labs – 46%

2. Who is responsible for sanitizing the instructional areas before each lab?

- Custodial Staff – 77%
- Faculty / Instructors – 70%
- Students – 54%
- Lab Assistants – 42%

3. PPE provided by college for students and faculty:

- Hand Sanitizer – 93%
- Surgical Mask / Face Coverings – 77%
- Protective Gloves – 58%

4. Top safety protocols being provided to current and potential students:

- Health Screening Prior to Classroom and Lab Participation Each Day
- Ppe Required for Faculty and Students
- Limited Number of Participants for Each Class
- Social Distancing
- Online And Hard Copy Covid-19 Regulations

- Outlined On a Handout With Signature Required
- Multiple Communication Points Including Email, Dedicated Website Page (<https://www.otc.edu/Covid/>), Phone Calling Campaigns

Below are just a few of the best practice ideas and approaches shared in the survey are:

“We spent time strategically planning how to go about the process in a safe, effective manner utilizing CDC guidelines and signage. Industry advised us on their needs and requirements. Also, the college established a COVID-19 response team who reviews and approves or denies protocols before the start of labs and then they share best practices with others.” — Chaffey College (CA)

“Offering more hybrid and online format as well as adjusting classroom capacity to meet the requirements of social distancing. Classroom settings are now at 50% or less of the normal capacity.” — Kentucky Community and Technical College System (KY)

“A diesel instructor had a concern about meeting ASE Accreditation requirements during this semester. They solved this problem by using worksites to cover ASE-required tasks to complete the diesel program. The key piece to that was coming up with a Youth Apprentice Skills Checklist to make sure student progress was properly documented.” — Gateway Technical College (WI)

There is a plethora of solid, well documented, and promising practices already happening in community and technical college and CTE high school hands on training labs across the U.S. NCATC’s aim is to continue documenting, sharing, and promoting them for the greater good of our entire educational community. Our next level approach was to create a series of helpful webinars with experts from industry, our strategic partners, and ATC / CTE-based education and workforce college members.

And as always, we encourage you to stay regularly connected and up-to-date on all ATC related “New Normal 2.0” activities and guidance, via the weekly updated NCATC website, social media (LinkedIn, Facebook, Twitter, etc.), and newsletters like this one.

One Voice: Federal Government Advocacy Program

Although 2020 has offered new and unique challenges to our industry, it’s important to continue to have a partner in advocacy. NTMA continues to work closely with the team at One Voice: the combined federal government advocacy program representing small and medium-sized business manufacturing in America.

In addition to providing guidance through the uncertainties caused by COVID-19, One Voice has an innumerable amount of fantastic resources, not only to help you answer questions in your shop, but to continue to make the most of your business. This includes sponsored virtual events, news releases, educational materials, the Talking with One Voice podcast, and much more.

We hope you continue to utilize this key partner in One Voice—one that ensures that millions of manufacturers across the country have their voices heard.

Please visit www.metalworkingadvocate.com for more information.

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Partner, Re3dTech

the fabricator

Technology Spotlight: A plan for better quoting in metal fabrication



"Our year-over-year revenue increased by more than 70%."

ANDY REEVES

Business Development & Department Manager, Vaupell



"We are now able to guarantee a 48-hour turnaround on all quotes."

TOM GENDICH

President, MetalMite



"We now spend less time engineering a quote and more time estimating one"

DAN VILLEMAIRE

President, C & M Precision Tech

**Modern
Machine
Shop**

Paperless Parts Partners with Online Metals To Expand Its Quoting Platform

NTMA Wage and Fringe Benefit Survey

By Mackay Research Group

The labor market has swung wildly since the COVID-19 virus halted the economy in mid-March. Government mandated shutdowns of business caused the loss of millions of jobs. Finally, in May and June, employers were allowed to reopen and recall workers.

In July the pandemic numbers picked up. A rising number of COVID-19 cases caused many states to impose renewed restrictions. The labor market is healing, but far from healthy. Precision machining shops are battling for the very few exceptional, skilled people out there.

The NTMA Wage and Fringe Benefit Report is designed to provide just such information. The report is divided into two sections—compensation and fringe benefits. Each section provides a wide range of information for the typical manufacturer as well as various breakouts by company characteristics.

- **Compensation**—This section provides information on 34 different job titles, ranging from apprentices to toolmakers. For each specific title, information will be provided for the average wage levels as well as high and low pay levels.
- **Fringe Benefit Programs**—A wide range of specific issues will be examined, including life and health insurance, retirement programs, vacation pay, holidays, and the level of unionization.

Scope of the Survey

The information in the survey will be available at the national level. In addition, three specific operating breakouts will be provided:

- **Chapter & Regional Analysis**—Results will be provided for your chapter, your state, and your geographic region.
- **Sales Size**—Results will be broken out for eight volume categories, from companies under \$1 million to companies over \$25 million.
- **Line of Business Breakdown**—Information by: Tools & Dies, Molds, General Precision Machining, Aerospace Machining & Fabrication, Special Machines, Production Operations, and Diversified Manufacturers.

Confidentiality: Only the Mackay Research Group staff will have access to your Wage & Fringe Benefit information. Every precaution has been taken to protect the complete confidentiality of all information. The NTMA staff will never have access to your information.

Participate in the NTMA Wage & Fringe Benefit Survey before November 1.

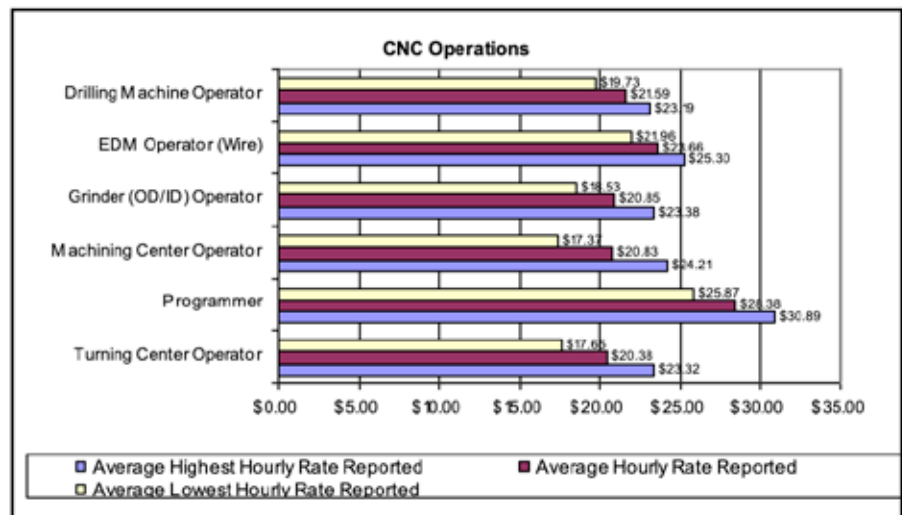
Free Report — NTMA manufacturers who submit their data to the 2020 study will receive the full Wage & Fringe Benefit Survey at no cost.

Questions? Need a copy of the survey?

Contact Taylor Mackay taylor@mackayresearchgroup.com

	Lowest Hourly Rate Report	Average Lowest Hourly Rate Report	Average Hourly Rate Report	Average Highest Hourly Rate Report	Highest Hourly Rate Report
Manual Machining Operations					
Boring Mill Operator	\$12.50	\$22.31	\$22.84	\$23.51	\$32.00
Diemaker	\$15.00	\$24.01	\$26.61	\$28.61	\$38.73
Drill Press Operator	\$9.00	\$15.93	\$16.52	\$17.11	\$26.00
EDM Operator (Electrode)	\$10.60	\$20.52	\$22.81	\$24.65	\$40.00
Grinder Operator	\$10.00	\$18.10	\$20.26	\$22.45	\$31.00
Jig Borer/Grinder Operator	\$12.08	\$21.58	\$22.17	\$22.71	\$29.25
Lathe Operator (Automatic)	\$10.00	\$18.14	\$19.67	\$22.10	\$36.00
Lathe Operator (Engine)	\$12.00	\$19.36	\$20.89	\$22.22	\$34.00
Machinist, All Around	\$12.00	\$21.45	\$23.09	\$24.68	\$39.50
Milling Machine Operator	\$10.00	\$18.13	\$19.83	\$21.77	\$33.50
Moldmaker/Die Cast Diemaker	\$12.00	\$21.66	\$24.60	\$25.70	\$32.00
Polisher (Molds)	\$11.00	\$19.31	\$20.36	\$21.58	\$30.04
Punch Press Set-up & Operator	\$9.00	\$15.82	\$17.62	\$19.48	\$27.05
Saw Operator	\$9.00	\$14.37	\$14.80	\$15.24	\$28.00
Special Machine Builder	\$11.50	\$22.15	\$23.94	\$26.96	\$40.87
Toolmaker (Jigs, Fixtures,	\$10.50	\$23.06	\$24.20	\$25.73	\$39.40

Benefit Programs	Typic NTMA	New Engla	Mid Atlant	South East	Mid-West	North Centr	South Centr	West
Medical/Hospitaliz	95	86	88	100	89	88	93	97
Medical/Hospitaliz	86	56	88	100	89	88	73	92
Prescription Drug	89	72	93	100	90	90	82	89
Dental Plan	81	72	76	75	83	83	73	93
Vision/Optical Plan	50	28	55	58	47	48	55	67
Cafeteria Plan	54	78	46	67	52	43	45	68
Group Term Life	82	89	76	92	94	79	55	67
Long-term	53	50	53	67	56	56	45	37
Short-term	64	78	69	75	81	54	55	22
Employee	28	39	26	42	37	19	18	15



Safety & Health

Cold Stress

1 The Problem

Cold temperatures are often associated with occupations that take employees outdoors during the winter months. In addition to the obvious outdoor cold condition jobs, many employees work indoors in refrigerated environments year round. Production facilities involving food and the distribution network required to get refrigerated food products to consumers require exposure to cold conditions. Prolonged exposure can lead to cold stress. Some employers fail to recognize and address cold stress hazards due to lack of monitoring and knowing the related signs and symptoms, which include:

- Hypothermia
- Frostbite
- Cold water immersion
- Dehydration

2 Solutions that Work



Even the most attentive, proactive worker can't tackle the dangers of cold stress alone. A cooperative approach is important. OSHA's guidance for cold stress prevention lists engineering controls, training, safe work practices and personal protective equipment (PPE), such as appropriate cold weather attire, as foundational components for employers to build into their work plans. Employers should:

- Provide engineering controls such as thermostats and door flaps to help control exposure
- Train workers on how to help prevent and recognize cold stress illnesses and injuries, and how to apply first aid treatment
- Give workers frequent breaks in warm areas
- Ensure employees are dressed properly in cold temperatures
- Reduce exposure time
- Allow workers to interrupt work if they feel a cold condition affecting them

3 How Grainger Can Help

Grainger has what you need to help keep your employees safe in extreme cold conditions.

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- Hand & Foot Warmers
- Portable Heaters
- Blankets
- Ice Melt
- Anti-Slip Footwear Attachments
- Work Shelters

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- Field Safety Specialists

Resources

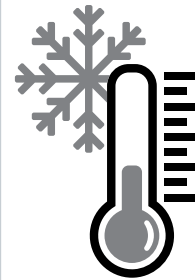
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- Safety & Health Catalog
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Contact your Grainger representative or login to Grainger.com/ntma and view a list of the most common cold stress related products

Fast Facts



4

MAIN FACTORS
that contribute¹
to cold stress:

- High or cold wind
- Dampness
- Cold temperatures
- Cold water

70°F

Hypothermia can occur in any water temperature below this level.²

2x

Twice as many people die of "excessive cold" conditions in a given year than of "excessive heat."³



¹ <https://ehs.princeton.edu/workplace-construction/occupational-health/heat-cold-stress/cold-stress-facts>

² NIOSH, Cold Water Immersion, June 2018

³ CDC's National Center for Health Statistics Compressed Mortality Database



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Manufacturing America's Future

**Have an interesting story you would like to
share with other NTMA members?**

Each issue of The Record will feature one or more stories
from members that fit the month's theme.

The submission deadline will be the first
of the month prior to the publication date.

Email to Kelly LaMarca at klamarca@ntma.org.

Upcoming Record Themes:

November
Value of Membership

December
Year in Review

What's Your Story?

